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Search Strategy:

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- 1 exp Urolithiasis/ (105586)
 - 2 ((kidney or renal or ureter*) adj3 (stone* or calculi*)).tw,kw. (59019)
 - 3 1 or 2 (122856)
 - 4 exp Lithotripsy, Laser/ or exp Ureteroscopy/ (17742)
 - 5 ((laser or holmium or shockwave or thulium) adj3 lithotripsy).tw,kw. (9057)
 - 6 (retrograde intrarenal surgery or RIRS or ureteroscop*).tw,kw. (19169)
 - 7 4 or 5 or 6 (29577)
 - 8 3 and 7 (18428)
 - 9 (basket* or dust*).tw,kw. (140734)
 - 10 8 and 9 (1494)
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 - 12 (exp animals/ or exp animal/ or exp nonhuman/ or exp animal experiment/ or animal model/ or animal tissue/ or non human/ or (rat or rats or mice or mouse or swine or porcine or murine or sheep or lambs or pigs or piglets or rabbit or rabbits or cat or cats or dog or dogs or cattle or bovine or monkey or monkeys or trout or marmoset\$1).ti.) not (humans/ or human/ or human experiment/ or (human* or men or women or patients or subjects).tw.) (10446172)
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 - 14 10 not 13 (1408)
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Ex-vivo Renal Stone Dusting: Impact of Laser Modality, Ureteral Access Sheath, and Suction on Total Stone Clearance.

Jiang P, Peta A, Brevik A, Arada RB, Ayad M, Afyouni AS, Limfueco L, Nguyen N, Palma A, Patel RM, Landman J, Clayman R

Ovid MEDLINE(R) ALL

Journal of Endourology. 2021 Oct 23.

[Journal Article]

UI: 34693735

INTRODUCTION AND OBJECTIVES: Conventional renal stone dusting is challenging; the holmium laser (Ho:YAG) and holmium with MOSES Effect (Ho:YAG-MOSES) fail to uniformly produce fragments <100 microns (i.e. dust). The superpulse thulium fiber laser (sTFL) may more effectively render uroliths into "dust," and may thus improve stone free rates. Accordingly, we performed ex-vivo evaluations with all three laser modalities, assessing stone fragments and stone clearance.

METHODS: Seventy-two ex-vivo porcine kidney-ureter models were divided into 12 groups of six: laser type (Ho:YAG, Ho:YAG-MOSES, sTFL), ureteroscope (URS) with and without applied suction, and presence or absence of a 14Fr ureteral access sheath (UAS). Calcium oxalate stones were pre-weighed and implanted into each kidney via a pyelotomy. Stones were treated at 16 watts using dusting settings of 0.4Jx40Hz (Ho:YAG) 0.2Jx80Hz (Ho:YAG-MOSES), and 0.2Jx80Hz (sTFL) for up to 20 minutes. No stone basketing was performed. Kidneys were bi-valved and residual fragments were collected, dried, weighed, and sieved to determine fragment size and stone clearance.

RESULTS: Initial stone mass (mg), procedure time (sec), and laser energy expenditure (kJ) were similar in all 12 groups. The greatest stone clearance was seen with sTFL+suction+UAS (94%) compared to a conventional technique (Ho:YAG+no suction+no UAS) (65%, $p<0.01$). The use of sTFL provided greater stone clearance than Ho:YAG or Ho:YAG-MOSES. Aspiration improved stone clearance for sTFL ($p=0.01$) but not for Ho:YAG or Ho:YAG-MOSES, consistent with the creation of smaller fragments with sTFL. Presence of a 14F UAS improved stone clearance in all scenarios ($p<0.01$).

CONCLUSIONS: In this ex-vivo study, stone clearance was optimized under the following conditions: sTFL laser, 14F ureteral access sheath, and aspiration. This combination resulted in 94% of stone fragments cleared; the 6% remaining fragments were all <2 mm. In all scenarios, deployment of a 14Fr UAS improved stone clearance.

Version ID

1

Status

Publisher

Authors Full Name

Jiang, Pengbo, Peta, Akhil, Brevik, Andrew, Arada, Raphael B, Ayad, Maged, Afyouni, Andrew S, Limfueco, Luke, Nguyen, Nicholas, Palma, Anton, Patel, Roshan M, Landman, Jaime, Clayman, Ralph

Institution

Jiang, Pengbo. University of California Irvine, 8788, Urology, 333 The City Blvd West, Suite 2100, Irvine, California, United States, 92868; pengboj@uci.edu. Peta, Akhil. University of California Irvine, 8788, Urology, Irvine, California, United States; Akhil.peta@my.rfums.org.

Brevik, Andrew. University of California Irvine, 8788, Urology, Irvine, California, United States; andrewkbrevik@kansascity.edu.

Arada, Raphael B. University of California Irvine Department of Urology, 481083, 101 The City Dr S, Orange, California, United States, 92868-2987; raphaelarada@gmail.com.

Ayad, Maged. University of California Irvine, 8788, Urology, 101 The City Drive S, Orange, California, United States, 92868; mlayad@hs.uci.edu.

Afyouni, Andrew S. University of California Irvine, 8788, Urology, Irvine, California, United States; aafyouni@hs.uci.edu.

Limfueco, Luke. University of California Irvine School of Medicine, 12219, Urology, 333 City Blvd W Suite 2100, Orange, California, United States, 92868; limfuecl@uci.edu.

Nguyen, Nicholas. University of California Irvine, 8788, Urology, 333 City Boulevard, Orange, California, United States, 92868; nicholas.nguyen@health.slu.edu.

Palma, Anton. University of California Irvine, 8788, Institute for Clinical and Translational Science, Irvine, California, United States; palmaa@hs.uci.edu.

Patel, Roshan M. University of California Irvine, 8788, Urology, Orange, California, United States; roshanmp@hs.uci.edu.

Landman, Jaime. University of California Irvine, 8788, Urology, Irvine, California, United States; landmanj@uci.edu.

Clayman, Ralph. University of California Irvine, 8788, Urology, Orange, California, United States; rclayman@hs.uci.edu.

Year of Publication

2021

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Link to the External Link Resolver:

2.

Ureteroscopy. [Review]

Wason SE, Monfared S, Ionson A, Leslie SW

Ovid MEDLINE(R) ALL

StatPearls Publishing. 2020 01.

[Review]

UI: 32809391

Ureteroscopy is a powerful tool at the urologist's disposal for both diagnostic and therapeutic interventions. It is the endoscopic key to the upper urinary tract. As with many great discoveries, its origin was an accident: in 1912, during a pediatric procedure for correction of congenital posterior urethral valves, Hugh Hampton Young inadvertently passed a rigid pediatric cystoscope into the patient's dilated ureter.[1] In the decades that followed, the potential for ureteroscopy remained largely unrealized. Initially, pediatric and juvenile cystoscopes were used for distal ureteroscopy in women, and then in men once longer, thinner instruments became available. With the addition of working channels, ureteroscopes transcended from the realm of the purely diagnostic to the therapeutic.[2] Karl Storz introduced the first rigid ureteroscope in 1980. It was 12 French in size with dual working channels, 50 cm long and awkward to use, but it worked. In the 1980s, Olympus adapted a pediatric bronchoscope to produce one of the first deflectable, practical, flexible ureteroscopes, allowing for greater ease of access to the renal pelvis and calyces.[3] It was not until 1989 that semi-rigid scopes became available, which allow up to two inches of flexion without fracturing or any significant distortion of the visual image.[4] With advances in ureteroscope and camera miniaturization, improved optical systems, digital video capability, laser lithotripsy, smaller ureteral stone baskets and dual working channels allowing for continuous pressurized irrigation for enhanced visualization, ureteroscopy has achieved the necessary imaging capability, versatility, precision, reliability, and safety to become a standard part of modern urological practice. Ureteroscopy is commonly used to diagnose and treat kidney and ureteral stones, ureteral strictures, and urothelial cancers. Importantly, its evolution was associated with the parallel development of holmium laser technology, which can be used in rigid, semi-rigid, and flexible ureteroscopes. Urological lasers achieve efficient fragmentation of all stone types and can treat urothelial tumors with vaporization or ablation.[5] The following will provide an overview of ureteral anatomy and practical considerations for the application of

ureteroscopy including indications, contraindications, equipment, operative technique, practical usage tips, and complications.

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Book Title

StatPearls

Version ID

1

Authors Full Name

Wason, Shaun E., Monfared, Sina, Ionson, Annaliese, Leslie, Stephen W.

Institution

Wason, Shaun E.. Boston University Monfared, Sina. Boston University School of Medicine

Ionson, Annaliese. Boston University School of Medicine

Leslie, Stephen W.. Creighton University Medical Center

Publisher

StatPearls Publishing

Year of Publication

2020

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3.

Dusting Efficiency of a Novel Pulsed Thulium:Yttrium Aluminum Garnet Laser vs a Thulium Fiber Laser.

Kraft L, Yilmaz M, Petzold R, Gratzke C, Suarez-Ibarrola R, Miernik A

Ovid MEDLINE(R) ALL

Journal of Endourology. 36(2):259-265, 2022 Feb.

[Journal Article]

UI: 34693738

Background: Holmium:yttrium aluminum garnet laser (Ho:YAG) is still considered the gold standard in laser lithotripsy. There is a large body of literature comparing the capabilities of Ho:YAG and thulium fiber lasers (TFLs). The novel, pulsed thulium:yttrium aluminum garnet laser (p-Tm:YAG) evaluation model has only been compared with Ho:YAG in terms of its dusting performance to date. It was this study's aim to compare the p-Tm:YAG's dusting efficiency with that of a chopped TFL. Materials and Methods: During the laser ablation procedure, while the laser device was emitting light, the laser fiber was spiraled across the surface of a uniform kidney stone model via software. We relied on the stone model's difference in weight before and after the dusting procedure to assess the dusting efficiency and assessed each laser device's dusting efficiency at various preset laser configurations and laser fiber-motion speeds. We compared both laser devices' laser configurations, which were identical in pulse energy and frequency, while keeping in mind that the pulse duration differed significantly. In addition, we tested each laser device's capability. Results: The average ablated weight across all laser configurations was 0.61 g (standard deviation [SD] = 0.44 g) for p-Tm:YAG and 0.76 g (SD = 0.51 g) for TFL. After statistical analysis, we found no significant difference in ablated weight between the laser devices ($U = 1715.5$, $p\text{-value} = 0.11$). The maximum permissible frequency configuration for TFL was 1600 Hz, which resulted in the worst overall dusting output. Conclusions: We observed that the p-Tm:YAG's dusting efficiency resembled that of TFL in the identical pulse energy and frequency laser configurations. The ablation efficiency did not seem to be affected by the laser devices' differences in pulse duration. Slower laser fiber-motion speeds resulted in more efficient ablation. When using the maximum preset frequency and power configuration, TFL's dusting efficiency appeared to be inefficient.

Version ID

1

Status

In-Data-Review

Authors Full Name

Kraft, Lea, Yilmaz, Mehmet, Petzold, Ralf, Gratzke, Christian, Suarez-Ibarrola, Rodrigo, Miernik, Arkadiusz

Institution

Kraft, Lea. Department of Urology, Faculty of Medicine, Medical Centre, University of Freiburg, Freiburg, Germany. Yilmaz, Mehmet. Department of Urology, Faculty of Medicine, Medical Centre, University of Freiburg, Freiburg, Germany.

Petzold, Ralf. Department of Urology, Faculty of Medicine, Medical Centre, University of Freiburg, Freiburg, Germany.

Gratzke, Christian. Department of Urology, Faculty of Medicine, Medical Centre, University of Freiburg, Freiburg, Germany.

Suarez-Ibarrola, Rodrigo. Department of Urology, Faculty of Medicine, Medical Centre, University of Freiburg, Freiburg, Germany.

Miernik, Arkadiusz. Department of Urology, Faculty of Medicine, Medical Centre, University of Freiburg, Freiburg, Germany.

Year of Publication

2022

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4.

Flexible ureteroscopic renal stone extraction during laparoscopic ureterolithotomy in patients with large upper ureteral stone and small renal stones.

You JH, Kim YG, Kim MK

Ovid MEDLINE(R) ALL

Canadian Urological Association Journal. 8(9-10):E591-4, 2014 Sep.

[Journal Article]

UI: 25295127

INTRODUCTION: We describe laparoscopic ureterolithotomy with renal stone extraction using a stone basket under flexible ureteroscopy. We describe its efficacy through a laparoscopic port and a ureterotomy site in patients with large upper ureteral stone and small renal stones.

METHODS: Between January 2009 and February 2012, we performed laparoscopic ureterolithotomy with renal stone extraction using a stone basket under flexible ureteroscopy in 11 patients who had upper ureteral and renal stones. The retroperitoneal approaches were used in all patients using 3-4 trocars.

RESULTS: All procedures were performed successfully without significant complications. Mean operative time was 78.5 minutes (range: 52-114 minutes). The mean size of ureteral stone was 19.91 mm (range: 15-25 mm). In addition, 25 renal stones (mean size 7.48 mm, range: 2-12 mm) were removed from 11 patients. The mean length of hospital stay was 3.5 days (range: 2-6 days).

CONCLUSIONS: Laparoscopic ureterolithotomy with renal stone extraction using a stone basket under flexible ureteroscopy can be considered one of treatment modalities for patients with large upper ureteral stones accompanied by renal stones who are indicated in laparoscopic ureterolithotomy.

Version ID

1

Status

PubMed-not-MEDLINE

Authors Full Name

You, Jae Hyung, Kim, Young Gon, Kim, Myung Ki

Institution

You, Jae Hyung. Department of Urology, Chonbuk National University Medical School and Research Institute of Clinical Medicine of Chonbuk National University-Biomedical Research Institute of Chonbuk National University Hospital, Jeonju, South Korea. Kim, Young Gon. Department of Urology, Chonbuk National University Medical School and Research Institute of Clinical Medicine of Chonbuk National University-Biomedical Research Institute of Chonbuk National University Hospital, Jeonju, South Korea.

Kim, Myung Ki. Department of Urology, Chonbuk National University Medical School and Research Institute of Clinical Medicine of Chonbuk National University-Biomedical Research Institute of Chonbuk National University Hospital, Jeonju, South Korea.

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4164544>

Year of Publication

2014

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5.

Stone formation from nonabsorbable clip migration into the collecting system after robot-assisted partial nephrectomy.

Lee Z, Reilly CE, Moore BW, Mydlo JH, Lee DI, Eun DD

Ovid MEDLINE(R) ALL

Case Reports Urology. 2014:397427, 2014.

[Journal Article]

UI: 24778893

We describe a case in which a Weck Hem-o-lok clip (Teleflex, Research Triangle Park, USA) migrated into the collecting system and acted as a nidus for stone formation in a patient after robot-assisted partial nephrectomy. The patient presented 2 years postoperatively with left-sided renal colic. Abdominal computed tomography scan showed a 10 millimeter renal calculus in the left middle pole. After using laser lithotripsy to fragment the overlying renal stone, a Weck Hem-o-lok clip was found to be embedded in the collecting system. A laser fiber through a flexible ureteroscope was used to successfully dislodge the clip from the renal parenchyma, and a stone basket was used to extract the clip.

Version ID

1

Status

PubMed-not-MEDLINE

Authors Full Name

Lee, Ziho, Reilly, Christopher E, Moore, Blake W, Mydlo, Jack H, Lee, David I, Eun, Daniel D

Institution

Lee, Ziho. Department of Urology, Temple University School of Medicine, 255 S 17th Street, Suite #2101, Philadelphia, PA 19103, USA. Reilly, Christopher E. Department of Urology, Temple University School of Medicine, 255 S 17th Street, Suite #2101, Philadelphia, PA 19103, USA.

Moore, Blake W. Department of Urology, Temple University School of Medicine, 255 S 17th Street, Suite #2101, Philadelphia, PA 19103, USA.

Mydlo, Jack H. Department of Urology, Temple University School of Medicine, 255 S 17th Street, Suite #2101, Philadelphia, PA 19103, USA.

Lee, David I. Division of Urology, University of Pennsylvania School of Medicine, Philadelphia, PA, USA.

Eun, Daniel D. Department of Urology, Temple University School of Medicine, 255 S 17th Street, Suite #2101, Philadelphia, PA 19103, USA.

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3978407>

Year of Publication

2014

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6.

Perinephric abscess following uncomplicated ureteroscopy.

Gayed BA, Jacobs BL, Jackman SV

Ovid MEDLINE(R) ALL

Canadian Urological Association Journal. 4(3):E74-5, 2010 Jun.

[Journal Article]

UI: 23293692

We report the case of a 60-year-old male who presented with left-sided back pain 1 month after an uncomplicated ureteroscopy and stone-basketery for left 6-mm mid-pole and 4-mm lower pole stones.

Version ID

1

Status

PubMed-not-MEDLINE

Authors Full Name

Gayed, Bishoy A, Jacobs, Bruce L, Jackman, Stephen V

Institution

Gayed, Bishoy A. University of Pittsburgh Medical Center, Department of Urology, Pittsburgh, PA.

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3499924>

Year of Publication

2010

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[SFX](#)

7.

Buccal mucosa ureteroplasty for the treatment of complex ureteric injury.

Sadhu S, Pandit K, Roy MK, Bajoria SK

Ovid MEDLINE(R) ALL

Indian Journal of Surgery. 73(1):71-2, 2011 Jan.

[Journal Article]

UI: 22211045

Bowel interposition and auto-transplantation of kidney, thought to be a major undertaking, remain the traditional option for the treatment of major and complex ureteric lesions. Buccal mucosa, a well known tissue for urethral reconstruction, can be used safely for the repair of ureter. However, this has been reported poorly in the literature. Here we report a 59- year-old female who had a major ureteric injury by Dormia basket during ureteroscopic extraction of a 2.6 cm impacted stone at pelvi- ureteric junction. On exploration, a long anterior slit was found in the upper ureter measuring approximately 8 cm. It was successfully repaired by free buccal mucosal patch graft over a Double J stent. Thus, a major surgery was avoided. Intra venous urography at 6-month follow up demonstrated a patent ureter. Our experience is encouraging and merits wider application in complex ureteric lesion.

Version ID

1

Status

PubMed-not-MEDLINE

Authors Full Name

Sadhu, Sagar, Pandit, Kuntal, Roy, Manas K, Bajoria, Suresh K

Institution

Sadhu, Sagar. Rabindranath Tagore International Institute of Cardiac Sciences, Kolkata, India.

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3077186>

Year of Publication
2011

Link to the Ovid Full Text or citation:

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8.

Flexible ureterorenoscopy and laser lithotripsy in children.

Yeow WC, Pemberton R, Barker A

Ovid MEDLINE(R) ALL

Journal of Indian Association of Pediatric Surgeons. 14(2):63-5, 2009 Apr.

[Journal Article]

UI: 20671848

BACKGROUND: Flexible ureterorenoscopy (FUR) and laser lithotripsy (LL) are techniques used in the management of upper urinary tract disorders. These techniques, so far established in adults, are now being used in children as well. We report our experience with 26 cases of pediatric upper urinary tract disorders treated using these techniques.

METHODS: In the period from 1997 to 2006, FUR was performed in 26 children (14 males and 12 females) in the age group of three months to 15 years with a mean age of 8.2 years. Twenty five were stented prior to undergoing FUR and 24 presented with suspected upper tract stones (17 pelvicalyceal and seven midureteric). Two cases showed JJ stent migration post-pyeloplasty.

RESULTS: Eight cases involved diagnostic procedures. Six excluded the presence of renal calculi, one had focal medullary sponge kidney, and one had calcified papillae. There were 15 cases of therapeutic FUR. Of these, 12 had LL with only one had incomplete stone fragmentation which subsequently passed spontaneously. Other therapeutic procedures included removal of migrated JJ stents and FUR with the basket removal of a midureteric calculus. Three cases failed ureterorenoscopy due to technical difficulties. The overall success rate was 88.5% for FUR.

CONCLUSION: FUR and LL are valuable minimally invasive techniques for the examination and treatment of pediatric upper urinary tract conditions. Preoperative stenting improves passage of

the ureteroscope and with progressive miniaturization of instruments, the lower weight limit will decrease.

Version ID

1

Status

PubMed-not-MEDLINE

Authors Full Name

Yeow, When-Chan, Pemberton, Richard, Barker, Andrew

Institution

Yeow, When-Chan. Department of Pediatric Surgery, Princess Margaret Hospital, Roberts Road, Subiaco, Western Australia 6008.

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2905533>

Year of Publication

2009

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9.

The Use of a Sheathless Basket via Miniature Ureteroscopes.

Watson G

Ovid MEDLINE(R) ALL

Diagnostic & Therapeutic Endoscopy. 1(3):177-81, 1995.

[Journal Article]

UI: 18493362

The conventional use of a basket involves a metallic wire section that is contained within a polythene sheath. The wire basket can be withdrawn or protruded from the sheath using a handle. The advantage of this system is that the basket can be kept shut or open at will within the

ureter. Thus one can keep the basket closed in order to maneuver the basket past a stone before opening it above the stone. With the development of efficient and safe lithotripsy modalities becoming widely available and with miniaturization of these and the ureteroscopes, it is becoming less common to dilate the ureter. Therefore it is not frequently possible to extract a stone intact. Baskets still can be used secondarily to extract the fragments. It is possible to use the basket wire without its sheath. The ureteroscope channel effectively becomes the sheath, and the basket opens immediately on protruding it beyond the ureteroscope. This has the following advantages: (a) A larger-diameter basket wire can be introduced. The very small baskets of 2F and 3F used via miniature ureteroscopes are very flimsy. When the sheath is removed, it becomes possible to use an otherwise 3F basket via a 2F channel. (b) The operator can work the basket using just two fingers close to the instrument channel port. This is more ergonomic than working an opening mechanism at the end of the basket, because this latter system takes the operator's hand away from the instrument. (c) The basket can be detached more readily from the ureteroscope, should it become impacted together with a stone within the ureter. This makes it possible to reinsert the ureteroscope alongside the basket and fragment the stone within the basket, provided that there is no reinforced section to the inner wire at the handle.

Version ID

1

Status

PubMed-not-MEDLINE

Authors Full Name

Watson, G

Institution

Watson, G. Consultant Urologist and Senior Lecturer Institute of Urology and St. Peter's Hospital London UK.

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2362476>

Year of Publication

1995

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10.

Novel Biocompatible Adhesive to Remove Stone Dust: Usability Trial in a Kidney Model.

Hausmann T, Becker B, Gross AJ, Netsch C, Rosenbaum CM

Ovid MEDLINE(R) ALL

Journal of Endourology. 35(8):1223-1228, 2021 08.

[Journal Article. Research Support, Non-U.S. Gov't]

UI: 33559523

Introduction and

Objective: "Clinically insignificant residual fragments" are an independent predictive factor for recurrence of nephrolithiasis. To improve the stone-free rates (SFR), we tested the viability of a novel bioadhesive system for intrarenal embedding and retrieval of residual fragments <1 mm in a kidney model. Materials and Methods: All procedures were performed in a standardized setting, including a kidney model (Kidney module right, Samed GmbH, Dresden) in a plastic basin filled with water. We used a Viper URF flexible ureterorenoscope (fURS) (6.6/8F, Richard Wolf, Knittlingen). A mean amount of 138 mg (standard deviation [SD] +/-32.2 mg) of sand grains (range, 0.2-0.8 mm) was inserted in renal calices of the kidney model. We assessed the extraction efficacy of fURS using the bioadhesive system. In total, eight different surgeons performed each one trial, respectively. The endoscopic and macroscopic SFR, the level of the surgeons' experience, and the overall time of stone retrieval were evaluated. Additionally, a survey of the participants was conducted, to assess the contentment with this novel system.

Results: The extraction of the sand grains was only possible using the bioadhesive system, otherwise they were too small sized to grab with a retrieval basket. The total SFR was 84% (SD +/-11.7%). The operation time ($p = 0.052$) and the percentage of extracted sand grains ($p = 0.194$) were not significantly different between experienced and less experienced surgeons. All participants stated that it was a promising technique, which they could imagine using on a daily basis. Conclusions: The bioadhesive system improves the SFR with fragments from 0.2 to 0.8 mm (0% vs 84%). Also, the performance of this operation is not dependent on the surgeon's experience level. This method might improve the SFR in difficult anatomic conditions, that is, lower calices or anomalous kidneys.

Version ID

1

Status

MEDLINE

Authors Full Name

Hausmann, Teresa, Becker, Benedikt, Gross, Andreas J, Netsch, Christopher, Rosenbaum, Clemens M

Institution

Hausmann, Teresa. Department of Urology, Asklepios Clinic Barmbek (Institution to Which this Work Is Attributed), Hamburg, Germany. Becker, Benedikt. Department of Urology, Asklepios Clinic Barmbek (Institution to Which this Work Is Attributed), Hamburg, Germany.

Gross, Andreas J. Department of Urology, Asklepios Clinic Barmbek (Institution to Which this Work Is Attributed), Hamburg, Germany.

Netsch, Christopher. Department of Urology, Asklepios Clinic Barmbek (Institution to Which this Work Is Attributed), Hamburg, Germany.

Rosenbaum, Clemens M. Department of Urology, Asklepios Clinic Barmbek (Institution to Which this Work Is Attributed), Hamburg, Germany.

Rosenbaum, Clemens M. Department of Urology, University Clinic Hamburg-Eppendorf, Hamburg, Germany.

Year of Publication

2021

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[SFX](#)

11.

[DOES CHOOSING BETWEEN DUSTING OR FRAGMENTATION DURING LASER LITHOTRIPSY OF URINARY STONES CHANGE THE LONG TERM RESULTS?]. [Hebrew]

Boyarsky L, Dekel Y, Klein I, Rinott G, Friedman B, Stein A, Duvdevani M, Freifeld Y

Ovid MEDLINE(R) ALL

Harefuah. 160(9):565-569, 2021 09.

[Journal Article]

UI: 34482667

INTRODUCTION: Variations in laser pulse energy and its frequency during lithotripsy, affect the rate and the method of stone breaking. The main modes of lithotripsy are dusting and fragmentation.

AIMS: Comparison between long term results of dusting versus fragmentation, by defining the stone free rate (SFR) for each method and the time period until re-treatment need.

METHODS: Clinical and radiological follow-up of 43 patients who underwent laser intervention using dusting or fragmentation. Both groups shared similar demographic features, stone sizes and locations. For each group, the percentage of patients without stones requiring intervention during the follow-up period of 36 months was defined as a success parameter. The incidence of emergency department (ED) admissions and auxiliary interventions were assessed.

RESULTS: Thirty-eight patients were included in the study. No difference in the median period of time to clinically significant stone was seen ($p=0.213$). No difference was found in SFR between the dusting (83.3%) and the fragmentation (84.6%) groups respectively ($p=1.000$). No statistically significant difference was shown in ED admissions due to renal colic occurring in 31.6% and 10.5% within dusting and fragmentation groups respectively ($p=0.116$).

CONCLUSIONS: No difference in time period until clinically significant stone appearance was seen. No significant difference in SFR was found between the groups at the long term follow-up.

DISCUSSION: It seems that within the dusting group, the ED admission rate could be somewhat higher. However, this impression lacks statistical significance. A long term prospective study with a larger population is needed to confirm these results.

Version ID

1

Status

MEDLINE

Authors Full Name

Boyarsky, Leonid, Dekel, Yoram, Klein, Ilan, Rinott, Gal, Friedman, Boris, Stein, Avi, Duvdevani, Mordechai, Freifeld, Yuval

Institution

Boyarsky, Leonid. Urological Department, Carmel Lady Davis Medical Center, Haifa. Boyarsky, Leonid. Urological Department Hadassah Ein Kerem, Jerusalem.

Dekel, Yoram. Urological Department, Carmel Lady Davis Medical Center, Haifa.

Klein, Ilan. Urological Department, Carmel Lady Davis Medical Center, Haifa.

Rinott, Gal. Urological Department, Carmel Lady Davis Medical Center, Haifa.

Friedman, Boris. Urological Department, Carmel Lady Davis Medical Center, Haifa.

Stein, Avi. Urological Department, Carmel Lady Davis Medical Center, Haifa.

Duvdevani, Mordechai. Urological Department Hadassah Ein Kerem, Jerusalem.

Freifeld, Yuval. Urological Department, Carmel Lady Davis Medical Center, Haifa.

Year of Publication

2021

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Link to the External Link Resolver:

[SFX](#)

12.

Re: Thulium Fiber Laser: Ready to Dust All Urinary Stone Composition Types?.

Meria P

Ovid MEDLINE(R) ALL

European Urology. 78(6):926, 2020 12.

[Journal Article. Comment]

UI: 32900555

Version ID

1

Status

MEDLINE

Authors Full Name

Meria, Paul

Institution

Meria, Paul. Department of Urology, Hopital Saint Louis, Paris, France. Electronic address:

paul.meria@aphp.fr.

Comments

Comment on (CON)

Year of Publication

2020

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[SFX](#)

13.

Flexible ureteroscopy using a 120-w holmium laser: The low-energy/high-frequency approach.
Ureteroscopia flexible utilizando laser holmium 120 W: baja energia/alta frecuencia.

<Ureteroscopia flexible utilizando laser holmium 120 W: baja energia/alta frecuencia.>

Peretti D, Dalmaso E, Biancolini R, Pecoraro A, Ambruosi C, Venzano F, Fiori C, Porpiglia F, Maugeri O

Ovid MEDLINE(R) ALL

Archivos Espanoles de Urologia. 74(3):343-349, 2021 Apr.

[Journal Article]

UI: 33818431

OBJECTIVES: With the spread of more powerful lasers and the advent of new technologies, endoscopic interventions for urolithiasis are continuously evolving. The aim of this study is to present our experience and technique regarding Low Energy (LE)/High Frequency (HF) lithotripsy by using a 120-W Holmium laser (Lumenis R).

METHODS: We retrospectively analysed our prospectively maintained Retrograde Intra Renal Surgery (RIRS) database. Lithotripsy was performed using LE/HF settings with a Long Pulse Width (LPW) and consisted of the following steps: 1) contact Laser lithotripsy (LE/HF/LPW dusting - 0,5 J/50 Hz or 02 J/70 Hz); 2) extraction of main fragments; 3) non-contact Laser lithotripsy (LE/HF/Short Pulse Width Pop Dusting - 0,5 J /80Hz). Pre-operative and peri-operative outcomes were collected. Post-operative complications were recorded according to Clavien-Dindo Grading System. Finally, all patients underwent a CT scan at three months after RIRS to assess the success of procedure, defined as stone-free or presence of ≤ 4 mm fragments (Clinical Insignificant Residual Fragments - CIRF).

RESULTS: Overall, 104 LE/HF/LPW RIRS from December 2017 to January 2019 were performed. Mean operative time was 59 (SD +/-23) minutes, median post-operative stay was two days (IQR 2-3). The post-operative complication rate was 4,8%: one patient had nausea and vomiting (Clavien-Dindo I) and four patients developed urosepsis (Clavien-Dindo II). The success rate was 88,5% (71,2% stone-free and 17,3% CIRF). **CONCLUSIONS :** LE/HF/LPW RIRS seems

to be safe and effective in terms of positive success rate, safety and standard operative time. However, randomized clinical trials are needed to compare this technique to standard RIRS.

Version ID

1

Status

MEDLINE

Authors Full Name

Peretti, Dario, Dalmaso, Ettore, Biancolini, Roberto, Pecoraro, Angela, Ambruosi, Carlo, Venzano, Fabio, Fiori, Cristian, Porpiglia, Francesco, Maugeri, Orazio

Institution

Peretti, Dario. Department of Urology. AOU San Luigi Gonzaga Orbassano. University of Turin. Turin. Italy. Dalmaso, Ettore. ASO S. Croce e Carle Cuneo. Cuneo. Italy.

Biancolini, Roberto. ASO S. Croce e Carle Cuneo. Cuneo. Italy.

Pecoraro, Angela. Department of Urology. AOU San Luigi Gonzaga Orbassano. University of Turin. Turin. Italy.

Ambruosi, Carlo. ASO S. Croce e Carle Cuneo. Cuneo. Italy.

Venzano, Fabio. ASO S. Croce e Carle Cuneo. Cuneo. Italy.

Fiori, Cristian. Department of Urology. AOU San Luigi Gonzaga Orbassano. University of Turin. Turin. Italy.

Porpiglia, Francesco. Department of Urology. AOU San Luigi Gonzaga Orbassano. University of Turin. Turin. Italy.

Maugeri, Orazio. ASO S. Croce e Carle Cuneo. Cuneo. Italy.

Other Abstract

Publisher

OBJETIVOS: Con la aparición de láseres de alta potencia y las nuevas tecnologías, las intervenciones endoscópicas para las urolitiasis continúan evolucionando. El objetivo de este estudio es presentar nuestra experiencia y técnica de baja energía (BE), alta frecuencia (AF) de litotricia utilizando el láser holmium 120 W (Lumenis R). METODOS: Retrospectivamente analizamos nuestra base de datos prospectiva de ureteroscopia retrograda intrarenal. La litotricia fue realizada utilizando BE/AF con pulsos amplios y largos (LPW). La técnica consistió en los siguientes pasos: 1) Contacto litotricia láser (BE/AF/LPW pulso- 0.5J/50 Hz o 0.2 J/70 Hz); 2) extracción de los fragmentos principales; 3) litotricia láser sin contacto (BE/AF/pulso corto pulso- 0.5 J /80Hz). Los resultados preoperatorios y perioperatorios fueron recogidos. Las complicaciones postoperatorias fueron recogidas por el sistema Clavien-Dindo. Finalmente, todos los pacientes recibieron un TAC a los 3 meses después de la ureteroscopia retrograda para evaluar el éxito del procedimiento, que se definió como la no existencia de litiasis o de fragmentos de menos de 4 mm (fragmentos clínicamente insignificantes). RESULTADOS: 104

BE/AF/LPW ureteroscopias retrogradas se realizaron entre diciembre de 2017 y enero de 2019. El tiempo operatorio medio fue de 50 minutos(SD +/- 23), la estancia media postoperatoria fue de 2 días (IQR 2-3). La tasa de complicaciones postoperatorias fue de 4,8%: un paciente tuvo nauseas y vomitos (Clavien I) y 4 pacientes desarrollaron urosepsis (Clavien II). La tasa de éxito fue de 88%, 71,2% libre de litiasis y 17,3% fragmentos clínicamente insignificantes.

CONCLUSIONES: BE/AF/LPW ureteroscopia retrograda es un procedimiento seguro y efectivo en términos de tasa de éxito, seguridad y tiempo quirúrgico. Aunque, estudios randomizados son necesarios para comparar esta técnica con la ureteroscopia retrograda estándar.

Language: Spanish

Year of Publication

2021

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[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

14.

Defining Thermally Safe Laser Lithotripsy Power and Irrigation Parameters: In Vitro Model.

Aldoukhi AH, Black KM, Hall TL, Ghani KR, Maxwell AD, MacConaghy B, Roberts WW

Ovid MEDLINE(R) ALL

Journal of Endourology. 34(1):76-81, 2020 01.

[Journal Article. Research Support, Non-U.S. Gov't]

UI: 31608654

Introduction: High-power laser settings are commonly employed for stone dusting techniques. Previous in vitro and in vivo studies have demonstrated that a toxic thermal dose can result from treatment within a renal calix without adequate irrigation. Hence, both laser power and irrigation rate must be considered together to determine safe laser lithotripsy parameters. The objective of this in vitro study was to map parameter safety boundaries and create guidelines for selection of safe laser and irrigation settings. Methods: The experimental system consisted of in vitro models simulating ureter, renal calix, and renal pelvis placed in a water bath maintained at 37°C.

Temperature was recorded during ureteroscopy with laser activation for 60 seconds. Trials were conducted at strategically selected power levels and irrigation rates. Thermal dose for each trial was calculated based on Sapareto and Dewey t43 methodology with thermal dose >120 equivalent minutes considered to result in thermal tissue injury. A parameter safety boundary was established by plotting the maximal safe power level for each irrigation rate. Results: The parameter safety boundary was found to be linear for each scenario with the renal pelvis able to tolerate the highest laser power and the renal calix the least power without injury. Conclusion: This study describes the methodology to determine parameter safety boundaries that can be used to guide proper selection of thermally safe laser settings and irrigation rates during ureteroscopy with laser lithotripsy. This work provides a framework to assess the effectiveness of various strategies to control and mitigate thermal dose.

Version ID

1

Status

MEDLINE

Authors Full Name

Aldoukhi, Ali H, Black, Kristian M, Hall, Timothy L, Ghani, Khurshid R, Maxwell, Adam D, MacConaghy, Brian, Roberts, William W

Institution

Aldoukhi, Ali H. Division of Endourology, Department of Urology, University of Michigan, Ann Arbor, Michigan. Black, Kristian M. Division of Endourology, Department of Urology, University of Michigan, Ann Arbor, Michigan.

Hall, Timothy L. Department of Biomedical Engineering, University of Michigan, Ann Arbor, Michigan.

Ghani, Khurshid R. Division of Endourology, Department of Urology, University of Michigan, Ann Arbor, Michigan.

Maxwell, Adam D. Department of Urology, University of Washington School of Medicine, Seattle, Washington.

MacConaghy, Brian. Applied Physics Laboratory, University of Washington, Seattle, Washington.

Roberts, William W. Division of Endourology, Department of Urology, University of Michigan, Ann Arbor, Michigan.

Roberts, William W. Department of Biomedical Engineering, University of Michigan, Ann Arbor, Michigan.

Year of Publication

2020

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Link to the External Link Resolver:

[SFX](#)

15.

[Usefulness of laser Holmium Lumenis Pulse 120 H R in the treatment of renal lithiasis through RIRS: Preliminary experience.]. [Spanish] Utilidad del laser Holmium Lumenis Pulse 120 H R en el tratamiento de las litiasis renales mediante RIRS: experiencia preliminar. <Utilidad del laser Holmium Lumenis Pulse 120 H R en el tratamiento de las litiasis renales mediante RIRS: experiencia preliminar.>

Laso S, Serrano A, Resel LE, Lopez E, Alonso S, Jerez T, Ruiz MA, Moreno J

Ovid MEDLINE(R) ALL

Archivos Espanoles de Urologia. 73(9):803-812, 2020 Nov.

[Journal Article. Observational Study]

UI: 33144534

INTRODUCTION: The Holmium laser is the most used energy source in flexible ureterorenoscopy (URSf). The Lumenis Pulse 120H R laser has a higher system energy, a higher energy per pulse and a higher repetition frequency in relation to other types of lasers, which offers advantages in the treatment of lithiasis.

OBJECTIVE: To analyze the results that we have obtained with the use of the Lumenis Pulse120H R laser in patients treated by intrarenal retrograde surgery (RIRS). As secondary objectives there are: the study of the demographic variables of the patients, the characteristics of the stones and the complications associated with the procedure.

MATERIAL AND METHODS: An observational, retrospective study of the first 26 patients treated by RIRS and Lumenis Pulse 120H R laser has been performed in our Service between August 2018 and February 2019. The size of the lithiasis was measured on the simple radiography and the CT, in addition, the volume of the lithiasis was calculated. For the realization of RIRS, 8.5Fr digital flexible ureterorenoscope (Olympus R) and the Holmium Lumenis 120H R laser with 200 micron laser fibers from Lumenis R were used. Statistical analysis was performed with the SPSSv21 system.

RESULTS: A total of 26 patients with renal lithiasis have been analyzed. The median age was 55.15 years (40.67-67.05). 57.7% of the patients had prior surgical treatment of lithiasis. Thirteen patients presented the lithiasis in the renal pelvis, ten in the Upper Calicial Group (GCS), fifteen in the Middle Calicial Group (GCM) and eighteen in the Lower Calicial Group (GCI). The median of the lithiasic volume was 1826.41 mm³. Our overall success rate was 80.8% (100% success in lithiasis less than 2 cm and 85.7% in lithiasis between 2-3 cm). Five patients presented complications, of which 4 were ClavienII and 1 Clavien IIIb. No significant results were found between the lithiasic size and the presence of complications ($p = 0.128$).

CONCLUSIONS: The use of the Lumenis Pulse 120H Rlaser is an useful tool for the treatment of kidney stones by RIRS, due to his efficiency in the fragmentation and dusting, taking into account that very large lithiasic masses require, in a high percentage of cases, more than one treatment session.

Version ID

1

Status

MEDLINE

Authors Full Name

Laso, Silvia, Serrano, Alvaro, Resel, Luis Eduardo, Lopez, Eduardo, Alonso, Santiago, Jerez, Tamara, Ruiz, Miguel Angel, Moreno, Jesus

Institution

Laso, Silvia. Servicio de Urologia. Hospital Clinico San Carlos. Instituto de Investigacion Sanitaria (IdISSC). Universidad Complutense. Madrid. Espana. Serrano, Alvaro. Servicio de Urologia. Hospital Clinico San Carlos. Instituto de Investigacion Sanitaria (IdISSC). Universidad Complutense. Madrid. Espana.

Resel, Luis Eduardo. Servicio de Urologia. Hospital Clinico San Carlos. Instituto de Investigacion Sanitaria (IdISSC). Universidad Complutense. Madrid. Espana.

Lopez, Eduardo. Servicio de Urologia. Hospital Clinico San Carlos. Instituto de Investigacion Sanitaria (IdISSC). Universidad Complutense. Madrid. Espana.

Alonso, Santiago. Servicio de Urologia. Hospital Clinico San Carlos. Instituto de Investigacion Sanitaria (IdISSC). Universidad Complutense. Madrid. Espana.

Jerez, Tamara. Servicio de Urologia. Hospital Clinico San Carlos. Instituto de Investigacion Sanitaria (IdISSC). Universidad Complutense. Madrid. Espana.

Ruiz, Miguel Angel. Servicio de Urologia. Hospital Clinico San Carlos. Instituto de Investigacion Sanitaria (IdISSC). Universidad Complutense. Madrid. Espana.

Moreno, Jesus. Servicio de Urologia. Hospital Clinico San Carlos. Instituto de Investigacion Sanitaria (IdISSC). Universidad Complutense. Madrid. Espana.

Other Abstract

Publisher

INTRODUCCION: El laser de Holmium es la fuente de energia mas utilizada en la ureterorenoscopia flexible (URSf). El laser Lumenis Pulse 120H R tiene una mayor energia del sistema, una mayor energia por pulso y una frecuencia de repeticion mas elevada en relacion a otros tipos de laser, lo que ofrece ventajas en el tratamiento de las litiasis.**OBJETIVO:** Analizar los resultados que hemos obtenido con la utilizacion del laser Lumenis Pulse120H R en pacientes tratados mediante RIRS. Como objetivos secundarios se encuentra el estudio de las variables demograficas de los pacientes, de las características del calculo y de las complicaciones asociadas al procedimiento.**MATERIAL Y METODOS:** Se ha realizado un estudio observacional, retrospectivo, de los primeros 26 pacientes tratados mediante RIRS y laser Lumenis Pulse 120H R en nuestro Servicio entre agosto 2018 y febrero 2019. El tamaño de la litiasis fue medido en la radiografia simple y el TC (tomografia computarizada) y, aparte, se calculo el volumen de la litiasis. El analisis estadistico se realizo con el sistema SPSSv21.**RESULTADOS:** Se han analizado un total de 26 pacientes con litiasis renales. Un 57,7% de los pacientes tenian tratamiento quirurgico previo de litiasis. Presentaban litiasis en la pelvis renal 13 pacientes, en Grupo Calicial Superior (GCS) 10, en Grupo Calicial Medio (GCM) 15 y en Grupo Calicial Inferior (GCI) 18. La mediana del volumen litiasico fue de 1.826,41 mm³. Nuestra tasa global de exito fue del 80,8% (100% exito en litiasis menores de 2 cm y 85,7% en litiasis entre 2-3cm). Cinco pacientes presentaron complicaciones, de ellos 4 fueron Clavien II y 1 Clavien IIIb. No se hallaron resultados significativos al relacionar el tamaño litiasico con las complicaciones ($p=0,128$).**CONCLUSIONES:** La utilizacion del laser Lumenis Pulse120H R es una herramienta util y segura para el tratamiento de los calculos renales mediante RIRS, debido a la eficacia en la fragmentacion y pulverizacion de los mismos, teniendo en cuenta que las masas litiasicas muy grandes requieren, en un alto porcentaje de casos, mas de una sesion de tratamiento.

Language: Spanish

Year of Publication

2020

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Link to the External Link Resolver:

[SFX](#)

16.

SuperPulsed Thulium fiber laser: The ultimate laser for lithotripsy?. Laser tulio superpulsado: El nuevo estandar en litotricia por laser? <Laser tulio superpulsado: El nuevo estandar en litotricia por laser?>

Keller EX, Traxer O

Ovid MEDLINE(R) ALL

Archivos Espanoles de Urologia. 73(8):767-776, 2020 Oct.

[Journal Article]

UI: 33025921

The SuperPulsed Thulium fiber laser has recently become available to the urologist. It can be safely and efficiently applied to humans for the purposes of laser lithotripsy. Particularly, this innovative technology overcomes the main limitations of Holmium:YAG lasers, which had been the principal source of energy for lithotripsy over the past decades. The SuperPulsed Thulium fiber laser allows a broader range of pulse energy (0.025 to 6.0 J), pulse frequency (up to 2000 Hz) and pulse duration (0.05 to 12 ms), as well as smaller operating laser fibers (50-150 μ m core), compared to Holmium:YAG lasers. The laser emission at 1940 nm leads to a four-fold higher energy absorption in water, which ensures precise lithotripsy and a high degree of safety. Multiple comparative in vitro studies suggest a 1.5 to 4 times faster stone ablation rate in favor of the SuperPulsed Thulium fiber laser, when compared to Holmium:YAG lasers. It has also been shown to generate particularly fine stone dust, and electronic pulse modulation allows superior stone stabilization. The SuperPulsed Thulium fiber laser, like the Holmium:YAG laser, has been repeatedly reported thermodynamically safe, provided that a minimal irrigation flow (10-15 ml/min) and relatively low average power ($\leq$ 25 W) is maintaining throughout the lithotripsy process. These new standards are particularly advantageous for fine and rapid ureteroscopic stone dusting, and open paths that were not been amenable to the Holmium:YAG laser.

Version ID

1

Status

MEDLINE

Authors Full Name

Keller, Etienne Xavier, Traxer, Olivier

Institution

Keller, Etienne Xavier. Department of Urology. University Hospital Zurich. University of Zurich. Zurich. Switzerland. Traxer, Olivier. Sorbonne Universite. Service d'Urologie. AP-HP. Hopital

Tenon. Paris. France. Sorbonne Universite. Groupe de Recherche Clinique sur la Lithiase Urinaire. Hopital Tenon. Paris. France.

Other Abstract

Publisher

El tulio superpulsado ha salido al mercado recientemente. Se puede usar en humanos para la litotricia. En concreto, esta nueva tecnologia mejora las limitaciones del laser holmium, usado hasta ahora. Las fibras de laser tulio permite un pulso de energia (0.025 a 6 J), frecuencia de pulso (hasta 2000 Hz) y duracion de este pulso (0.05 a 12 ms) asi como diametros menores (50-150 nm) en comparacion con el holmium. La emision de laser a 1940 nm permite una mejora hasta 4 veces en la absorcion de agua, lo que permite una litotricia mas eficiente y segura. Multiples estudios comparativos in vitro sugieren que la litotricia es entre 1,5 y 4 veces mas rapida con el tulio superpulsado. Ademas produce un polvo secundario a litotricia mas fino y el pulso electronico modulado permite una mejor estabilizacion de la litiasis. Las fibras de tulio superpulsado, como las de holmium, son termicamente seguras teniendo en cuenta que la irrigacion minima continua (10-15 ml/min) y el bajo voltaje (menos de 25 W) se mantienen durante el tratamiento de litotricia. Estos nuevos estandares confieren particular ventaja en la litotricia ureteroscopica y permitiran una mejor aceptacion que el laser holmium.

Language: Spanish

Year of Publication

2020

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

[SFX](#)

17.

[Flexible cystoscope for the treatment of urinary stones in intestinal reservoirs.]. [Spanish]

Cistoscopia flexible para el tratamiento de las litiasis urinarias en reservorios intestinales.

<Cistoscopia flexible para el tratamiento de las litiasis urinarias en reservorios intestinales.>

Campodonico F, Calcagno T, Bacigalupo L, La Camera A, Durante A, Introini C

Ovid MEDLINE(R) ALL

Archivos Espanoles de Urologia. 72(9):965-967, 2019 Nov.

[Journal Article]

UI: 31697258

OBJECTIVE: Stones are common mid- and long-term complications in urinary diversions built with bowel. However the reservoir intestinal loops can lead to difficult endoscopic approach.

METHODS: We report two challenging cases with unfavourable anatomy successfully treated by gently handling a flexible cystoscope in a low pressure system.

RESULTS: One patient with stones in a continent pouch was cleaned up with a grasping basket through the efferent umbilical limb. Another patient with an orthotopic ileal neobladder not accessible by rigid cystoscope due to high pelvic floor was treated with holmium laser lithotripsy.

CONCLUSIONS: Urologists should consider the versatility of flexible cystoscope to obviate the need for percutaneous lithotripsy or open lithotomy.

Version ID

1

Status

MEDLINE

Authors Full Name

Campodonico, Fabio, Calcagno, Tiziana, Bacigalupo, Lorenzo, La Camera, Anna, Durante, Antonio, Introini, Carlo

Institution

Campodonico, Fabio. Department of Abdominal Surgery. Urology Unit. EO Ospedali Galliera.

Genova. Italy. Calcagno, Tiziana. Department of Abdominal Surgery. Urology Unit. EO Ospedali Galliera. Genova. Italy.

Bacigalupo, Lorenzo. Radiology Department. EO Ospedali Galliera. Genova. Italy.

La Camera, Anna. Department of Abdominal Surgery. Urology Unit. EO Ospedali Galliera. Genova. Italy.

Durante, Antonio. Department of Abdominal Surgery. Urology Unit. EO Ospedali Galliera. Genova. Italy.

Introini, Carlo. Department of Abdominal Surgery. Urology Unit. EO Ospedali Galliera. Genova. Italy.

Other Abstract

Publisher

OBJETIVO: La aparicion de litiasis es una complicacion comun a medio y largo plazo en las derivaciones urinarias construidas con intestino. Sin embargo, las asas intestinales de los

reservorios pueden tener un acceso endoscopico dificil. METODOS: Presentamos dos casos dificiles con anatomia desfavorable tratados con exito utilizando cuidadosamente un cistoscopio

flexible en un sistema de baja presion.RESULTADOS: Un paciente con litiasis en una neovejiga continente quedo libre de litiasis utilizando una cestilla a traves del asa eferente umbilical. Otro paciente con una neovejiga ileal ortotopica no accesible por cistoscopio rigido debido a un suelo pelvico elevado, fue tratado con litotricia con laser de Holmio.CONCLUSIONES: Los urologos deben considerar la versatilidad de la cistoscopia flexible para obviar la necesidad de litotricia percutanea o litotomia abierta.

Language: Spanish

Year of Publication

2019

Link to the Ovid Full Text or citation:

[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

18.

Editorial Comment on: The Impact of Dust and Confinement on Fragmentation of Kidney Stones by Shockwave Lithotripsy in Tissue Phantoms by Randad et al. (From: Randad A, Ahn J, Bailey MR, et al. J Endourol 2019;33:400-406; DOI: 10.1089/end.2018.0516).

Zhong P

Ovid MEDLINE(R) ALL

Journal of Endourology. 33(5):407, 2019 05.

[Journal Article. Comment]

UI: 30808186

Version ID

1

Status

MEDLINE

Authors Full Name

Zhong, Pei

Institution

Zhong, Pei. Department of Mechanical Engineering and Materials Science, Duke University, Durham, North Carolina.

Comments

Comment on (CON)

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6918513>

Year of Publication

2019

Link to the Ovid Full Text or citation:

[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

19.

Avoiding a Lemon: Performance Consistency of Single-Use Ureteroscopes.

Winship B, Wollin D, Carlos E, Li J, Preminger GM, Lipkin ME

Ovid MEDLINE(R) ALL

Journal of Endourology. 33(2):127-131, 2019 02.

[Journal Article. Research Support, Non-U.S. Gov't]

UI: 30612445

INTRODUCTION AND OBJECTIVES: Single-use flexible ureteroscopes are increasingly popular because of high repair costs of reusable ureteroscopes. As new single-use ureteroscopes enter the market, the consistency of performance of these devices has been questioned. Our objective was to compare two single-use ureteroscopes: the Pusen PU3022a (Zhuhai Pusen) and the LithoVue (Boston Scientific) with emphasis on physical and optical performance consistency.

METHODS: Ten LithoVue and 10 Pusen ureteroscopes were evaluated in never-used condition. The following parameters were recorded: maximal tip deflection with an empty working channel, 200 µm laser fiber, and 1.9F basket; image resolution at 10, 20, and 50 mm; and irrigation flow rate; all ureteroscopes were then fully deflected for 200 cycles. Maximum deflection was

remeasured. Mean values for each parameter were compared. To examine within-manufacturer consistency, the variance was calculated and an F-test performed to evaluate for equivalence.

RESULTS: Both ureteroscopes provided max deflection over 270degree. The Pusen flexed to a greater degree than LithoVue. The Pusen lost more deflection with a laser fiber in the working channel. LithoVue had higher resolution at 10 mm, but the ureteroscopes were similar at 20 and 50 mm. Although the working channel diameter is identical, irrigation flow was higher with the Pusen. However, its working channel was 7 cm shorter than LithoVue. After 200 cycles of deflections, LithoVue had less deflection loss, although one ureteroscope was excluded from analysis because of mechanical failure. Variability was minimal and not significant between manufacturers at all measured parameters.

CONCLUSIONS: LithoVue and the newer PU3022a have similar "out-of-the-box" performance characteristics and seem durable. These two single-use flexible ureteroscopes performed consistently regardless of the manufacturer.

Version ID

1

Status

MEDLINE

Authors Full Name

Winship, Brenton, Wollin, Daniel, Carlos, Evan, Li, Jingqiu, Preminger, Glenn M, Lipkin, Michael E

Institution

Winship, Brenton. 1 Division of Urologic Surgery, Duke University Medical Center, Durham, North Carolina. Wollin, Daniel. 2 VA Boston Healthcare System, Boston, Massachusetts.

Carlos, Evan. 1 Division of Urologic Surgery, Duke University Medical Center, Durham, North Carolina.

Li, Jingqiu. 1 Division of Urologic Surgery, Duke University Medical Center, Durham, North Carolina.

Preminger, Glenn M. 1 Division of Urologic Surgery, Duke University Medical Center, Durham, North Carolina.

Lipkin, Michael E. 1 Division of Urologic Surgery, Duke University Medical Center, Durham, North Carolina.

Year of Publication

2019

Link to the Ovid Full Text or citation:

[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

20.

How to perform the dusting technique for calcium oxalate stone phantoms during Ho:YAG laser lithotripsy.

Lee JW, Park MG, Cho SY

Ovid MEDLINE(R) ALL

BMC Urology. 18(1):103, 2018 Nov 13.

[Journal Article]

UI: 30424765

BACKGROUND: To determine the most efficacious setting of Holmium:yttrium-aluminum-garnet (Ho:YAG) laser with a maximum power output of 120 W with in vitro phantom-stone dusting technique.

METHODS: A laser was used to treat two 4 x 3 x 3 mm³ sized phantom stones in 5 mL syringes with 1 mm-sized holes at the bottom. According to the pulse width (short 500, middle 750, long pulse 1000 musec), maximal pulse repetition rates from 50 to 80 Hz were tested with pulse energy of 0.2, 0.4, 0.5, and 0.8 J. Six times of the mean dusting times were measured at each setting. Dusting was performed at continuous firing of the laser until the stones become dusts < 1 mm.

RESULTS: The mean Hounsfield unit of phantom stones was 1309.0 +/- 60.8. The laser with long pulse generally showed shorter dusting times than short or middle pulse width. With increasing the pulse energy to 0.5 J, the dusting time decreased. However, the pulse energy of 0.8 J showed longer dusting times than those of 0.5 J. On the post-hoc analysis, the pulse energy of 0.5 J, long pulse width, and the repetition rates of 70 Hz demonstrated significantly shorter dusting times than other settings.

CONCLUSIONS: The results suggest that long pulse width with 0.5 J and 70 Hz would be the most efficacious setting for dusting techniques of plaster stone phantoms simulating calcium oxalate stones using the 120 W Ho:YAG laser.

Version ID

1

Status

MEDLINE

Authors Full Name

Lee, Jeong Woo, Park, Min Gu, Cho, Sung Yong

Institution

Lee, Jeong Woo. Department of Urology, Dongguk University Ilsan Hospital, Dongguk University College of Medicine, 27, Dongguk-ro, Ilsandong-gu, Goyang-si, Gyeonggi-do, 410-773, Republic of Korea. Park, Min Gu. Department of Urology, Seoul Paik Hospital, Inje University College of Medicine, 9, Mareunnae-ro, Jung-gu, Seoul, 100-032, Republic of Korea. Cho, Sung Yong. Department of Urology, Seoul Metropolitan Government-Seoul National University Boramae Medical Center, Seoul National University College of Medicine, 20, Boramae-ro 5-Gil, Dongjak-gu, Seoul, 156-707, Republic of Korea. kmoretry@daum.net.

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6234550>

Year of Publication

2018

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21.

The new Avicenna Roboflex: How does the irrigation system work? Results from an in vitro experiment.

Buttice S, Sahin B, Sener TE, Dragos L, Proietti S, Doizi S, Traxer O

Ovid MEDLINE(R) ALL

Archivio Italiano di Urologia, Andrologia. 90(3):155-158, 2018 Sep 30.

[Comparative Study. Journal Article]

UI: 30362676

INTRODUCTION: Since 2012 Elmed has been working on a robot specifically designed for flexible ureteroscopy. After the first version of Avicenna Roboflex, a second version was

developed in 2015, with significant changes especially in the irrigation system. We consider mandatory for the endourologist that works with the Avicenna Roboflex be aware of the functioning of the irrigation system.

MATERIALS AND METHODS: We connected a container to the pump's irrigation system and measured the quantity of saline per second delivered by each speed setting, with/without the flush in five different modalities: pump on its own, pump with ureteroscope, with two laser fibers, with 1.9 Fr basket, and with a Terumo guidewire.

RESULTS: The highest mean flow-rates were observed in the 200- micrometer laser fiber, after the pump on its own. Median flowrates for all speed settings were significantly higher for the pump on its own than for the URS in both flushed and nonflushed modes ($p = 0.045$, $p = 0.039$ respectively). There was no statistically significant difference in median flow-rates between the guide wire and basket in all of the speed settings ($p = 0.932$ and $p = 0.977$). For both laser fibers there was no statistically significant difference between the median flow rate on both nonflush and flush modes. ($p = 0.590$ & $p = 0.590$). There was a linear correlation between the speed setting and the increase measured with the flush-option for pump only measurements ($r = 0.602$, $p = 0.038$). There was no statistically significant difference between laser fibers and the pump on its own on the increase of flow rate with flush mode. ($p = 0.443$ for the 272- micrometer fiber and $p = 0.219$ for the 200-micrometer fiber).

CONCLUSION: The irrigation system of the new Avicenna Roboflex is optimized compared to the previous version. However other more complex studies concerning the live flow/pressure relationship are needed before firm conclusions can be made.

Version ID

1

Status

MEDLINE

Authors Full Name

Buttice, Salvatore, Sahin, Bahadir, Sener, Tarik Emre, Dragos, Laurian, Proietti, Silvia, Doizi, Steeve, Traxer, Olivier

Institution

Buttice, Salvatore. Pierre & Marie Curie University, Tenon University Hospital, Paris, France; Department of Urology, San Giovanni di Dio Hospital, Agrigento, Italy; PETRA UroGroup, Progress in Endourology, Technology and Research Association. salvobu@gmail.com.

Year of Publication

2018

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22.

Dusting Efficiency of the Moses Holmium Laser: An Automated In Vitro Assessment.

Winship B, Wollin D, Carlos E, Li J, Peters C, Simmons WN, Preminger GM, Lipkin M

Ovid MEDLINE(R) ALL

Journal of Endourology. 32(12):1131-1135, 2018 12.

[Journal Article]

UI: 30328717

INTRODUCTION: Moses technology is a novel Holmium:YAG laser system designed to minimize stone retropulsion and improve stone ablation when the laser is not in direct contact with the stone. Our aim was to assess the efficiency of Moses technology relative to short- and long-pulse lithotripsy using an automated in vitro "dusting model" of stone comminution.

METHODS: All tests were conducted using a Lumenis Pulse 120H Holmium:YAG laser with a 365 µm Moses D/F/L fiber. "Hard" (15:3) and "soft" (15:6) Begostones mimicking calcium oxalate monohydrate and uric acid stones, respectively, were used. To assess ablation efficiency and fiber tip degradation, a dusting model was employed: the laser was moved by a three-dimensional positioning system in a spiral motion across a flat Begostone surface submerged in water. Ablation efficiency was measured as stone mass loss after 4 kJ of energy delivery. Fiber tip degradation was measured at 1 kJ intervals. Comparative trials with short pulse, long pulse, Moses contact, and Moses distance settings were completed with the laser tip positioned at 0, 1, and 2 mm distances from the stone at energy settings of 0.4 J delivered at 70 Hz.

RESULTS: In our dusting model, stone ablation was significantly greater the closer the laser was to the stone. On hard stones, pulse type did not have a significant impact on ablation at any distance. On soft stones at 0 mm, Moses contact produced the greatest ablation, significantly greater than long pulse ($p < 0.05$). At 1 mm, Moses distance produced significantly greater ablation than all other settings ($p = 0.025$) and was as effective as long or short pulse at 0 mm. At 2 mm distance, no pulse type demonstrated significantly different ablation. Fiber tip degradation was minimal and not significant between settings.

CONCLUSIONS: Moses technology delivers greater ablation of soft stones when in contact and 1mm from the stone surface.

Version ID

1

Status

MEDLINE

Authors Full Name

Winship, Brenton, Wollin, Daniel, Carlos, Evan, Li, Jingqiu, Peters, Chloe, Simmons, W Neal, Preminger, Glenn M, Lipkin, Michael

Institution

Winship, Brenton. 1 Division of Urologic Surgery, Duke University Medical Center, Durham, North Carolina. Wollin, Daniel. 1 Division of Urologic Surgery, Duke University Medical Center, Durham, North Carolina.

Carlos, Evan. 1 Division of Urologic Surgery, Duke University Medical Center, Durham, North Carolina.

Li, Jingqiu. 2 Duke-NUS Medical School, Singapore .

Peters, Chloe. 3 Duke University, School of Medicine, Durham, North Carolina.

Simmons, W Neal. 4 Department of Mechanical Engineering, Duke University, Durham, North Carolina.

Preminger, Glenn M. 1 Division of Urologic Surgery, Duke University Medical Center, Durham, North Carolina.

Lipkin, Michael. 1 Division of Urologic Surgery, Duke University Medical Center, Durham, North Carolina.

Year of Publication

2018

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Understanding the Popcorn Effect During Holmium Laser Lithotripsy for Dusting.

Aldoukhi AH, Roberts WW, Hall TL, Teichman JMH, Ghani KR

Ovid MEDLINE(R) ALL

Urology. 122:52-57, 2018 Dec.

[Journal Article]

UI: 30195011

OBJECTIVE: To assess low and high power settings for the popcorn technique, and relationship of laser fiber-to-stone distance and calyceal size on submillimeter fragmentation. Our in vitro findings may help guide strategies to improve a dusting technique for ureteroscopy.

METHODS: BegoStones were fragmented in small (127 mm³) and large (411 mm³) sized bulbs to simulate calyces, using a 120 W Ho:YAG laser. A 242 µm fiber was introduced through a ureteroscope mounted to a 3D positioner with its tip located at 0 or 2 mm distance from the stones. 20 W [1 Jx20 Hz, 0.5 Jx40 Hz] and 40 W [1 Jx40 Hz, 0.5 Jx80 Hz] settings were assessed, including short pulse and long pulse modes. Total energy delivered was constant at 7.2 kJ. Primary outcome was percentage of stone mass converted to fragments <1 mm. High-speed imaging was performed to study stone movement and/or fragmentation.

RESULTS: For all settings, popcorn lithotripsy yielded more submillimeter fragments when performed with the fiber positioned on the stone compared to 2 mm from the stone (P <.05). Distribution of submillimeter fragments was higher when utilizing high frequencies regardless of pulse energy. At 2 mm distance, popcorning was more effective in the small model (P <.05). At 2 mm distance, short pulse was superior to long pulse. Video analysis showed fragmentation did not occur when stones collided with each other. At 80 Hz/2 mm distance, only 17.5% of pulses impacted fragments.

CONCLUSION: Popcorn technique is more effective when the fiber is directly in contact with stone, and when performed in a small calyceal model. Utilizing settings with higher frequencies may improve dusting outcomes.

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Version ID

1

Status

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Authors Full Name

Aldoukhi, Ali H, Roberts, William W, Hall, Timothy L, Teichman, Joel M H, Ghani, Khurshid R

Institution

Aldoukhi, Ali H. Division of Endourology, Department of Urology, University of Michigan, Ann Arbor, MI. Electronic address: ahaldouk@med.umich.edu. Roberts, William W. Division of

Endourology, Department of Urology, University of Michigan, Ann Arbor, MI; Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI.

Hall, Timothy L. Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI.

Teichman, Joel M H. Department of Urologic Sciences, University of British Columbia, Vancouver, British Columbia, Canada.

Ghani, Khurshid R. Division of Endourology, Department of Urology, University of Michigan, Ann Arbor, MI.

Comments

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24.

[Quality of nephrolithiasis surgical treatment - what is it influenced by?]. [Czech] Kvalita operacnej liečby nefrolitiázy: čo na nu vplyva? <Kvalita operacnej liečby nefrolitiázy: čo na nu vplyva?>

Kovacik V, Maciak M, Bujdak P, Balaz V, Skolka R, Rusnak M

Ovid MEDLINE(R) ALL

Rozhlady V Chirurgii. 97(2):82-87, Winter 2018.

[Journal Article]

UI: 29444579

INTRODUCTION: Identifying factors effecting the quality of nephrolithiasis surgical treatment could improve medical care for patients suffering from kidney stone disease. The objective of the article is to identify factors influencing reintervention rate after surgical treatment of kidney stone disease either by percutaneous nephrolitholapaxy or flexible ureterorenoscopy.

METHOD: A retrospective study was conducted on 149 patients who underwent a surgery for a kidney stone disease at the Urological department of F.D. Roosevelt hospital Banska Bystrica

from January 2015 till June 2015. The cohort included 60 women at average age of 57 (range 28-91) and 89 men at average age of 58 (range 30-92). Patients were treated by percutaneous litholapaxy (67 cases) and flexible ureterorenoscopy (82 cases, including 72 using dusting technique). Factors with potential influence on probability of repeated intervention during following 12 months have been studied and statistically analyzed. For the statistical analysis we used the generalized linear regression framework (GLM Generalized Linear Model) with the stepwise forward modeling approach.

RESULTS: Using the significance level of 5% the statistically significant factors affecting the probability of the re-intervention for ipsilateral kidney stone disease are the stone size (p-value 0.0035) and the postoperative stone free status (p-value 0.0418). Other studied factors as demographical data (age, gender), surgical method (percutaneous nephrolitholapaxy or flexible ureterorenoscopy), stone count, postoperative draining system (nephrostomy or JJ stent) did not have any statistically significant impact.

CONCLUSION: Patients could benefit from early diagnosis which could lead to earlier identification of smaller stones. Perfect operative technique with intraoperative achievement of stone free status is important to lower the need of repeated intervention. Key words: kidney stone disease - reintervention residual fragments.

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1

Status

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Authors Full Name

Kovacik, V, Maciak, M, Bujdak, P, Balaz, V, Skolka, R, Rusnak, M

Year of Publication

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Worldwide Use of Antiretropulsive Techniques: Observations from the Clinical Research Office of the Endourological Society Ureteroscopy Global Study.

Saussine C, Andonian S, Pacik D, Popiolek M, Celia A, Buchholz N, Sountoulides P, Petrut B, de la Rosette JJMCH

Ovid MEDLINE(R) ALL

Journal of Endourology. 32(4):297-303, 2018 04.

[Journal Article. Research Support, Non-U.S. Gov't]

UI: 29256629

INTRODUCTION: Retropulsion, defined as unintended migration of a stone under the influence of the fragmentation device in ureteroscopy (URS) procedures, occurs in 2% to 60% of the cases. Antiretropulsive devices (ARDs) have been studied in experimental and small clinical studies. The current study aims at describing the worldwide usage of ARD and the outcomes related to their usage.

METHODS: The Clinical Research Office of the Endourological Society URS Global Study enrolled 11,885 patients who underwent URS and stone fragmentation for ureteral and/or renal stones. Of the 11,885 treated patients, 9877 were treated for ureteral stones, and data were available on stone migration and ARD use.

RESULTS: Of all procedures, 14.5% were performed with the use of an ARD. Less stone migration (-2.0%; $p = 0.050$), higher stone-free rates (SFRs) (2.8%; $p < 0.001$), and shorter length of stay (-4.7%; $p = 0.001$) were observed in the antiretropulsive group.

CONCLUSIONS: When an ARD is used during URS, less migration, higher SFRs, and shorter length of hospital stay are observed. This effect is independent from baseline differences and corrected for other treatment characteristics.

Version ID

1

Status

MEDLINE

Authors Full Name

Saussine, Christian, Andonian, Sero, Pacik, Dalibor, Popiolek, Marcin, Celia, Antonio, Buchholz, Noor, Sountoulides, Petros, Petrut, Bogdan, de la Rosette, Jean J M C H

Institution

Saussine, Christian. 1 Department of Urology, Nouvel Hopital Civil les Hopitaux Universitaires, Strasbourg, France . Andonian, Sero. 2 Department of Urology, McGill University Health Centre, Quebec, Canada .

Pacik, Dalibor. 3 Department of Urology, Masaryk University Hospital, Brno, Czech Republic .

Popiolek, Marcin. 4 Department of Urology, Orebro University Hospital, Orebro, Sweden .

Celia, Antonio. 5 Department of Urology, San Bassiano Hospital, Bassano del Grappa, Italy .
Buchholz, Noor. 6 Department of Urology, SVMC, Dubai Health Care City, Dubai, UAE.
Sountoulides, Petros. 7 Department of Urology, General Hospital Of Veria, Veria, Greece .
Petrut, Bogdan. 8 Department of Urology, Oncological Institute, Cluj-Napoca, Romania .
de la Rosette, Jean J M C H. 9 University of Amsterdam, AMC University Hospital, Amsterdam,
The Netherlands .

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Year of Publication

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26.

In Vitro Evaluation of Single-Use Digital Flexible Ureteroscopes: A Practical Comparison for a Patient-Centered Approach.

Marchini GS, Batagello CA, Monga M, Torricelli FCM, Vicentini FC, Danilovic A, Srougi M, Nahas WC, Mazzucchi E

Ovid MEDLINE(R) ALL

Journal of Endourology. 32(3):184-191, 2018 03.

[Comparative Study. Journal Article]

UI: 29239229

OBJECTIVE: To compare the manufacturing and in vitro performance characteristics of two single-use flexible ureteroscopes with a permanent optical flexible ureteroscope.

MATERIALS AND METHODS: Two single-use flexible ureteroscopes, LithoVue (Boston Scientific) and Pusen (1rs. generation; Zhuhai Pusen Medical Technology Company Limited, China), were tested and compared with a permanent Flex-X2 ureteroscope (Karl Storz, Germany)

in terms of technical characteristics, optics, deflection mechanism, and additional parameters which could potentially affect surgical technique.

RESULTS: Pusen was the lightest ureteroscope while the LithoVue had the longest working length. LithoVue had a higher resolution power than the other two ureteroscopes at all distances tested ($p < 0.001$). Pusen showed higher resolution than Flex-X2 ($p < 0.01$). Field of view was wider for LithoVue (87degree), followed by Flex-X2 (85degree) and Pusen (75degree). Color representation was superior for Flex-X2 than LithoVue and then Pusen. LithoVue outperformed Pusen and Flex-X2 for all settings with instruments in terms of deflection loss ($p < 0.01$). Pusen had the highest irrigation flow (52 mL/min) with an empty working channel ($p < 0.01$). LithoVue and Pusen showed similar flow rates with a 200 mum (21 mL/min) and 365 mum laser fiber (7 mL/min) and 1.3F basket (18 mL/min), being superior to Flex-X2 ($p < 0.01$). With the 1.9F basket, LithoVue had superior flow rate (7 mL/min) than Pusen (3.5 mL/min) and Flex-X2 (4 mL/min; $p = 0.01$).

CONCLUSION: LithoVue outperformed the other ureteroscopes in terms of optical resolution, field of view, deflection capacity, and irrigation flow with larger instruments. Pusen is the lighter scope and showed better results in terms of irrigation when no instruments are in place. Flex-X2 was superior in terms of color representation.

Version ID

1

Status

MEDLINE

Authors Full Name

Marchini, Giovanni Scala, Batagello, Carlos A, Monga, Manoj, Torricelli, Fabio Cesar Miranda, Vicentini, Fabio C, Danilovic, Alexandre, Srougi, Miguel, Nahas, Willian C, Mazzucchi, Eduardo
Institution

Marchini, Giovanni Scala. 1 Section of Endourology, Division of Urology, Hospital das Clinicas, University of Sao Paulo Medical School, Sao Paulo, Brazil . Marchini, Giovanni Scala. 2 Glickman Urological and Kidney Institute, Cleveland Clinic, Cleveland, Ohio.

Batagello, Carlos A. 1 Section of Endourology, Division of Urology, Hospital das Clinicas, University of Sao Paulo Medical School, Sao Paulo, Brazil .

Batagello, Carlos A. 2 Glickman Urological and Kidney Institute, Cleveland Clinic, Cleveland, Ohio.

Monga, Manoj. 2 Glickman Urological and Kidney Institute, Cleveland Clinic, Cleveland, Ohio.

Torricelli, Fabio Cesar Miranda. 1 Section of Endourology, Division of Urology, Hospital das Clinicas, University of Sao Paulo Medical School, Sao Paulo, Brazil .

Torricelli, Fabio Cesar Miranda. 2 Glickman Urological and Kidney Institute, Cleveland Clinic, Cleveland, Ohio.

Vicentini, Fabio C. 1 Section of Endourology, Division of Urology, Hospital das Clinicas, University of Sao Paulo Medical School, Sao Paulo, Brazil .

Danilovic, Alexandre. 1 Section of Endourology, Division of Urology, Hospital das Clinicas, University of Sao Paulo Medical School, Sao Paulo, Brazil .

Srougi, Miguel. 1 Section of Endourology, Division of Urology, Hospital das Clinicas, University of Sao Paulo Medical School, Sao Paulo, Brazil .

Nahas, Willian C. 1 Section of Endourology, Division of Urology, Hospital das Clinicas, University of Sao Paulo Medical School, Sao Paulo, Brazil .

Mazzucchi, Eduardo. 1 Section of Endourology, Division of Urology, Hospital das Clinicas, University of Sao Paulo Medical School, Sao Paulo, Brazil .

Comments

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27.

Preclinical Testing of a Combination Stone Basket and Ureteral Balloon to Extract Ureteral Stones.

Massoudi R, Metzner TJ, Bonneau B, Ngo TC, Shinghal R, Leppert JT

Ovid MEDLINE(R) ALL

Journal of Endourology. 32(2):96-99, 2018 02.

[Journal Article]

UI: 29216731

We have developed the Peralta Stone Extraction System to increase the safety of ureteral stone extraction. The device combines a nitinol stone basket and low-pressure balloon into a single device. After visualization, the stone is captured in the tipless nitinol basket and enveloped by a

low-pressure balloon. We tested the performance of device prototypes in a porcine model using stone mimics with diameters ranging from 4.2 to 6.2 mm. Stones extracted with the device required less force when compared with stones in a standard ureteral stone basket. The force reduction was most pronounced for stones greater than 4.2 mm in diameter, and when traversing a ureteral stenosis model. In conclusion, a combination stone basket and balloon device may provide a new and safer way to extract ureteral stones.

Version ID

1

Status

MEDLINE

Authors Full Name

Massoudi, Rustin, Metzner, Thomas J, Bonneau, Buzz, Ngo, Tin C, Shinghal, Rajesh, Leppert, John T

Institution

Massoudi, Rustin. 1 Department of Urology, Stanford University School of Medicine, Stanford, California. Metzner, Thomas J. 1 Department of Urology, Stanford University School of Medicine, Stanford, California.

Bonneau, Buzz. 2 Calcula Technologies, San Francisco, California.

Ngo, Tin C. 1 Department of Urology, Stanford University School of Medicine, Stanford, California.

Ngo, Tin C. 3 Division of Urology, Santa Clara Valley Medical Center, San Jose, California.

Shinghal, Rajesh. 4 Division of Urology, Palo Alto Medical Foundation, Palo Alto, California.

Leppert, John T. 1 Department of Urology, Stanford University School of Medicine, Stanford, California.

Leppert, John T. 5 Department of Medicine, Stanford University School of Medicine, Stanford, California.

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6016728>

Year of Publication

2018

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28.

Which is the best way to treat a stone on a flexible ureterorenoscopy? | Opinion: Dusting.

Lopes AC Neto

Ovid MEDLINE(R) ALL

International Braz J Urol. 43(5):802-804, 2017 Sep-Oct.

[Journal Article]

UI: 29035474

Version ID

1

Status

MEDLINE

Authors Full Name

Lopes, Antonio Correa Neto

Institution

Lopes, Antonio Correa Neto. Grupo de Litiase e Endourologia da Disciplina de Urologia da Faculdade de Medicina ABC, Santo Andre, SP, Brasil.

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5678510>

Year of Publication

2017

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29.

Performance of Single-Use FlexorVue vs Reusable Boavision Ureteroscope for Visualization of Calices and Stone Extraction in an Artificial Kidney Model.

Schlager D, Hein S, Obaid MA, Wilhelm K, Miernik A, Schoenthaler M

Ovid MEDLINE(R) ALL

Journal of Endourology. 31(11):1139-1144, 2017 11.

[Evaluation Study. Journal Article]

UI: 28844156

PURPOSE: To evaluate and compare Flexor RVue TM, a semidisposable endoscopic deflection system with disposable ureteral sheath and reusable visualization source, and a nondisposable fiber optic ureteroscope in a standard in vitro setting.

MATERIALS AND METHODS: FlexorVue and a reusable fiber optic flexible ureteroscope were each tested in an artificial kidney model. The experimental setup included the visualization of colored pearls and the extraction of calculi with two different extraction devices (NCircle R and NGage R). The procedures were performed by six experienced surgeons. Visualization time, access to calices, successful stone retraction, and time required were recorded. In addition, the surgeons' workload and subjective performance were determined according to the National Aeronautics and Space Administration-task load index (NASA-TLX). We referred to the Likert scale to assess maneuverability, handling, and image quality.

RESULTS: Nearly all calices (99%) were correctly identified using the reusable scope, indicating full kidney access, whereas 74% of the calices were visualized using FlexorVue, of which 81% were correctly identified. Access to the lower poles of the kidney model was significantly less likely with the disposable device, and time to completion was significantly longer (755 s vs 153 s, $p < 0.001$). The stone clearance success rate with the disposable device was 23% using the NGage and 13% using the NCircle basket. Overall NASA-TLX scores were significantly higher using FlexorVue. The conventional reusable device also demonstrated superior maneuverability, handling, and image quality.

CONCLUSIONS: FlexorVue offers a semidisposable deflecting endoscopic system allowing basic ureteroscopic and cystoscopic procedures. For its use as an addition or replacement for current reusable scopes, it requires substantial technical improvements.

Version ID

1

Status

MEDLINE

Authors Full Name

Schlager, Daniel, Hein, Simon, Obaid, Moaaz Abdulghani, Wilhelm, Konrad, Miernik, Arkadiusz, Schoenthaler, Martin

Institution

Schlager, Daniel. Department of Urology, Faculty of Medicine, Medical Center, University of Freiburg, Germany, Freiburg, Germany . Hein, Simon. Department of Urology, Faculty of Medicine, Medical Center, University of Freiburg, Germany, Freiburg, Germany .

Obaid, Moaaz Abdulghani. Department of Urology, Faculty of Medicine, Medical Center, University of Freiburg, Germany, Freiburg, Germany .

Wilhelm, Konrad. Department of Urology, Faculty of Medicine, Medical Center, University of Freiburg, Germany, Freiburg, Germany .

Miernik, Arkadiusz. Department of Urology, Faculty of Medicine, Medical Center, University of Freiburg, Germany, Freiburg, Germany .

Schoenthaler, Martin. Department of Urology, Faculty of Medicine, Medical Center, University of Freiburg, Germany, Freiburg, Germany .

Year of Publication

2017

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30.

Impact of the Curve Diameter and Laser Settings on Laser Fiber Fracture.

Haddad M, Emiliani E, Rouchausse Y, Coste F, Doizi S, Berthe L, Buttice S, Somani B, Traxer O

Ovid MEDLINE(R) ALL

Journal of Endourology. 31(9):918-921, 2017 09.

[Journal Article]

UI: 28683574

OBJECTIVE: To analyze the risk factors for laser fiber fractures when deflected to form a curve, including laser settings, size of the laser fiber, and the fiber bending diameter.

MATERIALS AND METHODS: Single-use 272 and 365 mum fibers (Rocamed R, Monaco) were employed along with a holmium laser (Rocamed). Five different fiber curve diameters were

tested: 9, 12, 15, 18, and 20 mm. Fragmentation and dusting settings were used at a theoretical power of 7.5 W. The laser was activated for 5 minutes and the principal judgment criterion was fiber fracture. Every test for each parameter, bending diameter, and fiber size combinations was repeated 10 times.

RESULTS: With dusting settings, fibers broke more frequently at a curved diameter of 9 mm for both 272 and 365 μm fibers ($p = 0.037$ and 0.006 , respectively). Using fragmentation settings, fibers broke more frequently at 12 mm for 272 μm and 15 mm for 365 μm ($p = 0.007$ and 0.033 , respectively). Short pulse and high energy were significant risk factors for fiber fracture using the 365 μm fibers ($p = 0.02$), but not for the 272 μm fibers ($p = 0.35$). Frequency was not a risk factor for fiber rupture. Fiber diameters also seemed to be involved in the failure with a higher number of broken fibers for the 365 μm fibers, but this was not statistically significant when compared with the 272 μm fibers ($p > 0.05$).

CONCLUSION: Small-core fibers are more resistant than large-core fibers as lower bending diameters (<9 mm) are required to break smaller fibers. In acute angles, the use of small-core fibers, at a low energy and long-pulse (dusting) setting, will reduce the risk of fiber rupture.

Version ID

1

Status

MEDLINE

Authors Full Name

Haddad, Mattieu, Emiliani, Esteban, Rouchausse, Yann, Coste, Frederic, Doizi, Steeve, Berthe, Laurent, Buttice, Salvatore, Somani, Bhaskar, Traxer, Olivier

Institution

Haddad, Mattieu. 1 Department of Urology, Tenon Hospital, Pierre and Marie Curie University, Paris VI, Paris, France . Haddad, Mattieu. 2 Groupe de Recherche Clinique sur la Lithiase Urinaire, GRC ndegree20, Sorbonne Universites, UPMC Univ, Paris VI, Department of Urology, Tenon Hospital, Paris XX, Paris, France .

Haddad, Mattieu. 3 Process and Engineering in Mechanics and Materials Laboratory (PIMM), UMR CNRS/ENSAM, Paris VI, Paris, France .

Emiliani, Esteban. 1 Department of Urology, Tenon Hospital, Pierre and Marie Curie University, Paris VI, Paris, France .

Emiliani, Esteban. 2 Groupe de Recherche Clinique sur la Lithiase Urinaire, GRC ndegree20, Sorbonne Universites, UPMC Univ, Paris VI, Department of Urology, Tenon Hospital, Paris XX, Paris, France .

Emiliani, Esteban. 4 Department of Urology, Fundacion Puigvert, Universidad Autonoma de Barcelona, Barcelona, Spain .

Rouchausse, Yann. 3 Process and Engineering in Mechanics and Materials Laboratory (PIMM), UMR CNRS/ENSAM, Paris VI, Paris, France .

Coste, Frederic. 3 Process and Engineering in Mechanics and Materials Laboratory (PIMM), UMR CNRS/ENSAM, Paris VI, Paris, France .

Doizi, Steeve. 1 Department of Urology, Tenon Hospital, Pierre and Marie Curie University, Paris VI, Paris, France .

Doizi, Steeve. 2 Groupe de Recherche Clinique sur la Lithiase Urinaire, GRC ndegree20, Sorbonne Universites, UPMC Univ, Paris VI, Department of Urology, Tenon Hospital, Paris XX, Paris, France .

Berthe, Laurent. 3 Process and Engineering in Mechanics and Materials Laboratory (PIMM), UMR CNRS/ENSAM, Paris VI, Paris, France .

Buttice, Salvatore. 5 Section of Urology, Department of Human Pathology, University of Messina, Messina, Italy .

Somani, Bhaskar. 2 Groupe de Recherche Clinique sur la Lithiase Urinaire, GRC ndegree20, Sorbonne Universites, UPMC Univ, Paris VI, Department of Urology, Tenon Hospital, Paris XX, Paris, France .

Somani, Bhaskar. 6 Department of Urology, University Hospitals Southampton NHS Trust, Southampton, United Kingdom .

Traxer, Olivier. 1 Department of Urology, Tenon Hospital, Pierre and Marie Curie University, Paris VI, Paris, France .

Traxer, Olivier. 2 Groupe de Recherche Clinique sur la Lithiase Urinaire, GRC ndegree20, Sorbonne Universites, UPMC Univ, Paris VI, Department of Urology, Tenon Hospital, Paris XX, Paris, France .

Year of Publication

2017

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Variable Pulse Duration From a New Holmium:YAG Laser: The Effect on Stone Comminution, Fiber Tip Degradation, and Retropulsion in a Dusting Model.

Wollin DA, Ackerman A, Yang C, Chen T, Simmons WN, Preminger GM, Lipkin ME

Ovid MEDLINE(R) ALL

Urology. 103:47-51, 2017 May.

[Journal Article]

UI: 28089885

OBJECTIVE: To more clearly define the efficiency and potential benefits of variable pulse-width laser technology for ureteroscopic lithotripsy, we performed comparative in vitro evaluations assessing stone comminution, laser fiber tip degradation, and stone retropulsion.

METHODS: All experiments were conducted using a Swiss LaserClast Holmium:YAG laser (Electro Medical Systems, Nyon, Switzerland) with adjustable pulse duration (300 micros-1500 micros). To assess comminution efficiency and fiber tip degradation, a "dusting" model was employed; the laser fiber tip was moved by a 3-dimensional positioning system in a spiral motion across a flat BegoStone surface submerged in water. Comminution efficiency was measured as the loss of stone mass while fiber tip degradation was measured simultaneously. The same laser and fiber were used in a pendulum model to measure stone retropulsion with a high-speed resolution camera.

RESULTS: In our dusting model, comminution was significantly greater at high energy (2 J/5 Hz). At the high energy setting, comminution was significantly greater with long pulse duration than short pulse, although this difference was not seen at the high frequency setting (1 J/10 Hz). Tip degradation was increased at high energy settings and was even more pronounced with short pulse duration than long pulse. Short pulse duration caused far more retropulsion than the long pulse setting.

CONCLUSION: In an in vitro dusting model, a longer laser pulse duration provides effective stone comminution with the advantage of reducing laser fiber tip degradation and stone retropulsion.

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Version ID

1

Status

MEDLINE

Authors Full Name

Wollin, Daniel A, Ackerman, Anika, Yang, Chen, Chen, Tony, Simmons, Walter Neal, Preminger, Glenn M, Lipkin, Michael E

Institution

Wollin, Daniel A. Division of Urologic Surgery, Duke University Medical Center, Durham, NC.
Electronic address: Daniel.wollin@duke.edu. Ackerman, Anika. Division of Urologic Surgery,
Duke University Medical Center, Durham, NC.

Yang, Chen. Department of Mechanical Engineering and Materials Science, Duke University,
Durham, NC.

Chen, Tony. Division of Urologic Surgery, Duke University Medical Center, Durham, NC.

Simmons, Walter Neal. Department of Mechanical Engineering and Materials Science, Duke
University, Durham, NC.

Preminger, Glenn M. Division of Urologic Surgery, Duke University Medical Center, Durham, NC.

Lipkin, Michael E. Division of Urologic Surgery, Duke University Medical Center, Durham, NC.

Year of Publication

2017

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32.

Ureteroscopic Stone Extraction in Cross-Fused Renal Ectopia.

Toussi A, Boswell T, Potretzke A

Ovid MEDLINE(R) ALL

Journal of Endourology Case Reports. 4(1):195-197, 2018.

[Case Reports]

UI: 30671540

Background: Urinary stone disease in cross-fused renal ectopia is rare and the aberrant anatomy poses challenges to treatment options. The available literature on treatment modalities remains limited. In this study, we present a case of ureteral stone in a cross-fused renal ectopia managed through retrograde approach. Case Presentation: We present a case of a 69-year-old woman with an obstructing ureteral stone in a cross-fused renal ectopia managed with ureteroscopic stone extraction. With the use of a ureteral access sheath, holmium laser, and Nitinol basket, the

stone was fragmented and removed through retrograde access. The stone composition was 100% calcium oxalate monohydrate and her 24-hour urine collection was only significant for low volume. Conclusion: With special modifications and attention to the individual patient's anatomy, retrograde approach with the use of an access sheath is safe and effective for treatment of ureteral stones in patients with cross-fused renal ectopia.

Version ID

1

Status

PubMed-not-MEDLINE

Authors Full Name

Toussi, Amir, Boswell, Timothy, Potretzke, Aaron

Institution

Toussi, Amir. Department of Urology, Mayo Clinic, Rochester, Minnesota. Boswell, Timothy.

Department of Urology, Mayo Clinic, Rochester, Minnesota.

Potretzke, Aaron. Department of Urology, Mayo Clinic, Rochester, Minnesota.

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6340376>

Year of Publication

2018

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[SFX](#)

33.

Retrograde intrarenal surgery: An expanding role in treatment of urolithiasis. [Review]

Rodriguez-Monsalve Herrero M, Doizi S, Keller EX, De Coninck V, Traxer O

Ovid MEDLINE(R) ALL

Asian Journal of Urology. 5(4):264-273, 2018 Oct.

[Journal Article. Review]

UI: 30364659

During the past 3 decades, the surgical management of kidney stones has undergone many technological advances and one is the development of the flexible ureteroscopy. The development of this instrument as well as ancillary equipment such as baskets, graspers, and others, and improvements in lithotripsy with Holmium: YAG laser have led to expand its indications with diagnostic and therapeutic management of medical issues of the upper urinary tract such as urolithiasis and urothelial tumors. The objective of this review is to describe its indications and results in the different scenarios for the treatment of urinary stones.

Version ID

1

Status

PubMed-not-MEDLINE

Authors Full Name

Rodriguez-Monsalve Herrero, Maria, Doizi, Steeve, Keller, Etienne Xavier, De Coninck, Vincent, Traxer, Olivier

Institution

Rodriguez-Monsalve Herrero, Maria. Department of Urology, Tenon Hospital, Assistance-Publique Hopitaux de Paris, Paris, France. Doizi, Steeve. Department of Urology, Tenon Hospital, Assistance-Publique Hopitaux de Paris, Paris, France.

Keller, Etienne Xavier. Department of Urology, Tenon Hospital, Assistance-Publique Hopitaux de Paris, Paris, France.

De Coninck, Vincent. Department of Urology, Tenon Hospital, Assistance-Publique Hopitaux de Paris, Paris, France.

Traxer, Olivier. Department of Urology, Tenon Hospital, Assistance-Publique Hopitaux de Paris, Paris, France.

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6197554>

Year of Publication

2018

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34.

Fluoroscopy-free technique is safe and feasible in retrograde intrarenal surgery for renal stones.

Cimen HI, Halis F, Saglam HS, Gokce A

Ovid MEDLINE(R) ALL

Turkish Journal of Urology. 43(3):309-312, 2017 Sep.

[Journal Article]

UI: 28861303

OBJECTIVE: The aim of this study was to present outcomes of our patients who had undergone retrograde intrarenal surgery (RIRS) with fluoroscopy-free technique and evaluate the efficacy and safety of the technique.

MATERIAL AND METHODS: Between January 2013 and June 2015 the outcomes of 93 patients who had undergone RIRS with fluoroscopy-free technique were retrospectively evaluated. Our RIRS technique involved preoperative assessment of ureter by semi-rigid ureteroscope, inserting guidewire through semi-rigid ureteroscope, inserting ureteral access sheath over the guidewire with the visual guidance of semi-rigid ureteroscope, passing flexible ureteroscope through the sheath, dusting the stone with holmium laser, rechecking the ureter with semi-rigid ureteroscope and inserting double J stent through semi-rigid ureteroscope. Low-dose computerized tomography scan was performed to all patients in postoperative first month and the results were classified as stone-free (absence of any fragment), clinically insignificant residual fragments (CIRF) (≤ 4 mm) and residual stone.

RESULTS: Study population consisted of 62 (66.6%) male and 31 (33.3%) female patients with a mean age of 47.8 ± 14 (range 14-93) years. Mean stone size was 14.7 ± 5 (7-32) mm. Median operative time was 72 (30-125) minutes. Stone-free rate was achieved in 65 (69.9%) patients while CIRF was achieved in 13 (13.9%) and residual stones were detected in 15 (16.1%) patients. Five patients (5.37%) had minor complications, including hematuria and fever. No major complications were observed.

CONCLUSION: Fluoroscopy-free technique is effective and safe technique in management of renal stone. Furthermore fluoroscopy-free technique can protect the surgeon from the negative effects of radiation.

Version ID

1

Status

PubMed-not-MEDLINE

Authors Full Name

Cimen, Haci Ibrahim, Halis, Fikret, Saglam, Hasan Salih, Gokce, Ahmet

Institution

Cimen, Haci Ibrahim. Department of Urology, Sakarya University School of Medicine, Sakarya, Turkey. Halis, Fikret. Department of Urology, Sakarya University School of Medicine, Sakarya, Turkey.

Saglam, Hasan Salih. Department of Urology, Sakarya University School of Medicine, Sakarya, Turkey.

Gokce, Ahmet. Department of Urology, Sakarya University School of Medicine, Sakarya, Turkey.

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5562250>

Year of Publication

2017

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35.

Single session vs two sessions of flexible ureteroscopy (FURS) for dusting of renal pelvic stones 2-3 cm in diameter: Does stone size or hardness play a role in number of sessions to be applied?".

El Hamed AMA, Elmoghazy H, Aldahshoury M, Riad A, Mostafa M, Farag F, Gamal W

Ovid MEDLINE(R) ALL

Turkish Journal of Urology. 43(2):158-161, 2017 Jun.

[Journal Article]

UI: 28717539

OBJECTIVE: To evaluate the stone hardness in predicting the need for single or two sessions of retrograde intrarenal surgery (RIRS) for renal pelvis stones of 2-3 cm in size.

MATERIAL AND METHODS: Ninety-six patients (64 male and 32 female) with only renal stones (2.5 $\pm$ 0.3 cm) underwent RIRS using flexible 7.5 Fr ureteroscope (FURS). The stone hardness was evaluated by preoperative non-contrast computed tomography (NCCT). The patients were divided into two groups based on stone hardness: Group I (n=54) (hard stones - Hounsfield Unit (HU) >1000) and group II (n=42) (not hard stone - HU <1000). The stone-free rate, the operative time, any intra or postoperative complications and the need for second sessions of RIRS were evaluated.

RESULTS: All stones were successfully accessed. Intraoperative complications were not reported. The initial stone-free rate was 40% in Group I and 95% in Group II after a single session (p=0.01). A second session FURS was needed in 32 cases of Group I (40%) where postoperative CT showed significant residual stone fragments of 6 $\pm$ 2 mm, and stone-free rate up to 100 percent. On the contrary only 2 cases from Group II underwent second session FURS (p=0.01). The operative times were 75 $\pm$ 15 minutes in Group I and 55 $\pm$ 13 minutes in Group II (p<0.01). Six patients (4 in group I and 2 in group II) had postoperative high-grade fever (Clavien Grade II).

CONCLUSION: Stone hardness had a significant impact on the decision of performing single versus two sessions of FURS for renal pelvic stones of 2-3 cm rather than the stone size alone.

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1

Status

PubMed-not-MEDLINE

Authors Full Name

El Hamed, Ahmed Mamdouh Abd, Elmoghazy, Hazem, Aldahshoury, Mohamed, Riad, Ahmed, Mostafa, Mohammed, Farag, Fawzy, Gamal, Wael

Institution

El Hamed, Ahmed Mamdouh Abd. Department of Urology, Sohag University, Sohag, Egypt.

Elmoghazy, Hazem. Department of Urology, Sohag University, Sohag, Egypt.

Aldahshoury, Mohamed. Department of Urology, South Valley University, Qena, Egypt.

Riad, Ahmed. Department of Urology, Sohag University, Sohag, Egypt.

Mostafa, Mohammed. Department of Urology, South Valley University, Qena, Egypt.

Farag, Fawzy. Department of Urology, Sohag University, Sohag, Egypt.

Gamal, Wael. Department of Urology, Sohag University, Sohag, Egypt.

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2017

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36.

Comparison of the Nanopulse Lithotripter to the Holmium Laser: Stone Fragmentation Efficiency and Impact on Flexible Ureteroscope Deflection and Flow.

Kaplan AG, Chen TT, Sankin G, Yang C, Dale JA, Simmons WN, Zhong P, Preminger GM, Lipkin ME

Ovid MEDLINE(R) ALL

Journal of Endourology. 30(11):1150-1154, 2016 11.

[Comparative Study. Journal Article]

UI: 27736195

INTRODUCTION: The Nanopulse Lithotripter (NPL; Lithotech Medical, Israel) is a novel intracorporeal device that uses a nanosecond duration electrical discharge through a reusable flexible coaxial probe to endoscopically fragment urinary stones. This device was compared with a holmium laser lithotripsy (HoL) with regard to stone fragmentation efficiency (SFE) and its impact on flexible ureteroscope (URS) deflection and flow of irrigation.

METHODS: Using a custom bench model, a 6 mm BegoStone cylindrical phantom (mixture 5:2) was confined under 0.9% saline atop sequential mesh sieves. The SFE of two NPL probe sizes (2.0F, 3.6F) and two HoL fibers (200, 365 mum) was evaluated using concordant settings of 1 J and 5 Hz. URS deflection and irrigation flow with NPL probes in the working channel were tested in five new fourth generation flexible URS and compared with other adjunct endourologic instruments.

RESULTS: The 2.0F NPL showed improved SFE compared with the 200 mum laser (86 mg/min vs 52 mg/min, $p = 0.014$) as did the 3.6F NPL vs the 365 mum laser (173 mg/min vs 80 mg/min, $p = 0.05$). The NPL created more 1 to 2 mm fragments; the laser created more dust. URS deflection reduced by 3.75degree with the 2.0 NPL probe. URS irrigation flow reduced from 36.5 to 6.3 mL/min with the 2.0F NPL probe.

CONCLUSION: NPL shows improved SFE compared with HoL. Flow with the 2.0F probe is akin to a stone basket. NPL offers an effective alternative to HoL.

Version ID

1

Status

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Authors Full Name

Kaplan, Adam G, Chen, Tony T, Sankin, Georgy, Yang, Chen, Dale, Joanne A, Simmons, W
Neal, Zhong, Pei, Preminger, Glenn M, Lipkin, Michael Eric

Institution

Kaplan, Adam G. 1 Division of Urologic Surgery, Duke University Medical Center, Durham, North
Carolina. Chen, Tony T. 1 Division of Urologic Surgery, Duke University Medical Center,
Durham, North Carolina.

Sankin, Georgy. 2 Mechanical Engineering and Materials Science, Duke University, Durham,
North Carolina.

Yang, Chen. 2 Mechanical Engineering and Materials Science, Duke University, Durham, North
Carolina.

Dale, Joanne A. 1 Division of Urologic Surgery, Duke University Medical Center, Durham, North
Carolina.

Simmons, W Neal. 2 Mechanical Engineering and Materials Science, Duke University, Durham,
North Carolina.

Zhong, Pei. 2 Mechanical Engineering and Materials Science, Duke University, Durham, North
Carolina.

Preminger, Glenn M. 1 Division of Urologic Surgery, Duke University Medical Center, Durham,
North Carolina.

Lipkin, Michael Eric. 1 Division of Urologic Surgery, Duke University Medical Center, Durham,
North Carolina.

Year of Publication

2016

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37.

Novel Biocompatible Adhesive for Intrarenal Embedding and Endoscopic Removal of Small Residual Fragments after Minimally Invasive Stone Treatment in an Ex Vivo Porcine Kidney Model: Initial Evaluation of a Prototype.

Hein S, Schoenthaler M, Wilhelm K, Schlager D, Thiel K, Brandmann M, Richter K, Grunwald I, Wetterauer U, Miernik A

Ovid MEDLINE(R) ALL

Journal of Urology. 196(6):1772-1777, 2016 12.

[Journal Article]

UI: 27256206

PURPOSE: Residual fragments related to endoscopic intracorporeal lithotripsy are a challenging problem. The impact of residual fragments remains a subject of discussion and growing evidence highlights that they have a central role in recurrent stone formation. Therefore, we developed a novel bioadhesive system for intrarenal embedding and retrieval of residual fragments after endoscopic lithotripsy in an ex vivo porcine kidney model.

MATERIALS AND METHODS: In a standardized setting 30 human stone fragments 1 mm or less were inserted in the lower pole of an ex vivo porcine kidney model. We assessed the extraction efficacy of flexible ureteroscopy using the bioadhesive system in 15 preparations and a conventional retrieval basket in 15. Outcomes were compared regarding the endoscopic and macroscopic stone-free rate, and overall time of retrieval.

RESULTS: Embedding and retrieving the residual fragment-bioadhesive complex were feasible in all trial runs. We observed no adverse effects such as adhesions between the adhesive and the renal collecting system or the instruments used. The stone-free rate was 100% and 60% in the bioadhesive and conventional retrieval groups, respectively ($p = 0.017$). Mean retrieval time was significantly shorter at 10 minutes 33 seconds vs 36 minutes 56 seconds in the bioadhesive group vs the conventional group ($p = 0.001$).

CONCLUSIONS: This novel method involving adhesive based complete removal of residual fragments from the collecting system has proved to be feasible. Our evaluation in a porcine kidney model revealed that this technology performed well. Further tests, including inpatient studies, are required to thoroughly evaluate the benefit and potential drawbacks of bioadhesive based extraction of residual fragments after intracorporeal lithotripsy.

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1

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Authors Full Name

Hein, Simon, Schoenthaler, Martin, Wilhelm, Konrad, Schlager, Daniel, Thiel, Karsten,
Brandmann, Maria, Richter, Katharina, Grunwald, Ingo, Wetterauer, Ulrich, Miernik, Arkadiusz

Institution

Hein, Simon. Department of Urology, Medical Center, University of Freiburg, Freiburg, Germany;
Department of Adhesive Bonding Technology and Surfaces, Fraunhofer Institute for
Manufacturing Technology and Advanced Materials (KT, MB, KR, IG), Bremen, Germany.

Electronic address: simon.hein@uniklinik-freiburg.de. Schoenthaler, Martin. Department of
Urology, Medical Center, University of Freiburg, Freiburg, Germany; Department of Adhesive
Bonding Technology and Surfaces, Fraunhofer Institute for Manufacturing Technology and
Advanced Materials (KT, MB, KR, IG), Bremen, Germany.

Wilhelm, Konrad. Department of Urology, Medical Center, University of Freiburg, Freiburg,
Germany; Department of Adhesive Bonding Technology and Surfaces, Fraunhofer Institute for
Manufacturing Technology and Advanced Materials (KT, MB, KR, IG), Bremen, Germany.

Schlager, Daniel. Department of Urology, Medical Center, University of Freiburg, Freiburg,
Germany; Department of Adhesive Bonding Technology and Surfaces, Fraunhofer Institute for
Manufacturing Technology and Advanced Materials (KT, MB, KR, IG), Bremen, Germany.

Thiel, Karsten. Department of Urology, Medical Center, University of Freiburg, Freiburg,
Germany; Department of Adhesive Bonding Technology and Surfaces, Fraunhofer Institute for
Manufacturing Technology and Advanced Materials (KT, MB, KR, IG), Bremen, Germany.

Brandmann, Maria. Department of Urology, Medical Center, University of Freiburg, Freiburg,
Germany; Department of Adhesive Bonding Technology and Surfaces, Fraunhofer Institute for
Manufacturing Technology and Advanced Materials (KT, MB, KR, IG), Bremen, Germany.

Richter, Katharina. Department of Urology, Medical Center, University of Freiburg, Freiburg,
Germany; Department of Adhesive Bonding Technology and Surfaces, Fraunhofer Institute for
Manufacturing Technology and Advanced Materials (KT, MB, KR, IG), Bremen, Germany.

Grunwald, Ingo. Department of Urology, Medical Center, University of Freiburg, Freiburg,
Germany; Department of Adhesive Bonding Technology and Surfaces, Fraunhofer Institute for
Manufacturing Technology and Advanced Materials (KT, MB, KR, IG), Bremen, Germany.

Wetterauer, Ulrich. Department of Urology, Medical Center, University of Freiburg, Freiburg,
Germany; Department of Adhesive Bonding Technology and Surfaces, Fraunhofer Institute for
Manufacturing Technology and Advanced Materials (KT, MB, KR, IG), Bremen, Germany.

Miernik, Arkadiusz. Department of Urology, Medical Center, University of Freiburg, Freiburg,
Germany; Department of Adhesive Bonding Technology and Surfaces, Fraunhofer Institute for
Manufacturing Technology and Advanced Materials (KT, MB, KR, IG), Bremen, Germany.

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2016

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38.

Comparison of New Single-Use Digital Flexible Ureteroscope Versus Nondisposable Fiber Optic and Digital Ureteroscope in a Cadaveric Model.

Proietti S, Dragos L, Molina W, Doizi S, Giusti G, Traxer O

Ovid MEDLINE(R) ALL

Journal of Endourology. 30(6):655-9, 2016 06.

[Comparative Study. Journal Article]

UI: 27084572

PURPOSE: To evaluate LithoVue, the new single-use digital flexible ureteroscope, in a human cadaveric model and compare it with a nondisposable fiber optic and digital flexible ureteroscopes.

MATERIALS AND METHODS: LithoVue, a conventional fiber optic, and digital flexible ureteroscopes were each tested in four renal units of recently deceased female cadavers by three surgeons. The following parameters were analyzed: accessibility to the kidney and navigation of the entire collecting system with and without ureteral access sheath (UAS), lower pole access measuring the deflection of the ureteroscope with the working channel empty, and with inside two different baskets and laser fibers. A subjective evaluation of maneuverability and visibility was assessed by each surgeon at the end of every procedure.

RESULTS: Kidney access into the Renal unit 1 was not possible without UAS for all ureteroscopes because of noncompliant ureter at the level of sacroiliac joint. The reusable digital ureteroscope was unable to reach one calix of the lower pole and one calix of the upper pole (Renal units 2 and 3) without UAS placement. Lower pole access with baskets and laser fibers was possible for each ureteroscope after UAS placement. No statistically significant differences

were detected in angle deflection between ureteroscopes. The digital ureteroscope was preferred for visibility in all procedures: LithoVue for maneuverability in six procedures, fiber optic in five procedures, and the digital ureteroscope in one procedure.

CONCLUSIONS: LithoVue seems to be comparable with conventional ureteroscopes in terms of visibility and manipulation into the collecting system in fresh human cadavers. Further studies in humans are needed to determine the clinical value of this new instrument.

Version ID

1

Status

MEDLINE

Authors Full Name

Proietti, Silvia, Dragos, Laurian, Molina, Wilson, Doizi, Steeve, Giusti, Guido, Traxer, Olivier
Institution

Proietti, Silvia. 1 Department of Urology, Ville Turro Division, IRCCS San Raffaele Scientific Institute, Milan, Italy . Proietti, Silvia. 2 Department of Urology, Tenon Hospital, Paris, France .

Dragos, Laurian. 2 Department of Urology, Tenon Hospital, Paris, France .

Molina, Wilson. 3 Department of Surgery/Urology, Denver Health, Denver, Colorado.

Doizi, Steeve. 2 Department of Urology, Tenon Hospital, Paris, France .

Giusti, Guido. 1 Department of Urology, Ville Turro Division, IRCCS San Raffaele Scientific Institute, Milan, Italy .

Traxer, Olivier. 2 Department of Urology, Tenon Hospital, Paris, France .

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4913498>

Year of Publication

2016

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[SFX](#)

Use of XenX™, the latest ureteric occlusion device with guide wire utility: results from a prospective multicentric comparative study.

Sanguedolce F, Montanari E, Alvarez-Maestro M, Macchione N, Hruby S, Papatsoris A, Kallidonis P, Villa L, Honeck P, Traxer O, Greco F, EAU Young Academic Urologists-Endourology and Urolithiasis Working Group

Ovid MEDLINE(R) ALL

World Journal of Urology. 34(11):1583-1589, 2016 Nov.

[Comparative Study. Journal Article. Multicenter Study]

UI: 26993821

PURPOSE: This is a prospective multicentric comparative study evaluating the performance of XenX-a new dual-purpose device for the prevention of stone fragments migration during ureteroscopic lithotripsy (URS).

METHODS: Between March 2014 and January 2015, 41 patients undertaking URS + XenX were matched with 41 patients undergoing standard URS. Patients included had unilateral ureteric stone(s) of 0.5-1.5 cm in maximum size. Demographics, complication rates and surgical outcomes were recorded for comparison. A Likert-like 5-grade scoring system was used for surgeons' evaluation of XenX properties. Cost analysis was performed by comparing weighted mean costs of the relevant procedures.

RESULTS: Patients' characteristics between the two groups were comparable. Lasering time was longer for XenX group (13.59 vs. 5.17 min; $p = 0.0001$) whilst use of basket and need of JJ stent insertion was more frequent in control group (19.5 vs. 97.6 %; $p = 0.0001$ and 22 vs. 35 %; $p = 0.001$, respectively). Intra-operative SFR was significantly higher for XenX group (100 vs. 85.4 %; $p = 0.0001$), but not at 4-week follow-up, after ancillary procedures were needed in 17.1 % of the control group. Surgeons' evaluations for XenX were suboptimal for "Ease of Basketing" (2/5) and "Advancement of double J stent" (3/5). The use of XenX increased costs of procedures, but spared the costs associated to ancillary procedures and stent removals.

CONCLUSIONS: XenX confirmed to be a safe and effective device especially for the treatment of upper ureteric tract stones; moreover, XenX may reduce the risk for the need of auxiliary procedures and for the insertion of a JJ stent.

Version ID

1

Status

MEDLINE

Authors Full Name

Sanguedolce, Francesco, Montanari, Emanuele, Alvarez-Maestro, Mario, Macchione, Nicola, Hruby, Stephan, Papatsoris, Athanasios, Kallidonis, Panagiotis, Villa, Luca, Honeck, Patrick,

Traxer, Olivier, Greco, Francesco, EAU Young Academic Urologists- Endourology and Urolithiasis Working Group

Institution

Sanguedolce, Francesco. King's College Hospital, NHS Foundation Trust, London, UK.

fsangue@hotmail.com. Sanguedolce, Francesco. Northampton General Hospital, Northampton, UK. fsangue@hotmail.com.

Montanari, Emanuele. San Paolo Hospital, University of Milano, Milan, Italy.

Alvarez-Maestro, Mario. Infanta Sofia University Hospital, Madrid, Spain.

Macchione, Nicola. San Paolo Hospital, University of Milano, Milan, Italy.

Hruby, Stephan. Paracelsus Medical University Salzburg, Salzburg, Austria.

Papatsoris, Athanasios. Sismanoglio General Hospital, Athens, Greece.

Kallidonis, Panagiotis. Patras University Hospital, Patras, Greece.

Villa, Luca. Tenon University Hospital, Paris, France.

Honeck, Patrick. Sindelfingen-Boblingen Clinic, Boblingen, Germany.

Traxer, Olivier. Patras University Hospital, Patras, Greece.

Greco, Francesco. Romolo Hospital, Rocca di Neto, Italy.

Year of Publication

2016

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40.

Natural History, Complications and Re-Intervention Rates of Asymptomatic Residual Stone Fragments after Ureteroscopy: a Report from the EDGE Research Consortium.

Chew BH, Brotherhood HL, Sur RL, Wang AQ, Knudsen BE, Yong C, Marien T, Miller NL, Krambeck AE, Charchenko C, Humphreys MR

Ovid MEDLINE(R) ALL

Journal of Urology. 195(4 Pt 1):982-6, 2016 Apr.

[Journal Article. Multicenter Study]

UI: 26585680

PURPOSE: Fragments 4 mm or smaller after ureteroscopy historically have been considered clinically insignificant but there is a reported 20% event rate on followup even with stones 4 mm or smaller. In this study we examine the natural history, complications and re-intervention rates of fragments after ureteroscopy.

MATERIALS AND METHODS: Data from 6 centers were collected retrospectively from members of the Endourology Disease Group for Excellence in 232 patients who had residual fragments after ureteroscopy between 2006 and 2013. Patients with fragment(s) of any size on imaging within 12 months were eligible. The primary outcome measured was stone events, and secondary outcomes included stone growth, stone passage, re-intervention and complications.

RESULTS: Of the 232 subjects with fragments 131 (56%) required no further intervention and remained asymptomatic, 34 (15%) experienced complications requiring no intervention and 67 (29%) required intervention, ie the primary outcome stone event rate was 44%. Fragments larger than 4 mm were more likely to grow with time ($p < 0.001$) and were associated with more complications ($p = 0.039$). Fragments larger than 2 mm were more likely to grow ($p < 0.001$) but were not associated with complications or re-intervention. Re-intervention was predictable based on fragment size ($p = 0.017$). In a multivariable logistic regression model there was no significant difference between the techniques of dusting stones or basket extraction.

CONCLUSIONS: This study suggests that fragment size larger than 4 mm after ureteroscopy is associated with significantly higher rates of stone growth, complications and the need for re-intervention. Ensuring complete stone-free status is the most effective strategy to reduce stone events after ureteroscopy.

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Version ID

1

Status

MEDLINE

Authors Full Name

Chew, Ben H, Brotherhood, Hilary L, Sur, Roger L, Wang, An Qi, Knudsen, Bodo E, Yong, Courtney, Marien, Tracy, Miller, Nicole L, Krambeck, Amy E, Charchenko, Cameron, Humphreys, Mitchell R

Institution

Chew, Ben H. University of British Columbia, Vancouver, British Columbia, Canada. Electronic address: ben.chew@ubc.ca. Brotherhood, Hilary L. University of British Columbia, Vancouver, British Columbia, Canada.

Sur, Roger L. University of California San Diego, La Jolla, California.
Wang, An Qi. University of California San Diego, La Jolla, California.
Knudsen, Bodo E. Ohio State University, Columbus, Ohio.
Yong, Courtney. Ohio State University, Columbus, Ohio.
Marien, Tracy. Vanderbilt University, Nashville, Tennessee.
Miller, Nicole L. Vanderbilt University, Nashville, Tennessee.
Krambeck, Amy E. Mayo Clinic, Rochester, Minnesota.
Charchenko, Cameron. Mayo Clinic, Rochester, Minnesota.
Humphreys, Mitchell R. Mayo Clinic Arizona, Phoenix, Arizona.

Comments

Comment in (CIN)

Year of Publication

2016

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Link to the External Link Resolver:

[SFX](#)

41.

Impact of pulse duration on Ho:YAG laser lithotripsy: fragmentation and dusting performance.

Bader MJ, Pongratz T, Khoder W, Stief CG, Herrmann T, Nagele U, Sroka R

Ovid MEDLINE(R) ALL

World Journal of Urology. 33(4):471-7, 2015 Apr.

[Journal Article]

UI: 25366882

OBJECTIVES: In vitro investigations of Ho:YAG laser-induced stone fragmentation were performed to identify potential impacts of different pulse durations on stone fragmentation characteristics.

MATERIALS AND METHODS: A Ho:YAG laser system (Swiss LaserClast, EMS S.A., Nyon, Switzerland) with selectable long or short pulse mode was tested with regard to its fragmentation

and laser hardware compatibility properties. The pulse duration is depending on the specific laser parameters. Fragmentation tests (hand-held, hands-free, single-pulse-induced crater) on artificial BEGO stones were performed under reproducible experimental conditions (fibre sizes: 365 and 200 microm; laser settings: 10 W through combinations of 0.5, 1, 2 J/pulse and 20, 10, 5 Hz, respectively).

RESULTS: Differences in fragmentation rates between the two pulse duration regimes were detected with statistical significance for defined settings. Hand-held and motivated Ho:YAG laser-assisted fragmentation of BEGO stones showed no significant difference between short pulse mode and long pulse mode, neither in fragmentation rates nor in number of fragments and fragment sizes. Similarly, the results of the hands-free fragmentation tests (with and without anti-repulsion device) showed no statistical differences between long pulse and short pulse modes.

CONCLUSION: The study showed that fragmentation rates for long and short pulse durations at identical power settings remain at a comparable level. Longer holmium laser pulse duration reduces stone pushback. Therefore, longer laser pulses may result in better clinical outcome of laser lithotripsy and more convenient handling during clinical use without compromising fragmentation effectiveness.

Version ID

1

Status

MEDLINE

Authors Full Name

Bader, Markus J, Pongratz, Thomas, Khoder, Wael, Stief, Christian G, Herrmann, Thomas, Nagele, Udo, Sroka, Ronald

Institution

Bader, Markus J. Department of Urology, Kreisklinik Ebersberg Gemeinnutzige GmbH, Ebersberg, Germany, markus-j-bader@gmx.de.

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4375294>

Year of Publication

2015

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[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

42.

Kidney stones: flexible ureteroscopy. [Review]

Tseng TY, Preminger GM

Ovid MEDLINE(R) ALL

Clinical Evidence. 2015, 2015 Oct 30.

[Journal Article. Review. Systematic Review]

UI: 26535802

INTRODUCTION: The age of peak incidence for stone disease is 20 to 40 years, although stones are seen in all age groups. There is a male to female ratio of 3:2.

METHODS AND OUTCOMES: We conducted a systematic overview, aiming to answer the following clinical question: What are the effects of flexible ureteroscopy for the removal of renal stones? We searched: Medline, Embase, The Cochrane Library, and other important databases up to May 2014 (Clinical Evidence overviews are updated periodically; please check our website for the most up-to-date version of this overview).

RESULTS: At this update, searching of electronic databases retrieved 197 studies. After deduplication and removal of conference abstracts, 118 records were screened for inclusion in the overview. Appraisal of titles and abstracts led to the exclusion of 99 studies and the further review of 18 full publications. Of the 18 full articles evaluated, one systematic review and four RCTs were added at this update. We performed a GRADE evaluation for eight PICO combinations.

CONCLUSIONS: In this systematic overview, we categorised the efficacy for four interventions, based on information relating to the effectiveness and safety of: flexible ureteroscopy (combined with snare or basket or laser lithotripsy) versus expectant management, flexible ureteroscopy (combined with snare or basket or laser lithotripsy) versus extracorporeal shockwave lithotripsy, flexible ureteroscopy (combined with snare or basket or laser lithotripsy) versus percutaneous nephrolithotomy.

Version ID

1

Status

MEDLINE

Authors Full Name

Tseng, Timothy Y, Preminger, Glenn M

Institution

Tseng, Timothy Y. University of Texas Health Science Center at San Antonio, San Antonio, TX, US.

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4632914>

Year of Publication

2015

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[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

43.

[Implementation of a scale on stone baskets]. [German] Implementierung einer Skala auf Steinfangkorben. <Implementierung einer Skala auf Steinfangkorben.>

Cordes J, Nguyen F, Pinkowski W, Jocham D

Ovid MEDLINE(R) ALL

Aktuelle Urologie. 45(3):218-20, 2014 May.

[Journal Article]

UI: 24902071

BACKGROUND: Complications after endoscopic retrieval of kidney and ureter stones are obviously related to the size of the stones as well as the experience of the surgeon and other factors. During the procedure it is sometimes difficult for surgeons to estimate stone size and therefore give prognostic advises. The visual perception of the stone size depends on the shape, colour, distance to the renoscope and dilatation of the ureter. This is the so-called binding problem, because shape, color and direction of motion are processed separately by different population of optical neurons. In order to establish a better prognostic ratio, especially for less experienced surgeons we established an intraoperative semi-quantitative measurement of the stone size supported by a stone basket.

MATERIALS AND METHODS: We modified the tipped nitinol stone baskets from the company Urotech with diameters of 2.5, 3.0 and 4 Ch. The handle of this basket has a spring mechanism, which automatically closes the basket and provides a predefined fixation force of the stones within the basket. On the handle we established a non-linear scale in mm by grabbing standardized balls or standardized screws.

RESULTS: The scales are nonlinear because of the nonlinear relation between the diameter of the stone and the distance of the slider. Also the scales differ in between the basket size, because of the different strain conditions due to the different wire sizes and materials or the spring and basket.

CONCLUSIONS: This scale could be an important orientation for a surgeon during endourological procedures to estimate stone sizes. It could be used also for the documentation of the size of fragments after an endourologic lithotripsy and could help in the decision for or against an extraction. Finally it could be very interesting for other disciplines like gastroenterology. The scale should be validated in further clinical trials.

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Version ID

1

Status

MEDLINE

Authors Full Name

Cordes, J, Nguyen, F, Pinkowski, W, Jocham, D

Institution

Cordes, J. Klinik für Urologie, UKSH Campus Lubeck. Nguyen, F. Klinik für Urologie, UKSH Campus Lubeck.

Pinkowski, W. Urotech GmbH Achenmühle.

Jocham, D. Klinik für Urologie, UKSH Campus Lubeck.

Year of Publication

2014

Link to the Ovid Full Text or citation:

[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

44.

Holmium laser intrarenal lithotripsy in pyelocaliceal lithiasis treatment: to dust or to extractable fragments?.

Multescu R, Geavlete B, Georgescu D, Geavlete P, Chiutu L

Ovid MEDLINE(R) ALL

Chirurgia (Bucuresti). 109(1):95-8, 2014 Jan-Feb.

[Comparative Study. Journal Article]

UI: 24524477

BACKGROUND: Pyelocaliceal calculi flexible ureteroscopic approach raises problems related to operative time, associated morbidity and costs, especially by potential endoscope damage.

METHODS: 5 series, each of 20 patients with single pyelocaliceal lithiasis, were analyzed: Group I with calculi 1 cm fragmented to dust, Group II with calculi 1 cm with lithotripsy in fragments, Group III with calculi of 1-2 cm fragmented to dust, Group IV with calculi of 1-2 cm with lithotripsy in fragments, Group V with calculi of 1-2 cm fragmented to dust until they reached 1 cm, and lithotripsy in fragments afterwards. In all cases Ho:YAG lithotripsy was used.

RESULTS: Ureteral access sheath was used in 70% of the cases. Mean operating time was 39 min in group I, 21 min in Group II, 112 min in group III, 72 min in group IV and 51 min in group V. Minor complications occurred in 7 cases, while a single major complication occurred in group IV.

CONCLUSIONS: The optimal lithotripsy method for calculi 1cm seems to be in extractable fragments. Larger calculi should be fragmented to dust until they reach 1 cm and then the lithotripsy should be continued into extractable fragments.

ABBREVIATIONS: Ho: YAG - Holmium: Yttrium Aluminium Garnet, Hz - Hertz, mJ - milli joule.

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Version ID

1

Status

MEDLINE

Authors Full Name

Multescu, R, Geavlete, B, Georgescu, D, Geavlete, P, Chiutu, L

Year of Publication

2014

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[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

45.

In vivo porcine model for practicing retrograde intrarenal surgery.

Tunc L, Resorlu B, Unsal A, Oguz U, Diri A, Gozen AS, Bedir S, Ozgok Y

Ovid MEDLINE(R) ALL

Urologia Internationalis. 92(1):64-7, 2014.

[Evaluation Study. Journal Article]

UI: 23920001

OBJECTIVES: To examine the feasibility of retrograde intrarenal surgery (RIRS) in a porcine model.

MATERIALS AND METHODS: Female pigs (n = 3) were placed in a dorsal lithotomy position under general anesthesia, and stone material was inserted into the renal pelvis of the pigs. The bladder was entered with a cystoscope, and a 0.038-inch hydrophilic guidewire was passed into the renal pelvis. Following successful placement of the guidewire, a ureteral access sheath (9.5/11.5 Fr) was placed to allow for optimal visualization. A 7.5-Fr flexible ureteroscope (Karl Storz Flex-X2) and a 200-mum laser fiber were used for lithotripsy. When basketing was deemed necessary, zero-tipped nitinol stone baskets were used. Trainees then practiced all these manipulations on the model.

RESULTS: Urologists with moderate experience in advanced endourologic surgery were trained using this model. However, there were some surgical difficulties due to the urinary system anatomy of the pig. Intravaginal location of the urethra, bladder neck location of the ureters, tight ureteric orifices, tortuous ureters, longitudinally elongated renal pelvis, narrow infundibulopelvic angle and shallow calices made the passage of the instruments and maneuverability of the flexible ureteroscope more difficult than in a human model.

CONCLUSIONS: Despite some difficulties, our porcine model was very effective, because all the trainees successfully practiced the RIRS manipulations on this model.

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Version ID

1

Status

MEDLINE

Authors Full Name

Tunc, Lutfi, Resorlu, Berkan, Unsal, Ali, Oguz, Ural, Diri, Akif, Gozen, Ali Serdar, Bedir, Selahattin, Ozgok, Yasar

Institution

Tunc, Lutfi. Department of Urology, School of Medicine, University of Gazi, Ankara, Turkey.

Year of Publication

2014

Link to the Ovid Full Text or citation:

[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

46.

Impressive Performance: New Disposable Digital Ureteroscope Allows for Extreme Lower Pole Access and Use of 365 mum Holmium Laser Fiber.

Leveillee RJ, Kelly EF

Ovid MEDLINE(R) ALL

Journal of Endourology Case Reports. 2(1):114-6, 2016.

[Case Reports]

UI: 27579436

BACKGROUND: Since the development of the first flexible ureteroscope, in 1964, technological advances in image quality, flexibility, and deflection have led to the development of the first single-use digital flexible ureteroscope, LithoVue TM (Boston Scientific, Marlborough, MA). With respect to reusable fiber-optic and now digital ureteroscopes, there is an initial capital cost of several thousand dollars (USD) as well as, controversy regarding durability, the cost of repairs and the burdensome reprocessing steps of ureteroscopy. The single-use LithoVue eliminates the need for costly repairs, the occurrence of unpredictable performance, and procedural delays. Renal stones located in the lower pole of the kidney can be extremely challenging as extreme

deflections of greater than 160degree are difficult to maintain and are often further compromised when using stone treatment tools, such as laser fibers and baskets. This case describes an initial use of the LithoVue digital disposable ureteroscope in the effective treatment of lower pole calculi using a 365 mum holmium laser fiber.

CASE REPORT: A 35-year-old female, with a medical history significant for chronic bacteriuria, and recurrent symptomatic culture proven urinary tract infections, underwent localization studies. Retrograde ureteropyelography demonstrated two calcifications adjoining, measuring a total of 1.4 cm, overlying the left renal shadow. Urine aspirated yielded clinically significant, >100,000, Escherichia coli and Streptococcus anginosus bacteriuria, which was felt to be originating from the left lower calix. This case used the newly FDA-approved LithoVue flexible disposable ureteroscope. The two stones were seen using the ureteroscope passed through an ureteral access sheath in the lower pole calix. A 365 mum holmium laser fiber was inserted into the ureteroscope and advanced toward the stones. There was no loss of deflection as the ureteroscope performed reproducibly. The laser was used for more than 4000 pulses at 15 W, producing mucoid debris and fragments. A 1.9F nitinol basket was, then, used to extract the fragments, and the patient was rendered stone free. Treatment success was confirmed by plain abdominal film obtained 1 week after stent removal.

CONCLUSION: The LithoVue system single-use digital flexible ureteroscope provides an economical advantage over both reusable digital and fiber-optic ureteroscopes. The LithoVue system uses the enhanced image resolution of the digital complementary metal oxide semiconductor imager, similar to other reusable digital ureteroscopes, while maintaining the small ureteroscope size of a flexible fiber-optic ureteroscope, allowing for consistent and effective lower pole access. Deflection characteristics are maintained even when thicker laser fibers are passed through the working channel.

Version ID

1

Status

PubMed-not-MEDLINE

Authors Full Name

Leveillee, Raymond J, Kelly, Emily Fell

Institution

Leveillee, Raymond J. Department of Urology, Florida Atlantic University, Charles E. Schmidt College of Medicine, Bethesda Hospital East, Boynton Beach, Florida. Kelly, Emily Fell. Department of Urology, Florida Atlantic University, Charles E. Schmidt College of Medicine, Bethesda Hospital East, Boynton Beach, Florida.

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4996608>

Year of Publication
2016

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[SFX](#)

47.

Combined Endoscopic and Percutaneous Retrieval of a Retained 4-Wire Ureteral Stone Basket.

Kaplan AG, Preminger GM, Lipkin ME

Ovid MEDLINE(R) ALL

Journal of Endourology Case Reports. 1(1):3-5, 2015.

[Case Reports]

UI: 27579372

Complex endourologic procedures may require the use of a combined ureteroscopic and percutaneous approach. Endoscopic removal of a retained 4-wire ureteral stone basket is particularly complex, as broken tines can potentially injure the ureter if the basket is removed in a retrograde manner. The patient in this case presented with a ureteral stone basket embedded within the urothelium of the upper pole of the kidney. Holmium laser incision of the overlying urothelium allowed retrieval of the basket, although the tines were broken. Endoscopically guided percutaneous access to the kidney was obtained to allow for direct passage of the retained basket out of a nephrostomy sheath, thereby protecting the kidney.

Version ID

1

Status

PubMed-not-MEDLINE

Authors Full Name

Kaplan, Adam G, Preminger, Glenn M, Lipkin, Michael E

Institution

Kaplan, Adam G. Division of Urologic Surgery, Duke University Medical Center, Durham, North Carolina. Preminger, Glenn M. Division of Urologic Surgery, Duke University Medical Center, Durham, North Carolina.

Lipkin, Michael E. Division of Urologic Surgery, Duke University Medical Center, Durham, North Carolina.

PMC Identifier

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4996564>

Year of Publication

2015

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[SFX](#)

48.

[Ureterorenoscopy with a flexible instrument]. [Italian]

Zanin M, Ruggera L, Beltrami P, Zattoni F

Ovid MEDLINE(R) ALL

Urologia (Treviso). 74(3):148-51, 2007 Jul-Sep.

[English Abstract. Journal Article]

UI: 21086392

Flexible ureterorenoscopy should be routinely used at the Urological Centers that deal with urinary stones. Flexible instruments should be used for both diagnostic and therapeutic purposes, allowing a safe exploration of the whole upper urinary tract. Thanks to their flexibility and to the active and passive deflection of their distal part, these instruments allowed to successfully treat several difficult situations, such as renal caliceal calculi in the lower calices or even in some middle/upper calices or in horseshoe kidneys. The therapeutic potential of this approach is enhanced by the large availability of ancillary instrumentation, such as baskets, grasps, holmium laser fibers, etc, which is continuously growing. On the other side, a steep learning curve of the technique is usually required for the surgeon. Furthermore, the intrinsic fragility of the instrument

components and a potentially lower quality, when compared to that of the rigid and semi-rigid ureteroscopes, should be considered.

Version ID

1

Status

PubMed-not-MEDLINE

Authors Full Name

Zanin, M, Ruggera, L, Beltrami, P, Zattoni, F

Year of Publication

2007

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[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

49.

Retrograde flexible ureteroscopic approach for pyelocaliceal calculi.

Geavlete P, Seyed Aghamiri SA, Multescu R

Ovid MEDLINE(R) ALL

Urology Journal. 3(1):15-9; discussion 19, 2006 Winter.

[Journal Article]

UI: 17590847

INTRODUCTION: Our goal was to investigate the efficacy of flexible ureteroscopy (FU) in the treatment of pyelocaliceal calculi.

MATERIALS AND METHODS: Between September 2002 and December 2004, a total of 41 patients with multiple (23 cases), pelvic (7 cases), and inferior caliceal (11 cases) SWL-resistant calculi underwent FU. We used a 7.5-F flexible ureteroscope with pressure irrigation and electro-hydraulic lithotripsy. The fragments were retrieved with triradiate graspers or tipless baskets.

RESULTS: A double J stent had been previously placed in 34% of the patients. Dilation of the ureteral orifice was necessary in 9.8%. The location of the calculi was renal pelvis, inferior calyx,

and pelvis and calyces in 7, 11, and 23 patients, respectively. The median operative time was 64 minutes for pyelocaliceal, 46 minutes for pelvic, and 39 minutes for inferior caliceal calculi.

Complete stone clearance or good fragmentation (fragments less than 3 mm) was obtained in 71% of patients (57% for pyelocaliceal, 87% for pelvic, and 71% for inferior caliceal calculi). A successful outcome was achieved in 78%, 72%, and 49% for calculi sized 10 mm or smaller, 11 mm to 20 mm, and greater than 20 mm, respectively. Two or more procedures were required in 11 patients (27%). The complication rate was 7.3% (hematuria, persistent renal colic, and hyperthermia).

CONCLUSION: Our experience shows that FU can be an effective approach in selected patients, especially those with kidney calculi that are resistant to SWL. However, percutaneous approach is a better alternative for calculi greater than 20 mm.

Version ID

1

Status

PubMed-not-MEDLINE

Authors Full Name

Geavlete, Petrisor, Seyed Aghamiri, Seyed Abdulah, Multescu, Razvan

Institution

Geavlete, Petrisor. Department of Urology, St John Clinical Emergency Hospital, Bucharest, Romania.

Year of Publication

2006

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Link to the External Link Resolver:

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50.

Flexible ureterorenoscopy (URS): technique and results.

Cansino Alcaide JR, Reinoso Elbers J, Lopez Sanchez D, Perez Gonzalez S, Rodriguez, Aguilera Bazan A, Rando Tous A, Hidalgo Togores L, De La Pena Barthel J
Ovid MEDLINE(R) ALL

Archivos Espanoles de Urologia. 63(10):862-70, 2010 Dec.

[Journal Article]

UI: 21187569

OBJECTIVES: This paper has two main objectives: First, to expose the URS technique used in our Department because there are important differences with respect to others centres published, explaining same aspect that can benefit to the better development of the technique. Second, we present the results of a series of 100 cases. Flexible ureterorenoscopy (Flex URS) has been little used to date, mainly because of the technical difficulties created by the deficient quality of the instruments used, such as ureteroscopes offering scant visibility, poor illumination, a small working channel, deficient quality of the forceps and baskets, etc.

METHODS: We present our recent series of flexible URS for the treatment of renal lithiasis. We performs a retrospective analysis of this treatment corresponding to the period between January 2007 and March 2010. In this period we have treated 100 patients. The medium size of the stone treated is 1.5cm (0.5-6cm) and we used ureteroscopic protector sheath in all cases. The lithotripter system used in all cases was Ho:YAG Laser with 200 and 365 micras fibers

RESULTS: The stone-free rate (SFR) in the immediate postoperative period was 77% (77/100 patients). Residual stones, defined as stone fragments visualized in the operating room via fluoroscopy and directly with the flexible ureteroscope. Three months after surgery, the SFR was 92.7% (89/96 patients) confirmed by intravenous urography. Regarding complications, we had 5 patients with ureteral lesions during protector sheath pass and 9 patients that presented at the emergency room with pain secondary to the double J catheter.

CONCLUSIONS: Flexible URS for of renal lithiasis can be defended in stones measuring up to 2 cm in diameter, based on our treatment algorithm.

Version ID

1

Status

MEDLINE

Authors Full Name

Cansino Alcaide, Jose Ramon, Reinoso Elbers, Javier, Lopez Sanchez, David, Perez Gonzalez, Sonia, Rodriguez, Aguilera Bazan, Alfredo, Rando Tous, Alberto, Hidalgo Togores, Luis, De La Pena Barthel, Javier

Institution

Cansino Alcaide, Jose Ramon. Urology Department, Hospital Universitario La Paz, Madrid, Spain.

Year of Publication
2010

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[Click here for full text options](#)

Link to the External Link Resolver:
[SFX](#)

51.

Retrieval methods for urinary stones.
Marickar YM, Nair N, Varma G, Salim A
Ovid MEDLINE(R) ALL
Urological Research. 37(6):369-76, 2009 Dec.
[Journal Article]
UI: 19834701

This paper attempts to assess the current status of the various modalities of available treatment for urinary stone disease in the Kerala scenario. A total of 300 patients who attended the stone clinic with urinary stone disease and had stones retrieved by different means were selected for the study. Their clinical symptoms, demographic profile, size, number and position of stones, metabolic profiles, retrieval modalities and end result of treatment in terms of stone clearance were assessed. Instances of failure, incomplete clearance and complication events were noted. Based on the experiences, a flowchart was created for appropriate decision-making in urinary stone management. The modalities of retrieval included nephrectomy, nephrolithotomy, pyelonephrolithotomy, extended pyelolithotomy, pyelolithotomy, ureterolithotomy, cystolithotomy, urethrolithotomy, ESWL, PCNL, URS, cystolithotripsy, urethrolithotripsy and spontaneous passage. The clearance rate of stone was maximum in open surgery. The extent of stone clearance by ESWL depended on various factors. PCNL was mostly limited by the difficulties in achieving puncture at the stone site. Availability of a variety of flexible nephroscopes also altered the success rate of the procedure. There were good success rates in pushing stones from the ureter to the pelvis followed by PCNL. In patients who had successful PCNL, postoperative morbidity was significantly reduced in terms of the number of days of hospitalization, time taken

for return to work, absence of urinary leak, site infection, urinoma formation and urinary tract infection. URS was performed in many patients and stones retrieved. However, the indication for the procedure remains doubtful as the size of most of the stones thus retrieved was less than 6 mm. These would have passed out spontaneously or with chemotherapeutic support. URS, lithotripsy and basketting were confronted by upward migration of stones to the kidney, requiring further procedures for retrieval. Introduction of double J stents helped in relieving urinary obstruction, particularly in patients presenting with anuria, but retained stents, forgotten stents and failed stone retrieval were common following the procedure. The procedure of URS was simplified by the presence of dilated ureter in spontaneous stone passers or those with distal obstruction and proximal dilatation. It is concluded from the study that open surgery still remains the sheet anchor of treatment of urinary stones in many patients in Kerala. Newer lesser invasive procedures should be ethically selected. Decisions should be patient based, taking into consideration the economic feasibility for the procedure proposed.

Version ID

1

Status

MEDLINE

Authors Full Name

Marickar, Y M Fazil, Nair, Nandu, Varma, Gayathri, Salim, Abiya

Institution

Marickar, Y M Fazil. Department of Surgery, Zensa Hospital, Trivandrum, 695009, India.

fazilmarickar@hotmail.com

Year of Publication

2009

Link to the Ovid Full Text or citation:

[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

A novel stone retrieval basket for more efficient lithotripsy procedures.

Salimi N, Mahajan A, Don J, Schwartz B

Ovid MEDLINE(R) ALL

Journal of Medical Engineering & Technology. 33(2):142-50, 2009.

[Journal Article. Research Support, Non-U.S. Gov't]

UI: 19085204

This paper presents the development of an improved stone retrieval device that uses a newly designed cage of Nitinol wires encompassing a mesh basket made of a material that is laser resistant. Current methods to extract large stones involve imaging, using a laser to fragment the stones and then using existing cage-like baskets to trap the fragments individually and extracting them one at a time. These procedures are tedious, and may result in leaving some fragments behind that can reform causing the need for another procedure. The device presented in this paper will have a mesh-like sack which will consist of a laser resistant material of polytetrafluoroethylene (PTFE) enclosed within a newly designed Nitinol cage. Two alternate designs are provided for the cage in this paper. The handle of the device is revised to allow for a 3 Fr (1 mm) opening such that a laser's fiber optic cable can enter the device. Using this device a laser can be used to fragment the stone, and all the fragments are retained in the basket in both the design options. The basket can then be retracted allowing for the retrieval of all the fragments in one shot. The stone retrieval basket presented in this paper will significantly improve the efficiency and effectiveness of lithotripsy procedures for removal of large kidney and biliary tract stones.

Version ID

1

Status

MEDLINE

Authors Full Name

Salimi, N, Mahajan, A, Don, J, Schwartz, B

Institution

Salimi, N. Department of Mechanical Engineering and Energy processes, Southern Illinois University, Carbondale, 62901, USA.

Year of Publication

2009

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Link to the External Link Resolver:

[SFX](#)

53.

Retrieval of migrated ureteral stents by coaxial cannulation with a flexible ureteroscope and paired helical basket.

Meeks JJ, Helfand BT, Thaxton CS, Nadler RB

Ovid MEDLINE(R) ALL

Journal of Endourology. 22(5):927-9, 2008 May.

[Journal Article]

UI: 18429684

PURPOSE: Retrieval of a proximally migrated ureteral stent is a technically challenging endoscopic procedure. We describe the use of a paired wire helical stone retrieval basket through a flexible ureteroscope to remove proximally migrated ureteral stents.

MATERIALS AND METHODS: Five ureteral stents were lost in the proximal (1) and distal (4) ureter after lithotripsy or stent exchange. Once the location of the distal aspect of the ureteral stent was identified by either fluoroscopy or ureteroscopy, a safety guidewire was placed alongside the migrated stent. A flexible ureteroscope was brought to the distal end of the stent under direct visualization. Through the working port of the ureteroscope, the paired wire helical basket was deployed to grasp or coaxially cannulate the lumen of the migrated stent. Once inside the stent, the basket was then opened. The outward resistance of the deployed basket is sufficient to provide enough lateral force to reposition the stent into the bladder.

RESULTS: All stents were successfully retrieved without complication. No patient had visual evidence of ureteral injury, and all patients were discharged on the same day as their procedure.

CONCLUSION: While proximal migration of a ureteral stent is usually caused by technical error, the ideal technique to reposition the stent should require the least time, trauma to the ureter, and expense to the patient. We describe a simple technique to retrieve migrated stents anywhere along the urinary tract.

Version ID

1

Status

MEDLINE

Authors Full Name

Meeks, Joshua J, Helfand, Brian T, Thaxton, C Shad, Nadler, Robert B

Institution

Meeks, Joshua J. Department of Urology, Northwestern University, Feinberg School of Medicine, Chicago, Illinois 60611, USA.

Year of Publication

2008

Link to the Ovid Full Text or citation:

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54.

First digital flexible ureterorenoscope: initial experience.

Mitchell S, Havranek E, Patel A

Ovid MEDLINE(R) ALL

Journal of Endourology. 22(1):47-50, 2008 Jan.

[Journal Article]

UI: 18315473

BACKGROUND: Flexible ureterorenoscopy is a minimally invasive procedure that is rapidly gaining popularity as a treatment for patients with upper urinary tract lithiasis. One of the main drawbacks is the limited visualization imposed by fiberoptic technology in an endoscope, often only 7 to 8F and the fragility of fiber-based optics in a flexible endoscope.

MATERIALS AND METHODS: We report our initial experience with digital flexible URS and holmium laser lithotripsy using digital image capture in three patients. Two patients had upper tract calculi (1 cm lower pole calculus and 8 mm caliceal diverticular stone, respectively), and one patient underwent diagnostic URS.

RESULTS: After basket capture and intrarenal relocation of the lower pole stone, complete stone destruction was achieved. Similarly, the caliceal diverticular stone was destroyed after holmium laser incision of the caliceal diverticulum. Remarkable improvement in image quality was observed throughout the procedures in comparison with current fiberoptic image acquisition.

Minor image interference was noted during fluoroscopic screening, which increased slightly during laser activation.

CONCLUSIONS: The first digital flexible ureterorenoscope provided excellent image quality and zoom capability, with a substantial improvement compared with fiberoptic technology. It does not require a separate light source and is an important step for the continued evolution of flexible URS as a therapeutic modality for upper urinary tract pathology.

Version ID

1

Status

MEDLINE

Authors Full Name

Mitchell, Stephen, Havranek, Erik, Patel, Anup

Institution

Mitchell, Stephen. St. Mary's Hospital, St. Mary's Campus, Praed Street, London, U.K.

anup.patel@imperial.ac.uk

Year of Publication

2008

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

[SFX](#)

55.

Risk of collateral damage to endourologic tools by holmium:YAG laser energy.

Honeck P, Wendt-Nordahl G, Hacker A, Alken P, Knoll T

Ovid MEDLINE(R) ALL

Journal of Endourology. 20(7):495-7, 2006 Jul.

[Evaluation Study. Journal Article]

UI: 16859463

BACKGROUND AND PURPOSE: Today, the holmium:YAG laser is the gold standard in endourologic stone treatment because of its high efficacy. However, guidewires and stone-extraction tools often are close to the fiber and may be damaged accidentally by the laser. The aim of our study was to evaluate the duration of laser application required to disrupt wires at different energy settings.

MATERIALS AND METHODS: Two standard wires (0.035-inch guidewire and 0.025-inch hydrophilic Terumo wire) and two baskets (1.9F Nitinol tipless and 3F stone extraction) were investigated. We used a holmium:YAG laser (Auriga; Wavelight Laser Technologie AG, Erlangen, Germany) and two fibers (230 and 365 microm) at 800 and 2000 mJ and a 5-Hz pulse rate. The laser was brought into direct contact with the wires.

RESULTS: The average time required for transection was 55 to 103 seconds for a safety wire. The Terumo wire broke after 20 to 40 seconds of direct laser application; 15 to 34 seconds was required for a Dormia basket. Thin Nitinol basket wires were disrupted after only 1 to 4 seconds. One- and two-factorial variance analysis showed a high degree of significance ($P < 0.0001$) of the energy level and type of wire.

CONCLUSION: The disruption of stone-extraction tools occurs in a remarkably short time with laser exposure, especially in case of Nitinol baskets, whereas guidewires are more resistant. Attention should be paid to avoiding contact of laser energy with wires and baskets during stone fragmentation.

Version ID

1

Status

MEDLINE

Authors Full Name

Honeck, Patrick, Wendt-Nordahl, Gunnar, Hacker, Axel, Alken, Peter, Knoll, Thomas

Institution

Honeck, Patrick. Department of Urology, Mannheim University Hospital, Mannheim, Germany.

Patrick.honeck@uro.ma.uni-heidelberg.de

Year of Publication

2006

Link to the Ovid Full Text or citation:

[Click here for full text options](#)

Link to the External Link Resolver:

56.

Comparison of flexible grasping forceps and stone basket for removal of retracted ureteral stents.

Nagele U, Praetorius M, Schilling D, Stenzl A, Anastasiadis AG

Ovid MEDLINE(R) ALL

Journal of Endourology. 20(6):418-22, 2006 Jun.

[Case Reports. Journal Article]

UI: 16808656

BACKGROUND: Ureteral-stent dislocation can occur either during positioning or postoperatively. Grasping the distal end of the stent and removing it depends on the angulation between the extraction device and the stent, the size and length of the instrument, and the force of the branches and resistance of the dislocated stent.

PATIENTS AND METHODS: Six cases of challenging stent removal are presented, and details of the surgical technique are described. By in-vitro testing, we investigated the deflection of flexible cystoscopes and ureteroscopes using forceps or a four-wire stone basket, the ability to grasp a stent depending on the angle between the stent axis and the extraction device, and the force that can be applied on the stent with the different devices.

RESULTS: In all cases, it was possible to extract the stent with a stone basket. In an in-vitro setting, maximum extraction forces, measured with a macro scale, were 1.3 kg (cystoscopic forceps) and 0.4 kg (ureteroscopic forceps) until the forceps slipped off the stent. In the same setting, a rupture of the wires of the 1.9F stone basket occurred at 0.8 kg, whereas with a 2.4F basket, a force of 1.9 kg led to rupture of the stent, leaving the basket intact.

CONCLUSIONS: Using a stone basket instead of grasping forceps in difficult cases of dislocated stents opens new possibilities for their cystoscopic and ureteroscopic removal. Because the superiority of the basket is counterbalanced by its higher costs, we suggest the basket extraction method only in difficult cases.

Version ID

1

Status

MEDLINE

Authors Full Name

Nagele, Udo, Praetorius, Manuel, Schilling, David, Stenzl, Arnulf, Anastasiadis, Aristotelis G

Institution

Nagele, Udo. Department of Urology, University of Tuebingen, Germany. Udo.Nagele@med.uni-tuebingen.de

Year of Publication

2006

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

[SFX](#)

57.

Comparison of flexible ureteroscopes: deflection, irrigant flow and optical characteristics.

Abdelshehid C, Ahlering MT, Chou D, Park HK, Basillote J, Lee D, Kim I, Eichel L, Protsenko D, Wong B, McDougall E, Clayman RV

Ovid MEDLINE(R) ALL

Journal of Urology. 173(6):2017-21, 2005 Jun.

[Comparative Study. Journal Article]

UI: 15879808

PURPOSE: We measured and compared the deflection, irrigation flow rates, distortion, resolution and light transmission of new generation flexible ureteroscopes.

MATERIALS AND METHODS: Multiple characteristics of 5 flexible ureteroscopes (ACMI DUR-8 Elite, Olympus URF-P3, Storz 11278AU1 [Flex-X], Wolf 7330.072 and Wolf 7325.172) commonly available in the market were measured and compared. Measured data included active deflection, irrigation flow rates and optical characteristics. Each ureteroscope was evaluated with an empty working channel and with various accessories. Optical characteristics, specifically resolution and distortion, were measured using test targets (Edmund Optics, Barrington, New Jersey). Light transmission was also measured from the ureteroscope tip at 50% and 100% intensity. All 5 flexible ureteroscopes were tested in a laboratory setting using a Storz OR 1 system to capture the images.

RESULTS: For all 5 ureteroscopes the angle of deflection was most impaired by a 365 microm laser fiber probe and least impaired by a 2.2Fr nitinol basket. Among all 5 ureteroscopes irrigation

flow rate was most impaired with a 3.0Fr basket and least impaired with 200 microm laser fiber. The Wolf 7325.172 had the highest observed resolution of 25.39 lines per mm and the Wolf 7330.072 had the lowest distortion at 11.9%. The Karl Storz Flex-X and the ACMI DUR-8 Elite had the highest light output at 374 and 364 mV, respectively.

CONCLUSIONS: The various flexible ureteroscopes differ with regard to flow rates as well as degree of deflection with either an empty or an occupied working channel. The Wolf flexible ureteroscope with a slightly larger working channel and a fused quartz bundle provided for superior flow and better optical performance. However, the greatest amount of tip deflection and highest light output were found in the ACMI and Karl Storz flexible ureteroscopes.

Version ID

1

Status

MEDLINE

Authors Full Name

Abdelshehid, Corollos, Ahlering, Michael T, Chou, David, Park, Hyung Keun, Basillote, Jay, Lee, David, Kim, Isaac, Eichel, Louis, Protsenko, Dmitriy, Wong, Brian, McDougall, Elspeth, Clayman, Ralph V

Institution

Abdelshehid, Corollos. Department of Urology, University of California, Irvine, Irvine, California, USA.

Year of Publication

2005

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

[SFX](#)

58.

Baskets in the kidney: an old problem in a new situation.

Allen D, Hindley RG, Glass JM

Ovid MEDLINE(R) ALL

Journal of Endourology. 17(7):495-6, 2003 Sep.

[Case Reports. Journal Article]

UI: 14565881

A potential complication of using a zero-tip basket to remove stones from a lower-lower pole calix of the kidney is impaction in this position. We report an endourologic technique involving a hydrogel-coated ureteral dilator to facilitate closure of the wires and removal of the basket following lithotripsy to fragment the stone.

Version ID

1

Status

MEDLINE

Authors Full Name

Allen, Darrell, Hindley, Richard G, Glass, Jonathan M

Institution

Allen, Darrell. Department of Urology, Guy's Hospital, London, England.

richard.hindley@virgin.net

Year of Publication

2003

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

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59.

Spontaneous ureteral rupture: is immediate surgical intervention always necessary? Presentation of four cases and review of the literature. [Review] [25 refs]

Akpinar H, Kural AR, Tufek I, Obek C, Demirkesen O, Solok V, Gurtug A

Ovid MEDLINE(R) ALL

Journal of Endourology. 16(3):179-83, 2002 Apr.

[Case Reports. Journal Article. Review]

UI: 12028629

PURPOSE: We report our experience with spontaneous ureteral rupture (SUR) managed conservatively.

CASE REPORTS: Data on three men and one woman 53 to 89 years old (mean age 73) with SUR were retrospectively evaluated. The common complaint was sudden-onset abdominal and concomitant flank pain. On physical examination, all patients had abdominal tenderness and pain with costovertebral angle tenderness on the associated side. One patient had rheumatoid arthritis treated with corticosteroids, and one had carcinoma of the prostate. All patients had urinary extravasation on CT scans. Two patients had ureteral obstruction by stones, and another had bladder outlet obstruction secondary to prostate cancer. Interestingly, irrespective of the obstruction level, the rupture was near the ureteropelvic junction in all patients. The symptoms regressed within hours after basket catheterization and ureteral stent placement in one patient and close follow-up and supportive treatment in three patients. In two patients, disappearance of extravasation and reabsorption of perirenal fluid were confirmed by second- and third-day CT scans. The patients were followed for a mean of 17 (range 14-21) months without any problems.

CONCLUSIONS: We believe that SUR cases are more frequent than reported. It is the authors' opinion that if the clinical scenario is suspected in the acute phase and investigated by appropriate radiologic techniques, many more SUR cases will be diagnosed. Careful monitoring with supportive measures may be curative in the majority of the patients, obviating a surgical intervention. [References: 25]

Version ID

1

Status

MEDLINE

Authors Full Name

Akpınar, Haluk, Kural, Ali Rıza, Tufek, İlter, Obek, Can, Demirköken, Oktay, Solok, Vural, Gurtug, Adil

Institution

Akpınar, Haluk. Department of Urology, Kadir Has University, Istanbul, Turkey.

halukakpinar@lycos.com

Year of Publication

2002

Link to the Ovid Full Text or citation:

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60.

The broken stone basket: configuration and technique for removal.

Gallentine ML, Bishoff JT, Harmon WJ

Ovid MEDLINE(R) ALL

Journal of Endourology. 15(9):911-4, 2001 Nov.

[Journal Article]

UI: 11769845

PURPOSE: We investigated the ease of breakage of endoscopic stone baskets with the holmium:yttrium-aluminum-garnet (YAG) laser and their resultant configuration. More importantly, possible safe methods of retrieval were evaluated.

MATERIALS AND METHODS: Endoscopic stone baskets from Bard (Platinum Class 2.4F Flat and 3.0F Helical Wire), Cook (3.2F Captura, 3.2F Atlas, 3.0F N-Circle, 4.5F N-Force), and Microvasive (2.4F Zero Tip, 3.0F Gemini, 3.0F Segura) were broken once using the holmium:YAG laser. The energy (kJ) required to break one of the wires was recorded.

Configuration was documented using photographs. Baskets were disassembled and assessed for extraction through a 7F open-ended catheter, an 8F/10F set, and a 20F peel-away sheath.

RESULTS: Tipless baskets (N-Circle, Zero Tip) broke the easiest (range 0.02-0.03 kJ). Tipped baskets (Segura, Platinum Class Flat and Helical, Gemini, Captura, N-Force, Atlas) were more resistant, but all broke within the range (0.06-0.78 kJ) typically used for intracorporeal lithotripsy. Broken segments of wire tended to protrude outward, with tipless baskets having less change in configuration than tipped baskets. Tipless baskets could easily be pulled into any of the extracting devices, whereas tipped baskets could not.

CONCLUSIONS: Baskets break at typical holmium:YAG intracorporeal lithotripsy energy settings. Tipless baskets break easiest and assume a safer configuration. Tipless baskets are extracted easily through a 7F open-ended catheter, 8F/10F set, or 20F sheath, while tipped baskets are unable to be extracted through any of these.

Version ID

1

Status

MEDLINE

Authors Full Name

Gallentine, M L, Bishoff, J T, Harmon, W J

Institution

Gallentine, M L. Wilford Hall Medical Center, Lackland Air Force Base, TX 78236-5300, USA.

Year of Publication

2001

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

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61.

Ureteral access for upper urinary tract disease: the access sheath.

Monga M, Bhayani S, Landman J, Conradie M, Sundaram CP, Clayman RV

Ovid MEDLINE(R) ALL

Journal of Endourology. 15(8):831-4, 2001 Oct.

[Journal Article]

UI: 11724124

Ureteral access with the flexible ureteroscope remains a challenge for the urologist. The routine use of a newly developed, site-specific ureteral access sheath facilitates entry into the ureter for fragmentation and basket extraction of ureteral and renal calculi. The step-by-step technique of ureteral access with the Access Sheath is described.

Version ID

1

Status

MEDLINE

Authors Full Name

Monga, M, Bhayani, S, Landman, J, Conradie, M, Sundaram, C P, Clayman, R V

Institution

Monga, M. Department of Urology, University of Minnesota Medical School, Minneapolis, USA.

Year of Publication

2001

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

[SFX](#)

62.

Use of the holmium:YAG laser for the impacted stone basket.

Teichman JM, Kamerer AD

Ovid MEDLINE(R) ALL

Journal of Urology. 164(5):1602-3, 2000 Nov.

[Journal Article]

UI: 11025714

PURPOSE: During ureteroscopic basketing of ureteral calculi a stone may become engaged in the basket and the basket impacted in the ureter. We describe an endoscopic technique of managing the impacted basket and stone.

MATERIALS AND METHODS: The ureteroscope is back loaded off of the basket, and passed into the ureter beside the basket and stone. The holmium:YAG laser is used to irradiate a basket wire, fracturing the wire and releasing the stone. The basket is removed and the stone managed by holmium:YAG lithotripsy.

RESULTS: We successfully treated 3 consecutive patients with this technique. No injuries were observed.

CONCLUSIONS: The holmium:YAG laser may be used to free an impacted stone basket containing a ureteral calculus.

Version ID

1

Status

MEDLINE

Authors Full Name

Teichman, J M, Kamerer, A D

Institution

Teichman, J M. Division of Urology, University of Texas Health Science Center, San Antonio, Texas, USA.

Year of Publication

2000

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

[SFX](#)

63.

Management of entrapped ureteral stone baskets.

O'Connor RC, Gerber GS

Ovid MEDLINE(R) ALL

Techniques in Urology. 6(3):231-3, 2000 Sep.

[Case Reports. Journal Article]

UI: 10963498

Entrapped stone baskets can occur and can lead to significant ureteral injury and long-term morbidity. We describe two patients in whom semirigid ureteroscopy was used to facilitate safe removal of impacted baskets from the ureter.

Version ID

1

Status

MEDLINE

Authors Full Name

O'Connor, R C, Gerber, G S

Institution

O'Connor, R C. Department of Surgery, University of Chicago Pritzker School of Medicine, Illinois 60637, USA.

Year of Publication

2000

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

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64.

Flexible ureterorenoscopy for the treatment of refractory upper urinary tract stones.

Menezes P, Dickinson A, Timoney AG

Ovid MEDLINE(R) ALL

BJU International. 84(3):257-60, 1999 Aug.

[Journal Article]

UI: 10468717

OBJECTIVE: To report our experience of using flexible ureterorenoscopy for upper urinary tract stones.

PATIENTS AND METHODS: Thirty-seven patients (13 females, 24 males, mean age 48 years, range 10-76) with upper urinary tract stones not responding to other treatments had their residual symptomatic stones treated through a 9.3 F flexible ureterorenoscope. Electrohydraulic lithotripsy (EHL) was used to fragment the stones and a basket or a grasper used to retrieve the fragments.

RESULTS: Twenty-three patients were completely freed of stone and a further five had asymptomatic residual fragments of < 5 mm. Of 15 patients with ureteric stones, 14 were rendered stone-free at the end of the procedure and 14 of the 22 patients with kidney stones were treated successfully; 80% of the lower calyceal stones were treated successfully and a firm decision was possible on the further management of the remaining stones. There were no major complications.

CONCLUSION: Flexible ureterorenoscopy should be considered in patients with symptomatic upper ureteric or renal stones refractory to other treatments, but the instrumentation is expensive and delicate, and its use should be reserved for such cases.

Version ID

1

Status

MEDLINE

Authors Full Name

Menezes, P, Dickinson, A, Timoney, A G

Institution

Menezes, P. Department of Urology, Southmead Hospital and Bristol Urological Institute, Bristol, UK.

Comments

Comment in (CIN)

Year of Publication

1999

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

[SFX](#)

65.

Ureteroscopic lithoclast lithotripsy: a cost-effective option.

Tan PK, Tan SM, Consigliere D

Ovid MEDLINE(R) ALL

Journal of Endourology. 12(4):341-4, 1998 Aug.

[Comparative Study. Journal Article]

UI: 9726400

Seventy-four consecutive cases of ureteral stones listed for ureteroscopic lithotripsy were studied prospectively. In all cases, the Wolf 7.5F or 9F ureteroscope was used in conjunction with the

Swiss Lithoclast system. Dormia baskets were employed on four occasions to prevent forward propulsion of fragments. Ureteroscopic access to the stones was successful in 70 patients (95%). Lithoclast lithotripsy was successfully applied in 68 patients (92%), with complete fragmentation noted in 62 patients (91%), one requiring two sessions. The 6-week stone-free rate was 96% for these patients. Five patients with partial fragmentation had successful adjuvant SWL. The overall successful fragmentation rate was thus 84% (62 of 74) and 91% (67 of 74) in combination with adjuvant SWL. Cost analysis indicated a three-fold advantage for the Lithoclast over Candela lasertripsy. Ureteroscopic Lithoclast lithotripsy is a cost-effective treatment modality for ureteral stones.

Version ID

1

Status

MEDLINE

Authors Full Name

Tan, P K, Tan, S M, Consigliere, D

Institution

Tan, P K. Department of General Surgery, Tan Tock Seng Hospital, Singapore.

Year of Publication

1998

Link to the Ovid Full Text or citation:

[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

66.

Ureteral Stones Clinical Guidelines Panel summary report on the management of ureteral calculi.
The American Urological Association.

Segura JW, Preminger GM, Assimos DG, Dretler SP, Kahn RI, Lingeman JE, Macaluso JN Jr

Ovid MEDLINE(R) ALL

Journal of Urology. 158(5):1915-21, 1997 Nov.

[Guideline. Journal Article. Meta-Analysis. Practice Guideline]

UI: 9334635

PURPOSE: The American Urological Association convened the Ureteral Stones Clinical Guidelines Panel to analyze the literature regarding available methods for treating ureteral calculi and to make practice policy recommendations based on the treatment outcomes data.

MATERIALS AND METHODS: The panel searched the MEDLINE data base for all articles related to ureteral calculi published from 1966 to January 1996. Outcomes data were extracted from articles accepted after panel review. The data were then meta-analyzed to produce outcome estimates for alternative treatments of ureteral calculi.

RESULTS: The data indicate that up to 98% of stones less than 0.5 cm. in diameter, especially in the distal ureter, will pass spontaneously. Shock wave lithotripsy is recommended as first line treatment for most patients with stones 1 cm. or less in the proximal ureter. Shock wave lithotripsy and ureteroscopy are acceptable treatment choices for stones 1 cm. or less in the distal ureter.

CONCLUSIONS: Most ureteral stones will pass spontaneously. Those that do not can be removed by either shock wave lithotripsy or ureteroscopy. Traditional blind basket extraction, without fluoroscopic control and guide wires, is not recommended. Open surgery is appropriate as a salvage procedure or in certain unusual circumstances.

Version ID

1

Status

MEDLINE

Authors Full Name

Segura, J W, Preminger, G M, Assimos, D G, Dretler, S P, Kahn, R I, Lingeman, J E, Macaluso, J N Jr

Year of Publication

1997

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

[SFX](#)

67.

Ureteroscopic stone removal in the distal ureter. Why change?.

Netto Junior NR, Claro Jde A, Esteves SC, Andrade EF

Ovid MEDLINE(R) ALL

Journal of Urology. 157(6):2081-3, 1997 Jun.

[Comparative Study. Journal Article]

UI: 9146584

PURPOSE: We compared our experience with ureteroscopic stone basket manipulation under fluoroscopic guidance to ultrasound ureterolithotripsy for distal ureteral stone removal.

MATERIALS AND METHODS: Retrospectively, we analyzed the medical records of 981 patients with ureteral calculi between January 1994 and December 1995, of whom 483 (49%) were treated for stones in the lower ureter and constituted our study group. The decision of when to perform lithotripsy (group 2) versus a basket procedure (group 1) was based on a prospective nonrandomized study and both groups were compared historically. All 322 patients in group 1 (mean age 49 years, range 14 to 86) primarily underwent ureteroscopic stone basket manipulation using the 4-wire Segura* basket. If the calculus could not be removed with the basket and another procedure was necessary, the case was considered a failure. The 161 patients in group 2 (mean age 37 years, range 14 to 74) underwent initially ultrasound ureterolithotripsy for stone fragmentation followed or not by removal of the fragments with the basket. Stone size did not differ significantly between groups 1 (mean 0.9 cm., range 0.6 to 1.7) and 2 (mean 0.8 cm., range 0.7 to 2.0). Ureteroscopy was performed in both groups with epidural anesthesia and on an outpatient basis in the majority of cases.

RESULTS: The stone-free rate after 1 procedure was 98.1 and 95.6% in group 1 and 2, respectively. For group 2 versus group 1 the operative time was longer (mean 50, range 25 to 90 versus mean 19 minutes, range 11 to 40, respectively, $p < 0.001$), the complication rate was greater (16.1 versus 4.3%, respectively, $p < 0.001$) and average hospital stay was longer (2.1 versus 0.15 day, respectively, $p < 0.001$).

CONCLUSIONS: Ureteroscopic stone treatment with basket manipulation under fluoroscopic guidance or ultrasound ureterolithotripsy provided a high stone-free rate. However, stone removal with the basket manipulation technique should be considered the first choice for treatment of small distal ureteral calculi based on the minimal morbidity, and short operative and recovery times.

Version ID

1

Status

MEDLINE

Authors Full Name

Netto Junior, N R, Claro, J de A, Esteves, S C, Andrade, E F

Institution

Netto Junior, N R. Division of Urology, Hospital Beneficencia Portuguesa de Sao Paulo, Brazil.

Comments

Comment in (CIN)

Year of Publication

1997

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

[SFX](#)

68.

The management of upper urinary tract calculi by piezoelectric extracorporeal shock wave lithotripsy in spinal cord injury patients.

Robert M, Bennani A, Ohanna F, Guiter J, Averous M, Grasset D

Ovid MEDLINE(R) ALL

Paraplegia. 33(3):132-5, 1995 Mar.

[Clinical Trial. Journal Article]

UI: 7784114

From May 1988 to September 1994, 15 spinal cord injury patients were treated by piezoelectric extracorporeal shock wave lithotripsy. Aged from 23 to 71 years (mean = 39), they presented with a total of 23 stones, of which 18 were located in the calyces, three in the renal pelvis and two in the proximal ureter. The maximum dimensions of calculi varied from 5 to 35 mm (mean = 11). Patients were placed in a dorsal decubitus position during the sessions, three being sedated with diazepam, while the other 12 remained unsedated. All were treated routinely with systemic antibiotics. Auxiliary procedures consisted of two pyelocalyceal flushings, three double J ureteral stenting and three ureteroscopies with fragment removal with a Dormia basket. No episode of

autonomic dysreflexia was observed. Short term side effects were limited to a few cases of gross haematuria which regressed spontaneously. Overall, eight successes (53%), and seven failures (47%), were registered. Of the failures, one was the result of a partial fragmentation, while six were related to intrarenal retention of residual fragments resulting in four cases in rapid recurrences. Extracorporeal shock wave lithotripsy can be easily applied to spinal cord injury patients. Its usefulness and limitations need to be well understood and a global consideration must be applied to the prevention and early detection of the upper urinary calculi in this exposed population of patients.

Version ID

1

Status

MEDLINE

Authors Full Name

Robert, M, Bennani, A, Ohanna, F, Guiter, J, Averous, M, Grasset, D

Institution

Robert, M. Service d'Urologie, Hopital Lapeyronie, Montpellier, France.

Year of Publication

1995

Link to the Ovid Full Text or citation:

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69.

[Transurethral ureterolithotripsy with rigid ureteroscope--efficacy of balloon dilation of ureteral orifice and intramural ureter]. [Japanese]

Kato N, Sugiyama T, Itoh M, Ono Y, Yamada S, Kamihira O, Ohshima S

Ovid MEDLINE(R) ALL

Nippon Hinyokika Gakkai Zasshi - Japanese Journal of Urology. 84(9):1590-4, 1993 Sep.

[English Abstract. Journal Article]

UI: 8411815

In order to minimize the late complications of transurethral ureterolithotripsy with a rigid ureteroscope such as distal ureteral stricture or vesicoureteral reflux, we have performed a balloon dilation of the ureteral orifice and the intramural ureter prior to insertion of a rigid ureteroscope in 62 cases with ureteral calculi between October 1986 and December 1991. A 7F balloon dilator (Bard Co. USA) was cystoscopically inserted into the ureter over a 0.038 inches Radifocus guide wire (Terumo Co., Japan) and then, a balloon was inflated to 15F size with saline using a 10 ml disposal syringe. Thereafter, an 11.5F rigid ureteroscope (Wolf Co., Germany) was inserted instead of a balloon dilator. The stone was disintegrated and removed by ultrasonic lithotripter, electrohydraulic lithotripter and/or basket forceps. The stone was removed completely in 45 cases (72.6%) and incompletely in 10 (16.1%). In 7 cases (11.3%), the stone removal was failed. Long-term follow up with an excretory urography obtained at 6 months or later in 31 cases showed no distal ureteral stricture. Voiding cystography was performed in 33 cases at a mean 2.8 months postoperatively and no vesicoureteral reflux was observed. In control group, 309 cases were treated with transurethral ureterolithotripsy without dilation of the ureteral orifice and the intramural ureter between the same period. A complete removal was achieved in 262 cases (84.8%) and an incomplete removal in 16 (5.2%). 31 (10%) was failed. Distal ureteral stricture due to this procedure was found in 3 cases (2.1%) in 141 long term followed up cases.(ABSTRACT TRUNCATED AT 250 WORDS)

Version ID

1

Status

MEDLINE

Authors Full Name

Kato, N, Sugiyama, T, Itoh, M, Ono, Y, Yamada, S, Kamihira, O, Ohshima, S

Institution

Kato, N. Department of Urology, Shizuoka Saiseikai General Hospital.

Year of Publication

1993

Link to the Ovid Full Text or citation:

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70.

[Emergency treatment of calculi of the lower ureter]. [French] Traitement en urgence des calculs du bas uretere. <Traitement en urgence des calculs du bas uretere.>

Benoit G, Bensadoun H, Bennani S, Blanchet P, Moukarzel M, Jardin A

Ovid MEDLINE(R) ALL

Presse Medicale. 22(33):1688-92, 1993 Oct 30.

[English Abstract. Journal Article]

UI: 8278322

Two-hundred patients were hospitalized as an emergency for lower ureteral calculi. Eighty-two of these patients has a less than 6 mm wide calculus which was evacuated by medical treatment; 5 had stagnant infected urine which was drained by endoprosthesis; 113 had an obstructive calculus which resisted medical treatment and was treated by ureteroscopy: the stone could be removed by means of a basket catheter in 58 cases, but this method failed in the other cases and the calculus has to be broken by laser. There were 6 failures due to the nature of the stone (monohydrated oxalate) in 3 cases and to technical laser problems in 3 cases. The success rate of ureteroscopy (basket catheter or laser) was 95 percent in patients whose pain had persisted under medical treatment.

Version ID

1

Status

MEDLINE

Authors Full Name

Benoit, G, Bensadoun, H, Bennani, S, Blanchet, P, Moukarzel, M, Jardin, A

Institution

Benoit, G. Service d'Urologie, Hopital de Bicetre, Le Kremlin-Bicetre.

Year of Publication

1993

Link to the Ovid Full Text or citation:

[Click here for full text options](#)

Link to the External Link Resolver:

71.

Developments in the ureteroscopes, techniques and accessories associated with laser lithotripsy.

Watson GM, Landers B, Nauth-Misir R, Wickham JE

Ovid MEDLINE(R) ALL

World Journal of Urology. 11(1):19-25, 1993.

[Clinical Trial. Comparative Study. Journal Article. Randomized Controlled Trial]

UI: 8098251

Two stages in the development of the technique of laser lithotripsy are described. In the first series, spanning 1985-1988, three consecutive groups of patients are compared. In the first 100 patients, 11.5-F ureteroscopes were used. Access on first retrograde attempt was successful in 73%; 3% developed strictures; the ureteric perforation rate was 7%; and 12% required nephrostomy drainage. These results contrast with those of the third group in this series, consisting of 200 patients using a miniaturised ureteroscope. Access on the first retrograde attempt was successful in 99%. There were no strictures, no perforations and no requirements for nephrostomy drainage. (The second group of 100 patients using a range of rigid ureteroscopes was intermediate in its complication rate: 2% developed strictures, the ureteric perforation rate was 3%, and 6% required nephrostomy drainage). In the second series, spanning 1989-1990, the procedures were performed by all grades of urologists using miniaturised endoscopes. An in-depth audit was performed and each patient was followed until completely clear of fragments. The stones were successfully accessed on the first attempt in 213 cases (89%). In group A (139 patients, no basket used) 32 renal units (23%) were cleared of stone fragments immediately following the procedure, rising to 78 units (56%) by 3 months and 99 units (71%) beyond 3 months follow-up. Some fragments remained in 40 renal units and were cleared by further ureteroscopy, ESWL or PCNL, with the exception of 1 patient who had small residual fragments despite ESWL for fragments flushed to the kidney.(ABSTRACT TRUNCATED AT 250 WORDS)

Version ID

1

Status

MEDLINE

Authors Full Name

Watson, G M, Landers, B, Nauth-Misir, R, Wickham, J E

Institution

Watson, G M. Institute of Urology, London, England, UK.

Year of Publication

1993

Link to the Ovid Full Text or citation:

[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

72.

Use of the pulsed dye laser and ultrasonic lithotripter for removal of multiple intrahepatic gallstones.

Flowers BF, Saslawsky MJ, Mathes GL, Tonkin AK

Ovid MEDLINE(R) ALL

Surgery, Gynecology & Obstetrics. 170(5):443-4, 1990 May.

[Case Reports. Journal Article]

UI: 1970197

Two established urologic modalities used for removal of kidney stones were applied in a complementary manner for percutaneous transhepatic removal of multiple intrahepatic gallstones. A pulsed dye laser was used through a flexible nephroscope to fragment a large impacted stone. A stone basket was used to remove stone fragments and a few small entrapped stones. Subsequently, an ultrasonic lithotripter carried by a rigid nephroscope was tried and found to be a much more efficient means of removing the remaining small stones.

Version ID

1

Status

MEDLINE

Authors Full Name

Flowers, B F, Saslawsky, M J, Mathes, G L, Tonkin, A K

Institution

Flowers, B F. Department of Surgery, Baptist Memorial Hospital Medical Center, Memphis, Tennessee.

Year of Publication

1990

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

[SFX](#)

73.

[Treatment of ureteral lithiasis using rigid ureteroscopy]. [Review] [28 refs] [French] Traitement des lithiases ureterales par ureteroscopie rigide. <Traitement des lithiases ureterales par ureteroscopie rigide.>

De Jong Z, Pontonnier F, Plante P, Centa F, Ioualalen A, Gautier JR

Ovid MEDLINE(R) ALL

Journal d Urologie. 95(6):337-41, 1989.

[English Abstract. Journal Article. Review]

UI: 2681434

The authors report 46 cases of rigid ureteroscopy for ureteral stone removal. Ureteroscopy procedures for extraction of lithiasis are the next-ones: stone forceps, stone basket, ultrasonic lithotripsy and electrohydraulic lithotripsy. Manipulation of calculi is done under direct vision. A success rate of ureteroscopy was of 89% (41 patients). All of the patients with stone removal failure underwent immediate operative intervention (open ureterolithotomy in 4 patients and ureteral reimplantation in 1). The best results were obtained for distal calculi (pelvic lithiasis): success rate of 91.4%. The success rate of lumbar lithiasis was of 87.5% and of iliac lithiasis of 66.7%. Complications did not preclude a successful stone manipulation. These results are compared with other series and procedures for stone extraction are discussed. [References: 28]

Version ID

1

Status

MEDLINE

Authors Full Name

De Jong, Z, Pontonnier, F, Plante, P, Centa, F, Ioualalen, A, Gautier, J R

Institution

De Jong, Z. Clinique Urologique, CHU Rangueil, Toulouse.

Year of Publication

1989

Link to the Ovid Full Text or citation:

[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

74.

[Rigid and flexible ureteroscopy. Apropos of 200 consecutive cases]. [French] Ureteroscopie rigide et souple. A propos of 200 cas consecutifs. <Ureteroscopie rigide et souple. A propos of 200 cas consecutifs.>

Flam T, Zerbib M, Steg A

Ovid MEDLINE(R) ALL

Chirurgie. 115(7):432-5, 1989.

[English Abstract. Journal Article]

UI: 2632155

191 patients underwent a total of 200 ureteroscopies. Indications for these were as follows: ureter stones (172 cases); ureteral anomalies undiagnosed by other methods (20 cases); therapeutic ureteroscopy (8 cases). Stones: ureteroscopy for stones was carried out using either a rigid instrument (156 cases) or a flexible ureteroscope (16 cases). The localization of the stones was pelvic (123 cases), iliac (18 cases) or lumbar (10 cases). The stones were either removed directly using the basket under visual control (74/139 cases), or removed by ultrasonic/laser fragmentation (65/139 cases). As regards the rigid ureteroscope, success rates were 89% (139/156); 15 patients required additional therapy. Repeated ureteroscopic interventions always provided positive results. As concerns flexible ureteroscopy, we only had one positive result; 15

failure cases warranted repeated additional treatments. In three instances, failure with flexible ureteroscopy was corrected by using the rigid device during the same surgical period. We observed a single case of major complication in this series, i.e., a laterovesical urinoma which necessitated surgical drainage and was linked to the lack of ureteral drainage following ureteroscopy. Diagnostic ureteroscopic examinations: in 20 instances, ureteroscopy allowed to diagnose with precision the ureteral abnormality. No complication was reported following diagnostic ureteroscopy. Therapeutic ureteroscopy: such interventions were carried out to introduce a guide into the renal cavities (3 cases); to remove a double J stent, the lower extremity of which had moved up into the ureter (3 cases); or to carry out endoscopic ureterotomy (2 cases). Ureteroscopy is a safe and reliable method for the treatment of ureteral stones, and more particularly of stones localized in the distal part of the ureter.(ABSTRACT TRUNCATED AT 250 WORDS)

Version ID

1

Status

MEDLINE

Authors Full Name

Flam, T, Zerbib, M, Steg, A

Year of Publication

1989

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

[SFX](#)

75.

[Transurethral uretero-lithotripsy of ureteral stones in Osaka City University]. [Japanese]

Kishimoto T, Sugimura K, Nakatani T, Yamamoto K, Yasumoto R, Wada S, Sakamoto W, Asakawa M, Nishikawa K, Ohyama A, et al

Ovid MEDLINE(R) ALL

Nippon Hinyokika Gakkai Zasshi - Japanese Journal of Urology. 80(12):1763-8, 1989 Dec.

[English Abstract. Journal Article]

UI: 2625824

During the 39 months since the introduction of transurethral lithotripsy (TUL) for the treatment of ureteral stones at our hospital in August 1985, TUL was performed a total of 200 times in 178 patients with ureteral stones. Among them, 111 patients had left ureteral stones and 65 had right ureteral stones, while 2 patients had ureteral stones in both sides. The stones were divided into upper ureteral stone (84 patients) and lower ureteral stone (94 patients) at above and below the iliac brim. 89% of the stones were less than 2 cm in diameter. Most of the patients were given lumbar anesthesia, and a guide wire was inserted into the ureter. The ureter was dilated with a ureteral bougie, and a 13F or 14F Storz ureteroscope was inserted. The stones were disintegrated by an ultrasound lithotripter and removed using forceps and a basket catheter. After the TUL procedure, a double J catheter was indwelled and removed within 5 days. The results were evaluated by DIP which was done 2 to 3 months after TUL. The success rate included residual stones less than 4 mm in diameter, as they could be spontaneously discharged. As a result, the success rate for upper ureteral stones was 53%, and it was higher for smaller stones. On the other hand, the success rate for lower ureteral stones was 85% and significantly higher. The main reasons for failure were the upper migration of the stones (60%) and inability to insert the ureteroscope up to the stone due to ureterostenosis and ureteral perforation (39%).

(ABSTRACT TRUNCATED AT 250 WORDS)

Version ID

1

Status

MEDLINE

Authors Full Name

Kishimoto, T, Sugimura, K, Nakatani, T, Yamamoto, K, Yasumoto, R, Wada, S, Sakamoto, W, Asakawa, M, Nishikawa, K, Ohyama, A

Year of Publication

1989

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

[SFX](#)

76.

[Antegrade endoscopic treatment of calculi of the ureter]. [French] Traitement endoscopique antegrade des calculs de l'uretere. <Traitement endoscopique antegrade des calculs de l'uretere.>

Viville C

Ovid MEDLINE(R) ALL

Journal d Urologie. 94(1):21-5, 1988.

[Comparative Study. English Abstract. Journal Article]

UI: 3392401

The author has treated 29 ureteric stones, situated in the lumbar ureter in 27 cases, via an antegrade endoscopic approach. On only one occasion, at the beginning of the series, the attempt failed due to loss of the nephrostomy tract. Another attempt failed in a case of an unusually hard stone in the pelvic segment of a congenital megaureter. In 18 out of 29 cases (62%), the stone was pushed back into the renal cavities and was extracted by percutaneous nephrotomy, in the absence of extracorporeal lithotripsy. The other 11 cases were treated by in situ lithotripsy (10 cases) or by Dormia basket extraction (1 case). Apart from the complete failures indicated above, there was also on partial failure following electric in situ lithotripsy in the iliac ureter. 26/29 cases were treated with complete success. There were no immediate complications and no cases of secondary stenosis. After a comparative analysis of the published series, the author concludes on the superiority of antegrade endoscopic treatment of lumbar ureteric stones over retrograde treatment by ascending ureteroscopy.

Version ID

1

Status

MEDLINE

Authors Full Name

Viville, C

Institution

Viville, C. Service d'Urologie, Clinique Bethesda, Strasbourg.

Year of Publication

1988

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77.

Ureteropyeloscopic removal of ureteral calculi.

Seeger AR, Rittenberg MH, Bagley DH

Ovid MEDLINE(R) ALL

Journal of Urology. 139(6):1180-3, 1988 Jun.

[Comparative Study. Journal Article]

UI: 2897476

Ureteroscopy has been used for the treatment of calculi throughout the ureter. The results of ureteroscopic stone removal were reviewed in 100 patients. Similar results were compared in 30 patients undergoing ureterolithotomy and 32 treated by basket manipulation. Success of ureteroscopic removal was related to the location of the calculus: 50 per cent in the proximal, 80 per cent in the mid and 99 per cent in the distal ureter. Hospital stay, costs and narcotic analgesic use were significantly less for ureteroscopic stone removal than for open surgical lithotomy. The success rate for ureteroscopic removal of distal calculi (99 per cent) was higher than for blind basketing procedures (59 per cent). Ureteroscopy should be considered the technique of choice for the removal of distal ureteral calculi. It is an acceptable alternative for treatment of calculi throughout the urinary tract.

Version ID

1

Status

MEDLINE

Authors Full Name

Seeger, A R, Rittenberg, M H, Bagley, D H

Institution

Seeger, A R. Department of Urology, Jefferson Medical College, Thomas Jefferson University, Philadelphia, Pennsylvania.

Year of Publication

1988

Link to the Ovid Full Text or citation:

[Click here for full text options](#)

Link to the External Link Resolver:

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78.

Forceps extraction of ureteral stones.

Daughtry JD, Bean WJ, Rodan BA

Ovid MEDLINE(R) ALL

Urology. 27(2):179-83, 1986 Feb.

[Case Reports. Journal Article]

UI: 3946044

Ureteroscopy and pyeloscopy in association with ultrasonic lithotripsy for extraction of ureteral stones has, in most instances, eliminated the need for open surgical intervention. Four ureteral stones were successfully extracted by the technique described using flexible cup biopsy forceps introduced through a Teflon sheath. This method was used when basket extraction, ureteroscopy, and other forms of endoscopic stone manipulation were unsuccessful. Two ureteral stones were removed by the transurethral route, and two were removed through a percutaneous nephrostomy tract. There has been little morbidity with this procedure, and patients have returned to normal activity within several days of hospital discharge.

Version ID

1

Status

MEDLINE

Authors Full Name

Daughtry, J D, Bean, W J, Rodan, B A

Year of Publication

1986

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

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79.

[Technic, failures and complications in the extraction of ureteral calculi using a rigid ureteroscope]. [French] Technique, echecs et complications de l'extraction des calculs de l'uretere par ureteroscopie rigide. <Technique, echecs et complications de l'extraction des calculs de l'uretere par ureteroscopie rigide.>

Vallancien G, Veillon B, Charton M, Brisset JM

Ovid MEDLINE(R) ALL

Annales d Urologie. 19(4):228-32, 1985.

[English Abstract. Journal Article]

UI: 3875309

The authors describe the technique for the removal of ureteral stones by ureteroscopy. They stress the need to use perfectly suitable instruments (ureteroscope, baskets and ultrasound or hydro-electric lithotrites), and the importance of extreme gentleness in the manipulations and great patience. The time taken to perform a simple ureterostomy should not be compared to the time necessary for a complex endoscopic extraction. The quality of the dilatation counts for three quarters of the success. Fluoroscopic monitoring facilitates the operation. Ureteral drainage is necessary in the case of a long or fairly traumatic operation, or if there is urinary infection. With these precautions, rigid ureteroscopy can be used for three quarters of ureteral stones. Only one serious complication was registered: the rupture of the pelvic ureter during the extraction of a voluminous lumbar stone.

Version ID

1

Status

MEDLINE

Authors Full Name

Vallancien, G, Veillon, B, Charton, M, Brisset, J M

Year of Publication

1985

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

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80.

[Removal of ureteral calculi by uteroscopy]. [French] Ablation des calculs ureteraux par ureteroscopie. <Ablation des calculs ureteraux par ureteroscopie.>

Vallancien G, Veillon B, Charton M, Brisset JM

Ovid MEDLINE(R) ALL

Presse Medicale. 14(16):889-92, 1985 Apr 20.

[English Abstract. Journal Article]

UI: 3158924

Ureteral stones can now be removed endoscopically, using a ureteroscope. This instrument, provided with a direct optic system and an operating tube, is introduced under general anaesthesia after the ureteral opening has been dilated and is pushed up until it reaches the stone which is then removed by means of a basket catheter or a forceps. Voluminous stones can be shattered in situ by ultrasounds or hydroelectric shock waves. Forty-three stones, representing 72% of all attempts, were removed by this method from 30 patients. There were 6 failures due to impassable vesico-ureteral opening, ureteral flexure and wedged in or ascended stone, and 4 complications including 2 cases where the basket catheter went under the mucosa and 1 case each of secondary urinoma and ureteral clotting. There was no perforation nor overt septic complication. Most stones were larger than 10 X 4.5 mm and were located in the pelvic or iliac part of the ureter. Infected stones can be removed endoscopically under antibiotic treatment and provided a draining catheter is left in place. Ureteroscopy notably reduces the need for ureteral lithotomy.

Version ID

1

Status

MEDLINE

Authors Full Name

Vallancien, G, Veillon, B, Charton, M, Brisset, J M

Year of Publication

1985

Link to the Ovid Full Text or citation:

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81.

[Ureteral lithiasis: excision by ureteroscopy]. [French] Les lithiases ureterales: exeresse par ureteroscopie. <Les lithiases ureterales: exeresse par ureteroscopie.>

Chailley J, Besancenez A

Ovid MEDLINE(R) ALL

Journal d Urologie. 89(9):639-41, 1983.

[Journal Article]

UI: 6674378

The authors report the first 6 cases in the world of removal of ureteric stones under visual control with the aid of a rigid ureteroscope . In 5 of the 6 cases, the authors were able to extract the stone endoscopically. The only failure was a case in which the stone was too large for the Dormia basket. The only source of difficulty was passing the ureteric meatus. A very small meatotomy may be required. Only the future will tell whether this results in reflux.

Version ID

1

Status

MEDLINE

Authors Full Name

Chailley, J, Besancenez, A

Year of Publication

1983

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82.

Initial content validation results of a new simulation model for flexible ureteroscopy: the key-box

Initial content validation results of a new simulation model for flexible ureteroscopy: the key-box

EBM Reviews - Cochrane Central Register of Controlled Trials

Journal of endourology / Endourological Society. 31(1):72-77, 2017.

[Article]

AN: CN-01411700

Purpose: We sought to test the content validity of a new training model for flexible ureteroscopy:

The Key-Box. Material and Methods: Sixteen medical students were randomized to undergo a 10-day training consisting of performing 10 different exercises aimed at learning specific movements with the flexible ureteroscope, and how to catch and release stones with a nitinol basket using the Key-Box (n = 8 students in the training group, n = 8 students in the nontraining control group).

Subsequently, an expert endourologist (O.T.) blindly assessed skills acquired by the whole cohort of students through two exercises on ureteroscope manipulation and one exercise on stone capture selected among those used for the training. A performance scale (1-5) assessing different steps of the procedure was used to evaluate each student. Time to complete the exercises was measured. Mann-Whitney Rank Sum test was used for comparisons between the two groups. Results: Mean scores obtained by trained students were significantly higher compared with those obtained by nontrained students (all $p < 0.001$). All trained students were able to complete the two exercises on ureteroscope manipulation within 3 minutes, whereas two students (25%) were not able to finish the exercise on stone capture. Conversely, four (50%) and six (75%) nontrained students were not able to finish one out of the two exercises on ureteroscope manipulation and the exercise on stone capture, respectively. The mean time to

complete the three exercises was 76.3, 69.9, and 107 and 172.5, 137.9, and 168 seconds in the trained and nontrained groups, respectively (all $p < 0.001$). Conclusions: The K-Box seems to be a valid easy-to-use training model for initiating novel endoscopists to flexible ureteroscopy.

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Institution

O. Traxer, Department of Urology, Tenon Hospital, Pierre and Marie Curie University, 4 rue de la Chine, Paris Cedex 20 75970, France. E-mail: olivier.traxer@tnn.aphp.fr

Publisher

Mary Ann Liebert Inc. (E-mail: info@liebertpub.com)

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83.

Efficacy and safety of basketing and dusting in the treatment of lower renal calyx calculi (≤ 2 cm) during flexible ureteroscopic lithotripsy: a prospective randomized controlled study

ChiCTR2100045324

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://trialssearch.who.int/Trial2.aspx?TrialID=ChiCTR2100045324>. 2021.

AN: CN-02349278 NEW

INTERVENTION: Dusting group:Stone dusting;Control group:The basketing lithotripsy,;

CONDITION: Renal calculi, PRIMARY OUTCOME: Free stone rate,; SECONDARY OUTCOME:

Time of operation;Endoscopic time;Broken stone time;UAS size;Postoperative

complications;Postoperative calculus removal status in hospital: stone fragments < 4 mm,;

INCLUSION CRITERIA: 1.Aged ≥ 18 years,; 2.Middle and lower calyx calculi with maximum diameter ≤ 2 cm,; 3.Signed the informed consent and volunteered to participate in the survey.

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84.

Therapeutic interventions for stones of the ureter A multicentre randomised controlled trial of extracorporeal shockwave lithotripsy, as first treatment option, compared with direct progression to ureteroscopic treatment, for ureteric stones

ISRCTN92289221

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://trialssearch.who.int/Trial2.aspx?TrialID=ISRCTN92289221>. 2013.

AN: CN-01806390

INTERVENTION: Participants will be randomly allocated to either ESWL or ureteroscopy. Extracorporeal shockwave lithotripsy (ESWL) involves generation of a shock-wave, external to the body, focused on the stone, causing it to fragment with the fragments subsequently passing spontaneously. A variety of systems (differing means of generating shock-waves, different focusing mechanisms) are available. It is routinely performed in an outpatient setting with pain relief or sedation as required. Recruitment will occur only in established centres with fixed-site lithotripters. This will allow some standardisation of protocols on times to treatment and ESWL delivery. Up to two sessions of ESWL will be considered as one intervention as per standard practice. Ureteroscopy is the use of small semi-rigid or flexible ureteroscopes, in conjunction with intracorporeal lithotripsy devices, such as the holmium laser, to directly visualise and fragment ureteric stones. Smaller stones, in the lower ureter, can often be removed intact using basketing devices. It is currently most often performed as a day-case procedure (but may require hospital admission depending on complexity) and usually requires general anaesthesia.,
CONDITION: Ureteric stone treatment ; Urological and Genital Diseases ; Ureteric stone,
PRIMARY OUTCOME: The study has a primary clinical and a primary economic outcome reflecting the multidimensional nature of the possible effects the intervention may have.; ; Clinical: Clearance of ureteric stones operationally defined as 'no further intervention required to facilitate stone clearance' up to 6 months from randomisation. ; ; Economic: Incremental cost per quality adjusted life years (QALYs) gained at 6 months from randomisation. QALYs are based on the responses to the EQ-5D.,
SECONDARY OUTCOME: Patient-reported, measured at pre and 1

week post intervention, 8 weeks and 6 months post randomisation;; 1. Severity of pain measured by the Numeric Rating scale (NRS); 2. Generic health profile measured by the SF-12 (8 weeks and 6 months only); 3. Health status measured by the EQ5D; 4. Use of analgesia; 5. Acceptability of received procedure (8 weeks and 6 months only); ; Clinical: Further interventions received, complications up to 6 months post randomisation ; ; Economic: NHS primary and secondary care use and costs up to 6 months, patient costs; incremental cost per surgical interventions averted., INCLUSION CRITERIA: 1. Presence of stone confirmed by Computed Tomography Scan of the Kidneys, Ureters and Bladder (CTKUB) 2. Patients with a ureteric stone requiring removal 3. Adults =16 years of age 4. Single ureteric stone requiring treatment 5. Suitable for either ESWL or ureteroscopic treatment 6. Capable of giving written informed consent, which includes adherence with the requirements of the trial.

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85.

miniaturised-percutaneous nephrolithotomy (PCNL) versus flexible ureteropyeloscopy for treating kidney stone disease A randomised controlled trial comparing mini-PCNL with flexible ureteropyeloscopy for urinary tract calculi

ACTRN12618000787280

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://trialssearch.who.int/Trial2.aspx?TrialID=ACTRN12618000787280>. 2018.

AN: CN-01900469

INTERVENTION: Description of intervention:, The intervention involves urinary tract calculi removal by one of two techniques that are described in detail below., 1. mini-PCNL, The patient is initially placed in lithotomy position under general or epidural anaesthesia and a 5 French ureteral catheter is placed up to the renal pelvis or onto the stone. The patient is then turned prone and a 19 gauge puncture needle is placed into the appropriate calyx under fluoroscopic guidance. A guidewire is inserted and fixed. and the puncture needle is then removed. After a 0.5-0.7 cm skin

incision, dilation of the percutaneous tract is performed serially over the guidewire with a fascial dilator to 16-22 Fr. A 12 French nephroscope is inserted into the kidney, and the holmium laser is applied for stone disintegration. Fragments are taken out by flushing or forceps. At the end of the surgery, a nephrotomy tube and a double J stent is placed at the surgeon's discretion. The stent is removed at 1 month using cystoscopy., 2. Flexible ureteropyeloscopy, The procedures are performed under general or epidural anaesthesia with the patient in lithotomy position. In some cases, a 6 French stent is placed 1 or 2 weeks before the procedure as a temporary measure to relieve acute obstruction from stones, infection, or uncontrolled pain due to stones; or to dilate the ureter of patients who have experienced unsuccessful insertion of ureteroscope before. If so, rigid ureteroscopy is performed to remove the pre-placed stent. Then a hydrophilic guidewire is placed to direct the placing of a ureteral access sheath measuring 12-14 French. Then the flexible ureteroscope is advanced through the sheath. The stones are fragmented with a holmium laser until debris below 4 mm is achieved. Fragments are removed with a basket as many as possible. A double-J stent is placed at the end of the procedure routinely and is removed at 1 month postoperatively., Frequency and duration of procedure:, Both interventions aim to fully clear the stone in a single session. Both procedures typically take 60 to 90 minutes to complete., Who will be administering the intervention:, Both interventions are performed by a consultant urologist. Dr Niall Davis will follow-up all patients that are recruited to monitor fidelity and objectively gather information on primary and secondary outcome variables., CONDITION: Kidney stone disease Nephrolithiasis Urolithiasis, PRIMARY OUTCOME: To compare stone-free rates (SFRs) and complication rates for both techniques. This is a composite primary outcome., , , ; Complications will be classified according to the validated Clavien-Dindo grading system.*Clavien-Dindo grading will be measured from data recorded in patients' clinical notes, nursing notes and medication records., , , ; Postoperative stone free rate will be evaluated at 1 month with a non-contrast CT KUB. This is standard practice for follow-up of urinary tract calculi for both techniques in our department. The success of treatment is defined as stone-free or residual fragments <4 mm at the 1-month postoperative visit., , , ; * de la Rosette JJ, Opondo D, Daels FP, Giusti G, Serrano A, Kandasami SV, Wolf JS Jr, Grabe M, Gravas S, Group CPS (2012) Categorisation of complications and validation of the Clavien score for percutaneous nephrolithotomy. Eur Urol 62(2):246- 255., SECONDARY OUTCOME: To compare analgesic requirements between both techniques. This data will be recorded from patient's medication records (i.e. Drug Kardex) To compare Haemoglobin drop between both techniques. This will be recorded on a serum Full Blood Count (FBC) sample. Patients routinely have an FBC performed before and after both procedures have taken place To compare operative duration both both techniques. This will be recorded in minutes from when the patient has been anaesthetised until the surgeon inform the anaesthetist that the procedure has been completed., , , ; There is a stopwatch present in each operation theatre for measuring operative duration. To compared

duration of inpatient stay with both techniques. This outcome will be assessed from admission and discharge time points that are routinely recorded in patients' hospital records, INCLUSION CRITERIA: RECRUITMENT PROCEDURE, Eligible patients are consecutive patients who presented to the urology outpatient department with a proximal ureteric and/ or greater than 1 intrarenal calculus that is greater than 0.5cm requiring intervention due to symptoms such as pain or recurrent urinary tract infections., and in whom flexible ureteropyeloscopy or mini-PCNL is planned., INCLUSION CRITERIA, Eligible patients are patients with proximal ureteral or intrarenal stones greater than 0.5 cm in size referred to our institute will be considered for this study. The proximal ureter is defined as the portion extending from the ureteropelvic junction to the lower border of the fourth lumbar vertebra.

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86.

The role of surgical treatment on lower pole renal stones A prospective randomized comparison among shock wave lithotripsy, percutaneous lithotripsy and retrograde intrarenal surgery for lower calyceal stones less than 2 cm: a multicenter experience

ISRCTN55546280

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://trialsearch.who.int/Trial2.aspx?TrialID=ISRCTN55546280>. 2017.

AN: CN-01876661

INTERVENTION: Patients will be randomized into three groups: Group A: SWL Group B: RIRS Group C: PCNL The randomization allocation sequence will be produced with the online free Random Allocation Software (M. Saghaei, MD). The principal investigator for each center will enroll and assign participants to groups. The randomization will be stratified by center. Each center will use their own equipment to perform treatments, but the procedures will be standardized and were supervised by an experienced surgeon in the field of stone management. SWL will be performed with ultrasound or x-ray guided targeting of the stone with a frequency of

100 impulses/min and a maximum of 2500 shock waves (SW) per session. Patients will be observed for at least two hours after the SWL and then discharged as an outpatient procedure. RIRS will be performed with a flexible ureteroscope and a 30 W Holmium YAG Laser device. Before the sheath insertion, an ureteric dilatation will be performed when required. Bigger fragments will be removed with a stone retrieval basket. After the procedure a double J stent will be inserted in all patients and its removal will be planned after 4 weeks if the patient will be stone free. PCNL will be performed with a rigid nephroscope 20.8 to 24 Fr. and a 30 W Holmium YAG Laser device. PCNL will be performed with the patient either in prone or modified supine position according to the operator's preference. The kidney puncture will be performed under fluoroscopic and/or US guidance. Calyx will be cleaned removing bigger fragments with a stone retrieval basket. Each patient will have a nephrostomy tube placement after the procedure removed after two days if urine is clear. A stone analysis will be performed in all cases, when fragments available. Patients affected by uric acid stones will be treated with oral chemolysis in order to reach the stone free status. Patients will be evaluated with kidney-ureter-bladder (KUB) radiography after 10 days (ultrasonography for uri, CONDITION: Renal lower calyceal stones ; Urological and Genital Diseases, PRIMARY OUTCOME: Stone-free rate (SFR), defined as a negative CT scan or an asymptomatic patient with stone fragments less than 3 mm and a negative urine culture, measured at 3 months, SECONDARY OUTCOME: Peri- and post-operative complications of procedures, classified using the validated Dindo-modified Clavien System, during the hospitalization and until 3 months, INCLUSION CRITERIA: 1. Consecutive patients with a single LP stone with a diameter of 1 to 2 cm as measured at CT scan, that received the indication of active removal according to EAU Guidelines 2. Age between 18 and 75 years

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Safety and Efficacy of Different Irrigation System in Retrograde Intrarenal Surgery Safety and Efficacy of Gravity Irrigation Versus Pressure Irrigation in Retrograde Intrarenal Surgery (RIRS): a Randomized Controlled Trial

NCT05018546

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://clinicaltrials.gov/show/NCT05018546>. 2021.

AN: CN-02307277 NEW

Introduction Urolithiasis is one of the most prevalent urological diseases affecting general, population across the world. The worldwide prevalence ranges from 7%- 13% in North America,, 5%-9% in Europe, and 1%-5% in Asia.¹ West Asia, Southeast Asia, South Asia as well as several, developed countries, including South Korea and Japan, have been categorized into stone, forming belt countries with prevalence ranging from 5% to 19.1%. Increasing incidence of, stone disease is linked with modern life style, food habits, climate as well as increasing, use of imaging (computed tomography or ultrasonography)^{2,3,4} Renal stones constitute about, 80% of total urolithiasis. Shock wave lithotripsy(SWL), Percutaneous Nephrolithotomy(PNL),, and Retrograde Intrarenal Surgery (RIRS) are available treatment modality for renal stones., According to European Association of Urology (EAU) 2020 Guidelines, when active treatment of, renal stones of size <10 mm is indicated, primary treatment modality is either SWL or RIRS., For stones of size > 20 mm, PNL is first line of treatment, however if it is contraindicated, then RIRS or SWL can be used. Stones of size 10-20 mm in non-lower pole calyx can be dealt, with SWL or Endourology (PNL or RIRS). Lower pole calyx stones of 10-20 mm with unfavorable, factors like steep infundibulo-pelvic angle, long calyx, long skin to stone distance, narrow, infundibulum and shock wave resistant stones need to be treated with endourology (PNL or, RIRS). However, favorable lower pole calyx stones of size 10-20 mm are recommended for SWL or, Endourology.⁵ According to AUA guidelines⁶, in symptomatic patients with a total non-lower, pole renal stone burden <= 20 mm, SWL or RIRS can be offered. Patients with a total renal, stone burden > 20 mm, PNL are the first line therapy. For patients with < 10 mm lower pole, renal stones, SWL or RIRS is first line treatment. Patients shouldn't be offered SWL as first, line therapy to lower pole stones >10 mm. Patients with lower pole stones >10mm in size need, to be explained that PNL has a higher stone free rate but greater morbidity., RIRS is occasionally associated with severe infectious complications.¹⁴ Reasons commonly, attributed to it are high intra-pelvic pressure, obstruction, infected urine and stone, break, in sterility of procedure etc. Ureteral Access Sheath (UAS) is one of the measure used to, decrease intra-pelvic pressure during stone fragmentation.¹³ Irrigation for RIRS is the, critical component for the success of procedure. For better vision during procedure,, irrigation pressure (IP) and irrigation flow (IF) needs to be increased. To avoid detrimental, effects of high pressure, intra-renal pressure (IRP) has to be lower than 22 mmHg (30 cm of, water (H₂O))⁷. High pressure irrigation raises

intrarenal pressure leading to pyelo-venous, and pyelo-lymphatic reflux which can lead to sepsis, septic shock, bleeding, infundibular, rupture., Some studies have estimated that at an IP of ≤ 100 cm H₂O (73 mmHg), IRPs remain lower than, 30 cm H₂O if Ureteric Access Sheath (UAS) bigger than 10/12 F is utilized. An IP of 200 cm, H₂O (146 mmHg) may offer high irrigation flows but could result in IRPs > 40 cm H₂O^{8,9}. During forced irrigation and stone fragmentation, IRP can rise upto 300mmHg for short, interval.¹⁵ Omar M. et al in another similar endourological procedure, PCNL which showed High, Irrigation Pressure (272 cm H₂O) to be associated with a higher risk of SIRS (46%) compared, to low Irrigation Pressure (108.8 cm H₂O) risk of 11%.¹⁰ Gravity irrigation at 100 cm of H₂O, (73 mmHg), exerts IRP lower than 30 cm of H₂O, however in pressure irrigation IRP increases, significantly higher. In this study Investigators want to compare between two groups in terms, of safety and efficacy., Rationale and Justification of study Irrigation is required in RIRS for better vision and, smooth performance of surgery. However, high IP during RIRS is implicated for infective, complications. Comparative study of different pressures for irrigation during RIRS is, lacking. Investigators would like to study the safety and efficacy of gravity irrigation, versus pressure irrigation in RIRS., Objectives, General objectives To study the safety and efficacy of gravity irrigation versus pressure, irrigation in RIRS Specific objectives, 1. To study the demographic pattern of patients undergoing RIRS, 2. To compare complications rate of gravity irrigation versus pressure irrigation in RIRS, 3. To identify the stone clearance of gravity irrigation versus pressure irrigation in RIRS, 4. To compare duration of stone fragmentation of gravity irrigation versus pressure, irrigation in RIRS, Research question Which irrigation system is safe and efficacious: gravity or pressure, irrigation? Research Hypothesis Null hypothesis There is no difference in terms of, safety (complications and length of hospital stay) and efficacy (stone free rate and, fragmentation time) between gravity and pressure irrigation in RIRS., Alternative hypothesis There is difference in terms of safety and efficacy between, gravity and pressure irrigation in RIRS., Research design and Methodology, Research method- Quantitative, Types of study- Prospective Randomized Controlled Trial, Study population- Patients undergoing RIRS surgery for renal calculi and who give, consent for study, Study site - Department of Urology and Renal Transplant Surgery, Sampling method -Non probability purposive sampling, Sample size- Sample size calculation, $N = 2 * \{ (Z_{1-\alpha} + Z_{1-\beta}) / (d - [\delta]) \}^2 * p * (1-p)$, Basis for sample calculation is study by Omar M et al in another similar endo-urological, procedure, PCNL which showed High Irrigation Pressure (272 cm H₂O) to be associated with, a higher risk of SIRS (46%) compared to low (108.8 cm H₂O) Irrigation Pressure 11%).¹⁰, Expected time and duration of the study- 1 year, Tools and techniques for data collection, Data collection will be done using preformed proforma and entered in windows excel., Patient's demographic profile, stone characteristics and pelvi-calyceal anatomy will be, recorded. Categorical variables will be expressed as proportions (%) and continuous, variables expressed as Mean +/- Standard Deviation(SD). Chi-square test will be used for, categorical data and Mann-Whitney U test or

student's t test will be applied for, continuous variables as appropriate., Management protocol of patients, Patients with symptomatic renal calculi fulfilling inclusion criteria, will be, considered for RIRS. Pre-operative workup of patients includes Complete blood count,, Renal function test, Chest X ray, Electrocardiogram (ECG), Urine routine and microscopy,, Urine culture and sensitivity. Imaging work-up includes X-ray Kidney Ureter and Bladder, (KUB), Ultrasonography Abdomen and Pelvis and Computed Tomography (CT) Urography., Pre-operatively R.I.R.S. scoring system is used to predict stone free rate.¹¹ Patient, planned for surgery needs sterile urine. If patient has indwelling tube/catheter and, urine culture shows colonized organism, then patient will be treated with sensitive, antibiotics for at least 3 days. Informed written consent will be taken from patient and, patient information sheet (PIS) will be given. Patient will be randomized to two groups:, gravity irrigation group and pressure irrigation group in 1:1 ratio through computer, generated random numbers. Even numbers will be assigned to gravity irrigation group and, odd numbers to pressure irrigation group. Patient will get prophylactic antibiotic at, the time of induction with single dose of ceftriaxone 1gm IV and amikacin 750 mg IV or, sensitive antibiotics will be continued., Patient will be placed in lithotomy position and rigid cystoscopy (19 Fr sheath and 30, scope) will done. Guidewire (Terumo 0.035 inch) will be parked into renal pelvis and, ureteric access sheath 9.5/11.5 Fr (Cook Medical, Bloomington) will be placed reaching, just proximal ureter under fluoroscopy. Flexible ureteroscopy will be done with Karl, Storz FLEX X2S connected to irrigation system consisting of Transurethral resection, (TUR) set connected to 3 L normal saline bag placed at height of 100 cm from patient's, symphysis pubis. In Gravity irrigation group, RIRS surgery will be done with 3 L normal, saline bag placed at 100 cm from patient's symphysis pubis. In case of poor vision and, procedure can't be completed with gravity irrigation, pressure irrigation will be used, and this conversion will be mentioned in proforma. In pressure irrigation group,, Irrigation pressure will be given by arterial line pressure bag and will be started from, 80 mmHg and subsequently increased by 10 mmHg as required and peak irrigation pressure, required will be noted., Stones will be dusted and fragmented with laser energy (LithoDK30, Holmium 2.1, micrometer, Quanta System, Milan, Italy). Duration of surgery along with stone, fragmentation time will be noted. After the procedure, DJ stent will be placed and, removed after 2 weeks., Stone clearance will be confirmed fluoroscopically at the completion of surgery, Post, operative day one (POD1) and Post operative month one (POM1) with X-ray KUB and USG, abdomen and pelvis. If patient requires more than one stage procedure, it will be, mentioned. Patient's post-operative course will be monitored and any complications will, be noted. For rapid identification of sepsis, quick Sequential Organ Failure Assessment, (qSOFA) score will be used: respiratory rate of 22/min or greater, altered mentation, or, systolic blood pressure of 100 mmHg or less. qSOFA score more than two alerts to, evaluate for sepsis and septic shock. Double J (DJ) stent will be placed for 2 weeks, unless its removal required because of fever. Post-operative complications will be, recorded as per classification described by Clavien-

Dindo.12, Process of data Analysis Data collected in Proforma will be entered in Windows Excel., Comparative analysis will be done between gravity irrigation versus pressure irrigation., CONSORT Flow Diagram, Plan for data management and statistical analysis, Data collection will be done in proforma and will be entered in Windows Excel. Patient's, demographic profile, stone characteristics and pelvi-calyceal anatomy will be recorded., Categorical variables will be expressed as proportions (%) and continuous variables, expressed as Mean +/- SD. Chi-square test will be used for categorical data and, Mann-Whitney U test or student's t test will be applied for continuous variables as, appropriate. P value of <0.05 will be considered significant., Biases and Limitations of the study, During procedure, vision is subjective and depends on surgeon's assessment and may, require high pressure to obtain optimum vision. Surgeon's patience is required to wait, till vision becomes clear. Size of stone, type and volume of stone, use of ureteric, access sheath, past history of DJ stent placement, past history of endourological, procedure as well as patient's comorbidities like diabetes mellitus, immunocompromised, status can be confounding factors for longer duration of surgery, complications and, stone clearance rate., Safety considerations During evaluation and treatment of patient, safety and care of, patient will be taken. No unnecessary intervention or medication will be given to, patient apart from what is mentioned in our study and current best practice for, management of renal stones.

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88.

High Powered Stone Dusting vs. Fragmentation and Basketing at Time of Ureteroscopy
Prospective, Randomized Study to Assess Patient Satisfaction and Stone Free Effect of High
Powered Stone Dusting vs. Fragmentation and Basketing at Time of Ureteroscopy
NCT05006937

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://clinicaltrials.gov/show/NCT05006937>. 2021.

AN: CN-02297684 NEW

On the day of surgery, the treatment assigned to the patient will be determined by chance,, like flipping a coin. Neither the patient nor the study doctor will choose the treatment, type. Each patient will have an equal chance of being given either surgical treatment. One, group will have stones treated with high-powered laser dusting and the dust produced will, pass spontaneously through the urine. The other group will have stones treated with low power, laser fragmentation and stones will be removed using a basket. The surgical procedure will, not differ from the treatment a patient would receive if he/she were not in this study., After surgery, participants will complete a pain assessment questionnaire in the outpatient, recovery area before being discharged to go home. Participants will also receive a daily, email or text message to assess pain and daily activities. Participants will answer these, questions daily until pain has resolved and daily activities have returned to baseline, levels., Six weeks after surgery, participants will undergo an ultrasound to assess for swelling of a, kidney due to a build-up of urine (called hydronephrosis), which is standard of practice, after ureteroscopy. Participants will also return to the urology clinic 12 weeks after, surgery for a standard of care follow up visit. At this visit, participants will undergo, standard of care procedures known as renal bladder ultrasound and kidney ureter bladder, abdominal x-ray to evaluate for stones. Participants will also complete another pain, assessment questionnaire at this appointment., Researchers will review the medical record to evaluate the effectiveness of the surgery at, removing kidney stones and preventing kidney stone recurrence as well as to track quality of, life outcomes.

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89.

Semi-rigid Ureteroscopy Versus Flexible Ureteroscopy For the Treatment of Proximal Ureteric Stone A Randomized Controlled Trial Comparing Semi-rigid Ureteroscopy and Flexible Ureteroscopy For the Treatment of Proximal Ureteric Stone
NCT04851171

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://clinicaltrials.gov/show/NCT04851171>. 2021.

AN: CN-02269632 NEW

There are various treatment options that can be used for the treatment of PUS, which include, extracorporeal shockwave lithotripsy (SWL), ureteroscopy (URS), percutaneous nephrolithotomy, (PCNL), antegrade uretero-lithotripsy, laparoscopy, and rarely, open surgical procedures., However, the standard, and the most frequently used modalities are SWL and ureteroscopy. When, comparing the effectiveness in the treatment of Proximal Ureteric stone (PUS) between SWL and, URS, SWL has lower rates of complication and morbidity, but URS has a higher likelihood of, successfully treating the patient within a single procedure. Additionally, with the, advancements in technology and miniaturization of the ureteroscopes, along with the presence, of auxiliary instruments such as holmium laser and retrieval baskets, ureteroscopy is more, widely used., In the proximal ureter, SR-URS tends to encounter difficulties in accessing the stone, but, F-URS aids in overcoming those difficulties. As a result, the use of F-URS for PUS has, indicated a strong success rate with lower likelihood of complications. When comparing the, drawbacks of the two types of modalities, F-URS tends to be more expensive, and requires, auxiliary instruments. And SR-URS tends to have lower success rate along with an increased, rate in complications., The precedence of FURS over SR-URS in the treatment of PUS is yet to be extensively studied., Presently there are only five studies that have compared the two modalities of treatment., But, due to the lack standardization of variables, procedure, follow-up imaging and reporting, of outcomes in the past studies, it is imperative to conduct study that is prospective and, randomized in nature., The present study is randomized in nature, comparing the stone free rate and complications, rate between SR-URS and F-URS for the treatment of PUS, whereby the preoperative assessments,, procedure and reporting of outcomes will all be standardized.

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90.

A clinical experience of thulium fibre laser in miniperc to dust with suction: a new horizon

Shah D, Patil A, Reddy N, Singh A, Ganpule A, Sabnis R, Desai M

EBM Reviews - Cochrane Central Register of Controlled Trials

World journal of urology. 2020.

[Journal: Article in Press]

AN: CN-02175687 NEW

PURPOSE: To report safety and efficacy of mini-PCNL with suction attached to sheath combined with high-power Thulium Fibre laser (TFL). The secondary aim was to evaluate optimal laser settings for maximum stone dusting. **MATERIALS AND METHODS:** Prospective, single arm study was conducted from June 2019-December 2019 using miniPCNL with suction and TFL in 54 patients with renal stones < 3 cm. Stone fragments for each laser setting were independently retrieved and segregated according to size(< 1 mm, 1-3 mm, > 3 mm) and weighed. Xray/CT scan imaging was performed in all patients within 48 h and 30 days to assess stone clearance. Optimal laser settings were evaluated for maximum dusting. **RESULTS:** Mean stone size was 18.32 +/- 6.37 mm, volume was 2337.75 +/- 1996.84mm³ and stone density was 1300.55 +/- 435.32 HU. Total operative time was 39.85 +/- 20.52 min, laser time was 10.08 +/- 7.41 min and stone fragmentation rate was 5.02 +/- 3.93 mm³/s. The procedure was completely tubeless in 37.04%, nephrostomy tube in 37.04% and DJ stent placed in 25.92%. Postoperatively, three patients had urinary infection (Clavien 2). Complete stone clearance at 48 h was achieved in 35 (64.8%) cases. 19 patients (35.2%) who had residual fragments at 48 h, had 100% clearance at one month on CT/Xray KUB. **CONCLUSIONS:** MiniPCNL using a nephrostomy sheath with suction along with high power Thulium Fibre Laser is safe and effective modality for lithotripsy. An initial laser setting of 0.2 J and 125-200 Hz was optimal for maximum dusting and simultaneous aspiration. Randomized comparative studies with other energy sources are being considered.

Publisher

NLM (Medline)

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Comparison of Laser Lithotripsy With and Without Steerable Ureteroscopic Renal Evacuation (SURE) A Prospective, Randomized Study to Evaluate the Safety and Effectiveness of Steerable Ureteroscopic Renal Evacuation(SURE)Using the CVAC[™] Aspiration System Compared to Basketing for the Removal of Renal Calculi Following Laser Lithotripsy
NCT04519294

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://clinicaltrials.gov/show/NCT04519294>. 2020.

AN: CN-02147982 NEW

The purpose of the study is to compare the effects, good and/or bad, of a treatment for removing kidney stones called the SURE procedure for stone evacuation to the standard treatment using a basket for stone removal.

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92.

Comparison of SP TFL and Ho: YAG for RIRS Using 145 [micro]m and 200 [micro]m Fibers
Prospective Randomized Comparison of SP TFL and Ho: YAG for RIRS Using 145 [micro]m and 200 [micro]m Fibers for the Management of Lower Pole Kidney Stones: single-center Study
NCT04346485

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://clinicaltrials.gov/show/NCT04346485>. 2020.

AN: CN-02091648 NEW

RIRS will be performed with SP TFL or Ho:YAG (100 W). The procedure is performed under general anesthesia with the patient in the dorsal lithotomy position. The bladder is entered either with a cystoscope or a semi-rigid ureterorenoscope. Guidewires (0.035") will be used to facilitate access (under fluoroscopic guidance). After access sheath (12/14) will be placed up to the kidney pelvis. Through the access sheath ureteroscope will be introduced. For nephrolithotripsy 145

mcm and 200 mcm fibers will be used. Large fragments could be extracted with nitinol basket. After the surgery ureteral stent (7 Fr.) will be placed inside the ureter for 10 to 14 days., A 10 Fr urethral catheter can be placed in the bladder for the drainage of the bladder during the operation.

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93.

Comparison of Multiple-, Single- and Zero-dose of Ciprofloxacin Prophylaxis in Retrograde Intrarenal Surgery Ciprofloxacin Prophylaxis in Retrograde Intrarenal Surgery: a Prospective Randomized Trail in Comparison of Multiple-, Single- and Zero-dose
NCT02304822

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://clinicaltrials.gov/show/NCT02304822>. 2014.

AN: CN-02035856 NEW

PURPOSE:, To compare multiple-, single-, zero-dose antibiotic prophylaxis for retrograde intrarenal surgery (RIRS) and detect the ideal regimen to prevent systemic inflammatory response syndrome (SIRS)., METHODS:, An [alpha] error of 5% and a power of 80% were assumed to detect a 14.9% difference in rates of postoperative SIRS (5.1% for the antibiotic prophylaxis group and 20% for the control group) based on the historical data. According to sample size calculation formula for comparing rates between multiple independent samples, $n=2[\lambda]/(2\sin^{-1}[\sqrt{P_{\max}}-2\sin^{-1}[\sqrt{P_{\min}}])^2$, the minimum sample sizes to detect statistically significant differences were estimated to be 86 patients for each of the study groups. To account for patients lost to follow-up and study withdrawals, this number was increased to 100., After finishing the cases mentioned above, we find the difference in rates of postoperative SIRS in our center is 7.9% (1.2% for the antibiotic prophylaxis group and 9.1% for the control group). According to sample size calculation formula, the minimum sample sizes were estimated to be 124, additional 38 patients are required to be added to each group. For the

accuracy and availability of the trial, we decided to enlarge the sample size. To account for patients lost to follow-up and study withdrawals, this number was increased to 150. After obtaining informed consent, the patients were assessed for eligibility. To allocate the patients, a computer-generated list of random numbers was used. The patients were randomly allocated into three groups by using a randomization ratio of 1:1:1 (group 1, multiple-dose prophylactic antibiotic of 200mg intravenous ciprofloxacin, 30 minutes before surgery and within 12 hours after surgery additionally; group 2, single-dose prophylactic antibiotic of 200mg intravenous ciprofloxacin, 30 minutes before surgery; group 3, zero-dose of prophylactic antibiotic). All patients were operated under intrathecal general anesthesia. All operations were performed by one experienced surgeon (Guohua Zeng). The surgeon was blinded to group assignment. The postoperative clinical assessment was performed by investigators who had not been involved and were also blind of the group assignment. Preoperative routine physical examination was performed in all patients. White blood count, blood urea nitrogen, creatinine, liver function test, urinalysis, and urine culture were investigated. Before surgery, stone size and location were determined by choosing at least one of following imaging methods: intravenous pyelography (IVP), kidney, ureter, and bladder (KUB), or unenhanced CT. Inclusion Criteria and exclusion Criteria were shown in the part of "eligibility Criteria". All equipment used during operation was chosen from the same brand, and standard sterilization procedures were applied. In this study, the investigators used SIRS criteria defined by the committee for consensus on the definition of sepsis, in order to define postoperative fever in a better way. Patients were followed postoperatively according to SIRS criteria: white blood count < 4000 or > 12000 cells/mm³, heart rate > 90 beats per minute, temperature < 36 [degrees]C or > 38 [degrees]C, respiratory rate > 20 breaths/min. Presence of two or more of these criteria was accepted as SIRS. RIRS technique: All the endourological procedures in the present study were performed in a standard suite, and a sterile technique was strictly practiced and maintained in all cases. All RIRS procedures were performed under general anesthesia in a low lithotomy position. Ureteroscopy was performed with a semi-rigid 8/9.8Fr ureteroscope (Richard Wolf, Germany), and a flexible 0.035-inch guide wire was inserted into the renal collecting system. A 12/14 Fr ureteral access sheath (Cook Urological, USA) was inserted into the proximal ureter along the guide wire under fluo guidance. The Olympus URF-P5 flexible ureteroscope was then advanced via the ureteral access sheath. Irrigation was delivered by manual injection with a 50-mL syringe to achieve a relatively uniform perfusion pressure. Stones were identified and fragmented by holmium: YAG laser lithotripsy. Stone fragments were picked out by the stone basket. Tiny dust and residual fragments < 2 mm were left in place for spontaneous passage. A pigtail 6 Fr Double-J stent was routinely placed at the end of the procedure. The operative time was defined as the time from insertion of an endoscope into the urethra to the completion of stent placement. Data collection: Data for the three groups -age, sex, body mass index, laterality of the stone (left or right), stone surface,

stone type (single or multiple), preoperative serum creatinine level, history of hypertension, history of previous surgery, grade of hydronephrosis, operation time, irrigation volume, postoperative serum creatinine level, hemoglobin decrease, duration of hospital stay, initial stone free rate (SFR), final SFR at 1 month, SIRS and hematuria (modified Clavien system) were recorded. The stone surface area was measured using computerized systems either on KUB or CT scans. Hospital stay was calculated from operation to discharge from hospital. The operative time was defined as the time from insertion of an endoscope into the urethra to the completion of stent placement. Postoperative SIRS was confirmed by the follow-up 4 weeks after the operation. Stone analysis was performed using infrared spectroscopy. Stone composition was classified according to the European Association of Urology (EAU) guidelines 2015. The JJ stent was removed as an outpatient procedure at 2~4 weeks postoperatively. Postoperative follow-up with a KUB and ultrasound was scheduled at the same time. No observed fragments or fragments smaller than 2 mm was classified as stone free. Complications of all patients were recorded according to the modified Clavien classification system. The primary endpoints of the study were postoperative SIRS. Secondary endpoints included SFR, operative time, hemoglobin drop and hematuria.

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94.

SMP vs RIRS for Symptomatic Lower Pole Renal Calculi of 10-20 mm Size: a Randomized Controlled Trial Super-Mini Percutaneous Nephrolithotomy (SMP) Versus Retrograde Intrarenal Surgery (RIRS) for Symptomatic Lower Pole Renal Calculi of 10-20 mm Size: a Randomized Controlled Trial

NCT02519634

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://clinicaltrials.gov/show/NCT02519634>. 2015.

AN: CN-02038416 NEW

To evaluate the efficacy and safety of SMP and RIRS for the treatment for symptomatic lower pole calculi renal calculi measuring 10-20 mm. Investigators will do a multi-centers international randomized controlled trial(RCT) , and investigators plan to perform this study in 10 hospitals , which are the First Affiliated Hospital of Guangzhou Medical University of China, Department of Urology, Renmin Hospital, Wuhan University of China, Shenzhen People's Hospital of China, The Second Affiliated Hospital of Zhengzhou University of China, The Second Affiliated Hospital of Harbin Medical University of China, Zhujiang Hospital of Southern Medical University of China, Jiangsu Province hospital, The First Affiliated Hospital With Nanjing Medical University of China, Zhejiang provincial people's hospital of china, Dr. Lutfi Kirdar Training and Research Hospital of Turkey and Global Rainbow Healthcare of India respectively., Investigators plan to beginning their study at August in 2015 and end at July in 2017. One hundred and sixty patients with symptomatic lower pole calculi renal calculi measuring 10-20 mm will be enrolled in this study. By simple random sampling technique, patients will be assigned to two 80-patient groups. All the patients will be diagnosed definitely before operations with non-contrast CT. Patients with positive preoperative urine culture should be treated with suitable antibiotics based on the culture sensitivity result for at least 72h before SMP/RIRS. Patients who have negative urine culture should receive a single dose of broad spectrum antibiotic prophylaxis just prior to the procedure., Surgical technique, SMP, All the biochemistry tests and preoperative preparations are referenced to the mini-PCNL. Under general anesthesia a 6 French(Fr). Open end ureteral catheter is first inserted in to the relevant ureter. Patient is then turned into prone position and the desired calyx is punctured under fluoroscopic or sonographic guidance. Nephrostomy tract dilation is carried out using fascial dilators up to 12-14 Fr. as indicated. Corresponding size of suction-evacuation sheath was placed. The sheath is connected to the specimen collection bottle and the bottle then onto the aspirator. A rubber cap with a center aperture was placed at the proximal end of the sheath. The negative pressure aspirator was adjusted to a setting of 150-200 mm Hg. The miniature endoscope is inserted into the sheath through the cap. Stone is visualized and lithotripsy is performed using either Holmium-yttrium aluminum garnet(YAG) laser or pneumatic lithotripsy. At the end of procedure fluoroscopic images are obtained to assess stone clearance status. Double J ureteral stent is placed only in the presence of ureteral inflammatory polyp; evidence of ureteropelvic obstruction; presence of significant pyelocalyceal blood clots following lithotripsy; significant residual stones. Indications for nephrostomy tube placement included: significant residual stone fragments which would require a second look procedure; significant pyelocalyceal blood clots or bleeding after lithotripsy (because the nephrostomy tube could tamponade the access tract and drain the urine and clots),, RIRS, The patient is placed in the lithotomy position, Cystoscopy and retrograde pyelogram were preformed, and a 0.035" flexible tip guidewire is placed into the renal pelvis. A 12 Fr/ 14 Fr ureteral access sheath (UAS) is advanced into the proximal ureter over the guidewire, and a P5

or P6 Olympus flexible ureteroscope is passed through the UAS. The stones are fragmented using a 200um holmium laser fibre at a 8-25 weeks energy setting. Some fragments are removed using a stone basket for stone analysis, and the remaining stone fragments smaller than 2 mm were left for spontaneous passage. A 5 Fr or 6Fr pigtail stent is placed at the conclusion of the procedure. Double J stents were removed post-operative 2 weeks., Data collection, Data for the 2 groups-demographic characteristics,hemoglobin(HB) decrease, postoperative pain, duration of postoperative, hospital stay, complications (modified Clavien system), stone clearance (SFR after day 1 and final SFR) and the need for auxiliary treatment are compared., Mean study endpoint: The primary endpoint was the SFR at 3-months after surgery., Secondary endpoint: Complications, duration of postoperative and hospital stay. re-SMP, ureteroscopy and SWL are considered as auxiliary treatments. Demographic characteristics include age, sex, BMI, stone size and location, etc[horizontal ellipsis], The stone size is defined as the maximum diameter as determined by CT scans., Degree of hydronephrosis are assigned as follow: none (no calyx or pelvic dilation), mild (pelvic dilatation alone), moderate (mild calyx dilation), or severe (severe calyx dilation or calyx dilation accompanied by renal parenchyma atrophy)., Definition of operation time:, For SMP: recorded from the time of the first percutaneous renal puncture to the completion of the stone removal., For RIRS: recorded from insertion of an endoscope into the urethra to the completion of stent placement., Hospital stay are rounded to the nearest whole day and calculated from the day of surgery to the day of discharge., Postoperative pain (visual analogue scale(VAS), use of analgesics) and Postoperative comfort scores (Bruggmann comfort scale , BCS) will be recorded., The rate of hemoglobin decrease is assessed by comparing the preoperative Hb level with 24-hour postoperative Hb level., SFR is assessed by KUB and ultrasound at 1-day after operation., Non-contrast CT is obtained for all patients at 3 month after the operation to evaluate the final SFR, allowing time for the spontaneous passage of stone fragments., Stone-free status are defined as either the absence of any residual stone fragments or the presence of clinically insignificant residual stone fragments in the kidney which were defined as [less than over equal to] 3mm, asymptomatic, non-obstructive and non-infectious stone particles., If the procedure is considered as successful, the pigtail stent is removed as outpatient after 2 weeks. Follow-up including non-contrast CT will be generally scheduled in 3 month., Bleeding severity is judged by the treating physician, and transfusions are administered according to local practice guideline., Complications of all patients are recorded according to modified Clavien classification system.

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95.

Effectiveness Basket Wires for the Maintenance of Stone and Pneumatic Probe in the Treatment of Ureteral Stones Determine the Effectiveness of Convective Uses of Basket Wires for the Maintenance of Stone and Pneumatic Probe in the Treatment of Ureteral Stones
NCT03980444

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://clinicaltrials.gov/show/NCT03980444>. 2019.

AN: CN-01945412

Patients included in the study included the necessary tests U / A, K, Na, Cr, BUN, CBC, And U / C was checked and anesthesia counseling was done. Patients were prepared for action. The demographic and clinical data of the patients, including age, sex, size, and location of the stones were recorded., Then patients as random allocation were divided into two groups: A (control group, no basket of bases and group B (use of pneumatic synchronous buccal waist). The dividing person and the patients themselves were not aware of which group they were in. They were double-blind was., In each group, ureteroscopy was performed using a standard F9.5 ureteroscope. After reaching the rock in group A (control), the probe of the pneumatic crusher was passed through the working channel of the ureteroscope and began crushing the rock., During the crushing process, the minimum flow of water, flattening and the single-shot impact was used to minimize the stone's retropulsion., In group B (using a basket of wires3F) the helical type was passed through the four wires of the working channel of the ureteroscope and routed to the proximal part of the rock, and the stone was routed to the bowl, then the stone was ducted The gasket was kept, and the probe of the pneumatic crusher also passed through the working channel and proceeded to break it down. Conditions were observed during the stomach as the control group. Ureteroscopic crushing was performed by a urologist in both groups under similar technical conditions. Findings during and after the completion of crushing include the success, stone retropulsion or parts larger than 3 mm, which requires secondary measures (SWL - ureter stenting, resection ureteroscopy), the duration of stone breakdown and traumatic ureteric complications in both groups it is registered.

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96.

MOSES Lithotripsy Technology Applied to Stone Fragmentation During Ureteroscopy MOSES
Lithotripsy Technology Applied to Stone Fragmentation During Ureteroscopy
NCT03995758

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://clinicaltrials.gov/show/NCT03995758>. 2019.

AN: CN-01983312

MOSES technology was developed by Lumenis Ltd to maximize the lithotripsy potential of high powered lasers. Typically, a holmium laser unit is used to treat kidney and ureteral stones that are too large to remove en block. Laser lithotripsy allows for a large stone to be partitioned into smaller fragments that can be removed with an endoscopic basket device. Holmium technology has existed for more than 20 years, however, low total power (40 watt) and minimal modulations (Joules and Hertz) of the laser energy by the laser units limited the capacity to improve lithotripsy efficiency. With the advent of high power (120 watt) lasers with 4 laser cores and developments in software to modulate the laser energy, many more options have emerged for laser lithotripsy of kidney and ureteral stones. At Indiana University Health Physicians Urology, the laser units used for nephrolithotripsy are engineered and produced by Lumenis Ltd. These units are fitted with MOSES technology. Standard laser lithotripsy or MOSES laser lithotripsy can be performed using the same unit and during the same case by simple turning MOSES on or off on the laser touch screen (image 1). MOSES is propriety technology that is software based modulation of the laser energy delivered from the holmium:YAG laser source. The software changes the pulsed laser to have two peaks of energy - one to displace the water in front of the stone and the second to deliver the laser energy to the stone. Holmium laser energy dissipates quickly in water, so the displacement of water in front of the stone means more energy is delivered to the stone. With more energy delivery, stone fragmentation is expected to occur more rapidly. When treating kidney or ureteral stones, there are two distinct surgical approaches. One technique is to use laser lithotripsy to break a stone into tiny pieces called dusting. Dusting technique attempts to turn

a stone into a slurry of 2mm or less stone fragments that the patient can pass spontaneously. There are some urologist who promote the use of MOSES technology to improve the efficiency of the dusting technique and reduce operative time. Another approach to endoscopic stone surgery is to laser the stone into fragments to remove with a basket. There is far less laser energy used in this process, however, hard stones and larger stones can take time to fragment. Based on the dusting ureteroscopy data, MOSES technology could still improve fragmentation efficiency and reduce overall operative time., This is a blinded study. The research coordinator will present to the OR prior to the surgeon to meet with OR staff. At this time, the coordinator will inform the OR staff which group the participant has been randomly assigned. OR staff will be educated to set the laser as instructed by the surgeon but not share whether the MOSES laser lithotripsy is being used. Surgeons will not be aware of the group assignment. The surgeons are only able to adjust the laser energy settings between 0.4-1.0 joules and 4-15 hertz. To control for stone fragment size, surgeons will have to use an 13 french ureteral access sheath independent of ureteral diameter. The MOSES setting is turned on with a touch pad attached to the laser unit. Once the surgeon is ready to laser fragment the stone, the laser will be activated and with the surgeon provided laser energy settings. The laser technician/nurse will follow randomization and add or remove the MOSES option. The surgeons will not be informed if using standard laser or MOSES augmented laser technology. At the conclusion of laser fragmentation, stone basket extraction will occur and once all fragments are removed, the patient will have a ureteral stent placed, awoken, extubated and transferred to the post anesthesia recovery unit. Objective data about laser settings, utilization time and total energy will be obtained at the conclusion of the case. Additionally, the circulating team will record the total OR time. Other variables of interest include blood loss, blood transfusion requirements and complications (utilizing Clavien-Dindo classification) with an expected rate of approximately 1-2%. Subjective grading of stone movement during laser fragmentation as well as stone migration will be recorded., In addition to the intraoperative variables mentioned above, clinical information including stone size, location, and stone analysis will be recorded.

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97.

Use of a Ureteral Access Sheath During Ureteroscopy and Its Effect on Stone Free Rate A
Prospective Randomized Controlled Clinical Trial of the Use of a Ureteral Access Sheath During
Ureteroscopy and Its Effect on Stone Free Rate

NCT00199524

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://clinicaltrials.gov/show/NCT00199524>. 2005.

AN: CN-01510807

Patients with upper ureteral or renal stones will be randomized to undergoing ureteroscopy with or without a ureteral access sheath. The sheath is designed to facilitate ureteroscope insertion and re-insertion, thus allowing fragments to be basketed out. Stone free rates at 3 months will be determined between the two groups., The investigators hypothesize that the use of the ureteral access sheath with ureteroscopy will result in improved stone free rates at 3 months compared to ureteroscopy without use of a sheath.

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98.

Prospective Comparison Between Different Laser Settings for Ureteral \ Kidney Stones Treatment
During Ureteroscopy Prospective Comparison Between Different Laser Settings for Ureteral \
Kidney Stones Treatment During

NCT02279927

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://clinicaltrials.gov/show/NCT02279927>. 2014.

AN: CN-01549878

Two groups prospectively randomized for different laser settings during ureteroscopy one aimed for stone dusting, the other for stone fragmentation and basket extraction of fragments

Link to the Ovid Full Text or citation:

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99.

Comparison of Multiple-, Single- and Zero-dose of Ciprofloxacin Prophylaxis in Retrograde Intrarenal Surgery Ciprofloxacin Prophylaxis in Retrograde Intrarenal Surgery: a Prospective Randomized Trail in Comparison of Multiple-, Single- and Zero-dose
NCT02304822

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://clinicaltrials.gov/show/NCT02304822>. 2014.

AN: CN-01550602

PURPOSE:, To compare multiple-, single-, zero-dose antibiotic prophylaxis for retrograde intrarenal surgery (RIRS) and detect the ideal regimen to prevent systemic inflammatory response syndrome (SIRS)., METHODS:, An [alpha] error of 5% and a power of 80% were assumed to detect a 14.9% difference in rates of postoperative SIRS (5.1% for the antibiotic prophylaxis group and 20% for the control group) based on the historical data. According to sample size calculation formula for comparing rates between multiple independent samples, $n=2[\lambda]/(2\sin^{-1}[\sqrt{P_{\max}}-2\sin^{-1}[\sqrt{P_{\min}}])^2$, the minimum sample sizes to detect statistically significant differences were estimated to be 86 patients for each of the study groups. To account for patients lost to follow-up and study withdrawals, this number was increased to 100., After finishing the cases mentioned above, we find the difference in rates of postoperative SIRS in our center is 7.9% (1.2% for the antibiotic prophylaxis group and 9.1% for the control group). According to sample size calculation formula, the minimum sample sizes were estimated to be 124, additional 38 patients are required to be added to each group. For the accuracy and availability of the trial, we decided to enlarge the sample size. To account for patients lost to follow-up and study withdrawals, this number was increased to 150., After

obtaining informed consent, the patients were assessed for eligibility. To allocate the patients, a computer-generated list of random numbers was used. The patients were randomly allocated into three groups by using a randomization ratio of 1:1:1 (group 1, multiple-dose prophylactic antibiotic of 200mg intravenous ciprofloxacin, 30 minutes before surgery and within 12 hours after surgery additionally; group 2, single-dose prophylactic antibiotic of 200mg intravenous ciprofloxacin, 30 minutes before surgery; group 3, zero-dose of prophylactic antibiotic). All patients were operated under intrathecal general anesthesia. All operations were performed by one experienced surgeon (Guohua Zeng). The surgeon was blinded to group assignment. The postoperative clinical assessment was performed by investigators who had not been involved and were also blind of the group assignment. Preoperative routine physical examination was performed in all patients. White blood count, blood urea nitrogen, creatinine, liver function test, urinalysis, and urine culture were investigated. Before surgery, stone size and location were determined by choosing at least one of following imaging methods: intravenous pyelography (IVP), kidney, ureter, and bladder (KUB), or unenhanced CT. Inclusion Criteria and exclusion Criteria were shown in the part of "eligibility Criteria". All equipment used during operation was chosen from the same brand, and standard sterilization procedures were applied. In this study, the investigators used SIRS criteria defined by the committee for consensus on the definition of sepsis, in order to define postoperative fever in a better way. Patients were followed postoperatively according to SIRS criteria: white blood count < 4000 or > 12000 cells/mm³, heart rate > 90 beats per minute, temperature < 36 [degrees]C or > 38 [degrees]C, respiratory rate > 20 breaths/min. Presence of two or more of these criteria was accepted as SIRS. RIRS technique: All the endourological procedures in the present study were performed in a standard suite, and a sterile technique was strictly practiced and maintained in all cases. All RIRS procedures were performed under general anesthesia in a low lithotomy position. Ureteroscopy was performed with a semi-rigid 8/9.8Fr ureteroscope (Richard Wolf, Germany), and a flexible 0.035-inch guide wire was inserted into the renal collecting system. A 12/14 Fr ureteral access sheath (Cook Urological, USA) was inserted into the proximal ureter along the guide wire under fluoroscopic guidance. The Olympus URF-P5 flexible ureteroscope was then advanced via the ureteral access sheath. Irrigation was delivered by manual injection with a 50-mL syringe to achieve a relatively uniform perfusion pressure. Stones were identified and fragmented by holmium: YAG laser lithotripsy. Stone fragments were picked out by the stone basket. Tiny dust and residual fragments < 2 mm were left in place for spontaneous passage. A pigtail 6 Fr Double-J stent was routinely placed at the end of the procedure. The operative time was defined as the time from insertion of an endoscope into the urethra to the completion of stent placement. Data collection: Data for the three groups -age, sex, body mass index, laterality of the stone (left or right), stone surface, stone type (single or multiple), preoperative serum creatinine level, history of hypertension, history of previous surgery, grade of hydronephrosis, operation time, irrigation volume, postoperative

serum creatinine level, hemoglobin decrease, duration of hospital stay, initial stone free rate (SFR), final SFR at 1 month, SIRS and hematuria (modified Clavien system) were recorded. The stone surface area was measured using computerized systems either on KUB or CT scans. Hospital stay was calculated from operation to discharge from hospital. The operative time was defined as the time from insertion of an endoscope into the urethra to the completion of stent placement. Postoperative SIRS was confirmed by the follow-up 4 weeks after the operation. Stone analysis was performed using infrared spectroscopy. Stone composition was classified according to the European Association of Urology (EAU) guidelines 2015. The JJ stent was removed as an outpatient procedure at 2~4 weeks postoperatively. Postoperative follow-up with a KUB and ultrasound was scheduled at the same time. No observed fragments or fragments smaller than 2 mm was classified as stone free. Complications of all patients were recorded according to the modified Clavien classification system. The primary endpoints of the study were postoperative SIRS. Secondary endpoints included SFR, operative time, hemoglobin drop and hematuria.

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100.

RIRS Versus ESWL for the Treatment of Renal Stones Retrograde Intrarenal Surgery (RIRS) Versus Extracorporeal Shock Waves Lithotripsy (ESWL) for the Treatment of Renal Stones Measuring 6-20 mm: a Prospective Randomized Study
NCT02645058

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://clinicaltrials.gov/show/NCT02645058>. 2015.

AN: CN-01554828

European urological guidelines consider RIRS and ESWL the treatments of choice for renal stones < 20 mm. RIRS is a endoscopic surgery which allows to reach the kidney from the ureter. A flexible ureteroscope is used for these kind of procedure. Through this device a laser fiber

(Holmium laser) is used to treat the stones. After that, small fragments can be removed with a basket. In some cases, according to intraoperative findings, a ureteral stent can be push in the kidney to help the drainage of the kidney. ESWL is a procedure which allows to treat the stones by shock waves generated by a specific machine which work in direct contact with the skin of the patients (extracorporeal). Shockwaves pass all the tissues and finally reach the stones. Such energy allows to break the stones in small fragments, that will be spontaneously passed by the patients. Specific parameters of these treatments are discussed in "Arms and Interventions". Many studies demonstrated high success rate of RIRS and this technique is becoming more and more adopted. One study demonstrated better outcomes of RIRS versus ESWL, but only for renal stones located in the inferior calices and smaller than 10 mm. There are not other studies comparing the two procedures and there are not proofs that RIRS ensures better outcomes for other renal stones (neither for size nor for location).

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101.

Utilizing Holmium Laser for FURS Renal Stone Lithotripsy Comparing Stone Breaking vs. Stone Dusting Settings Utilizing Holmium Laser for FURS Renal Stone Lithotripsy Comparing Stone Breaking vs. Stone Dusting Settings

NCT02683993

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://clinicaltrials.gov/show/NCT02683993>. 2016.

AN: CN-01555853

Twenty (20) subjects presenting with a renal stone and candidates for FURS (flexible ureteroscopic renal surgery) will undergo a single FURS procedure for a kidney stone as part of the study, using the study device. These subjects will be randomized into stone breaking treatment or stone dusting.

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102.

Evaluation of Two Different Treatments for Lower Pole Renal Stone: microperc Vs FURS

Evaluation of Two Different Treatments for Lower Pole Renal Stone: microperc Vs FURS

NCT03307096

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://clinicaltrials.gov/show/NCT03307096>. 2017.

AN: CN-01564762

To evaluate the merits of Microperc and RIRS for the treatment for lower pole renal stone between 10-20 mm. Investigators will do a multi-centers randomized controlled trial(RCT). A total of 200 (three hundred) patients, aging between 18 and 60 years are being planned to be enrolled into the study; By simple random sampling technique, patients will be prospectively randomized into group A and group B with a 1:1 ratio. Group A will receive the microperc surgery and group B will undergo FURS., All the patients will be diagnosed definitely before operations with non-contrast CT+IVP or CTU, lower pole Infundibular length, Infundibular width and Lower pole infundibulopelvic angle were recorded. A double J stent will be inserted in two the relevant ureter two weeks before surgery to guarantee the successful of operations. Patience will receive either microperic or FURS respectively, The operation time , hemoglobin change, renal function, post-operation pain, complications and hospital stay will be recorded. Patience will have follow-up visits at one month and three months, CT and KUB will be taken to evaluate the clearance of renal stone., Surgical technique Microperc surgery: After the satisfaction of anesthesia, Patient is turned into prone position and the desired calyx is punctured by 4.8F microperc under fluoroscopic or sonographic guidance. No tract dilation is needed. A 200um holmium laser fiber will be used to break stone into less than 2mm. Pull out microperc without drainage tube left; RIRS: After the satisfaction of anesthesia, the patient is placed in the lithotomy position, pull out the pre-inserted double J stent, and place guidewire into the renal pelvis. A 12/14 Fr ureteral access sheath (UAS) is advanced into the proximal ureter over the guidewire, and flexible

ureteroscope is passed through the UAS. The stones are fragmented smaller than 2mm using a 200um holmium laser fiber. Fragments are removed using a stone basket for stone analysis if necessary, a double J stent is placed at the conclusion of the procedure and removed post-operative 2 weeks., Data collection Data for the 2 groups-demographic characteristics, hemoglobin(HB) decrease, white blood cell(WBC) increase, postoperative pain, duration of postoperative hospital stay, complications (modified Clavien system), stone clearance (SFR) and the need for auxiliary treatment are compared., Mean study endpoint: Final SFR (3 months after procedure) Secondary endpoint: Complications, duration of postoperative hospital stay. re-microperc, ureteroscopy and SWL are considered as auxiliary treatments., The stone size is defined as the maximum diameter as determined by CT scans. Degree of hydronephrosis are assigned as follow: none (no calyx or pelvic dilation), mild (pelvic dilatation alone), moderate (mild calyx dilation), or severe (severe calyx dilation or calyx dilation accompanied by renal parenchyma atrophy)., Definition of operation time:, For microperc: recorded from the time of the first percutaneous renal puncture to pulling out the microperc., For RIRS: recorded from insertion of an endoscope into the urethra to the completion of stent placement., Hospital stay are rounded to the nearest whole day and calculated from the day of surgery to the day of discharge., Postoperative pain (visual analogue scale(VAS), use of analgesics) will be recorded., The rate of hemoglobin decrease is assessed by comparing the preoperative Hb level with 24-hour postoperative Hb level., Non-contrast CT and KUB is obtained for all patients at 3 month after the operation to evaluate the final SFR, allowing time for the spontaneous passage of stone fragments., Stone-free status are defined as either the absence of any residual stone fragments or the presence of clinically insignificant residual stone fragments in the kidney which were defined as ≤ 4 mm, asymptomatic, non-obstructive and non-infectious stone particles., Complications of all patients are recorded according to modified Clavien classification system.

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Dusting vs Fragmenting in RIRS: a Multicenter Prospective Randomised Trial
Basketing in RIRS: a Multicenter Prospective Randomised Trial
NCT03207659

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://clinicaltrials.gov/show/NCT03207659>. 2017.

AN: CN-01579648

The investigators aim to perform a prospective and randomized trial comparing the safety and efficacy of active basket extraction of fragments and stone dusting during the RIRS.

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104.

Long Pulse Versus Short Pulse Laser Dusting for Renal Stones Long Pulse Versus Short Pulse
Laser Dusting for Renal Stones

NCT03608098

EBM Reviews - Cochrane Central Register of Controlled Trials

<https://clinicaltrials.gov/show/NCT03608098>. 2018.

AN: CN-01625923

This study will compare two types of laser lithotripsy to see the pulse duration to determine which settings are more effective. This is a randomized control trial with subjects randomized to either long pulse or a short pulse group. Those subjects with a single kidney/ureter stone measuring up to 20 mm will be eligible for the study. The procedures will be performed using the standard of care instruments and techniques but the pulse type setting in surgery will be constant. Some Holmium laser devices provide the option to modulate the pulse duration. A longer laser pulse duration (700 [mu]s or 1500 [mu]s) as compared to a traditional pulse duration (300 [mu]s or 350 [mu]s) has been demonstrated in vitro studies to provide effective stone disintegration while reducing laser fiber tip degradation and stone retropulsion. Both the long and the short setting can dust the stone and currently we alternate in each procedure from one setting to the other and

it is unclear which setting is more effective. No changes to operative technique will be performed for subjects in the study vs regular patients undergoing the same procedure. All subjects will be seen one week to one month after surgery for stent removal and follow up.

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105.

Quantitative assessment of effectiveness of ultrasonic propulsion of kidney stones

Dai JC, Sorensen MD, Chang HC, Samson PC, Dunmire B, Cunitz BW, Thiel J, Liu Z, Bailey MR, Harper JD

EBM Reviews - Cochrane Central Register of Controlled Trials

Journal of endourology / Endourological Society. 2019.

[Journal: Article in Press]

AN: CN-01980096 NEW

PURPOSE: Ultrasonic propulsion is an investigative modality to non-invasively image and reposition urinary stones. Our goals were to test safety and effectiveness of new acoustic exposure conditions from a new transducer, and to use simultaneous ureteroscopic and ultrasonic observation to quantify stone repositioning. **MATERIALS AND METHODS:** During surgery, ultrasonic propulsion was applied transcutaneously while stone targets were visualized ureteroscopically. Exposures were 350 kHz frequency, a[per mille sign][currency sign] 200 W/cm² focal intensity, and a[per mille sign][currency sign] 3-second bursts per push. Ureteroscope and ultrasound (US) videos were recorded. Video clips with and without stone motion were randomized and scored for motion a[per mille sign][yen] 3 mm by independent reviewers blinded to the exposures. Subjects were followed with telephone calls, imaging, and chart review for adverse events. **RESULTS:** The investigative treatment was used in 18 subjects and 19 kidneys. A total of sixty-two stone targets were treated ranging in size from a collection of "dust" to 15 mm. Subjects received an average of 17 A+/- 14 propulsion bursts (per kidney) for a total average exposure time of 40 A+/- 40 s. Independent reviewers scored at least one stone

movement a[per mille sign][yen] 3 mm in 18 of 19 kidneys (95%) from the ureteroscopy videos and in 15 of 19 kidneys (79%) from the US videos. This difference was likely due to motion out of the US imaging plane. Treatment successfully repositioned stones in two cases that would have otherwise required basket repositioning. No serious adverse events were observed with the device or procedure. CONCLUSIONS: Ultrasonic propulsion was shown to be safe, and it effectively repositioned stones in 95% of kidneys despite positioning and access restrictions caused by working in an operating room on anesthetized subjects.

Publisher

NLM (Medline)

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106.

Initial content validation results of a new simulation model for flexible ureteroscopy: the key-box
Initial content validation results of a new simulation model for flexible ureteroscopy: the key-box

Villa L, Sener TE, Somani BK, Cloutier J, Buttice S, Marson F, Doizi S, Proietti S, Traxer O

EBM Reviews - Cochrane Central Register of Controlled Trials

Journal of endourology / endourological society. 31(1):72-77, 2017.

[Article]

AN: CN-01474578 NEW

Purpose: We sought to test the content validity of a new training model for flexible ureteroscopy:

The Key-Box. Material and Methods: Sixteen medical students were randomized to undergo a 10-day training consisting of performing 10 different exercises aimed at learning specific movements with the flexible ureteroscope, and how to catch and release stones with a nitinol basket using the Key-Box (n = 8 students in the training group, n = 8 students in the nontraining control group).

Subsequently, an expert endourologist (O.T.) blindly assessed skills acquired by the whole cohort of students through two exercises on ureteroscope manipulation and one exercise on stone capture selected among those used for the training. A performance scale (1-5) assessing

different steps of the procedure was used to evaluate each student. Time to complete the exercises was measured. Mann-Whitney Rank Sum test was used for comparisons between the two groups. Results: Mean scores obtained by trained students were significantly higher compared with those obtained by nontrained students (all $p < 0.001$). All trained students were able to complete the two exercises on ureteroscope manipulation within 3 minutes, whereas two students (25%) were not able to finish the exercise on stone capture. Conversely, four (50%) and six (75%) nontrained students were not able to finish one out of the two exercises on ureteroscope manipulation and the exercise on stone capture, respectively. The mean time to complete the three exercises was 76.3, 69.9, and 107 and 172.5, 137.9, and 168 seconds in the trained and nontrained groups, respectively (all $p < 0.001$). Conclusions: The K-Box seems to be a valid easy-to-use training model for initiating novel endoscopists to flexible ureteroscopy.

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Institution

O. Traxer, Department of Urology, Tenon Hospital, Pierre and Marie Curie University, 4 rue de la Chine, Paris Cedex 20 75970, France. E-mail: olivier.traxer@tnn.aphp.fr

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107.

Comparison of Stented and Unstented Patients Following Ureteroscopy for Ureter Stones

Noh JH, Kim DK, Jeong H

EBM Reviews - Cochrane Central Register of Controlled Trials

Korean journal of urology. 43(1):28-31, 2002.

AN: CN-01046121

PURPOSE: The placement of a ureteral stent following a ureteroscopy (URS) with a stone extraction is routine. However, many patients complain of stent pain and urinary symptoms in the

postoperative period. Reducing the frequency of stenting would decrease the need for re-instrumentation, reduce costs, and increase patient satisfaction provided that the efficacy and safety are not compromised. In order to evaluate the necessity of stenting, a comparison of patients with and without stenting after URS for ureteral calculi is reported. MATERIALS AND METHODS: 45 patients with ureteral calculi amenable to ureteroscopic management were prospectively randomized into stented (23 patients) and unstented (22 patients) groups. Standard ureteroscopic basketing and lithotripsy were performed with a ureteroscope (8.5Fr) with or without ureteral dilatation. Postoperative symptom questionnaires were obtained from each patient. Radiographic follow-up to assess the stone-free rate and evidence of obstruction was performed in all patients. RESULTS: There was no statistically significant difference in the age, stone size, operation time, and hospital stay, between the unstented and stented groups ($p>0.05$). In addition, there was no statistically significant difference in the flank pain and urinary symptoms ($p>0.05$), except for hematuria between the 2 groups. Hematuria was more severe and long standing in the stent group ($p=0.001$). CONCLUSIONS: Uncomplicated ureteroscopy for calculus retrieval can safely be performed without the placement of a postoperative stent. Considering its complications and side effects, we do not believe that a routine placement of a ureteral stent following an uncomplicated ureteroscopy for a stone is necessary. [By kind permission, KoreaMed, Korean Association of Medical Journal Editors.]

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108.

Fluoroless Ureteroscopy: Experience in More Than 100 Patients.

Abu Ahmed M., Abu Nasra W., Safadi A., Visoky A., Elias I., Katz R.

Embase

The Israel Medical Association journal : IMAJ. 24(1) (pp 47-51), 2022. Date of Publication: 01 Jan 2022.

[Article]

AN: 637118906

BACKGROUND: Ureteroscopy is becoming the primary treatment for ureteral stones. As a standard of care, ureteroscopy is performed under the supervision of fluoroscopy. Recent advances in endourological technology make the need for fluoroscopy questionable.

OBJECTIVE(S): To summarize our experience with a no-fluoroscopy technique for selected cases of ureteral stones.

METHOD(S): Patients were considered suitable for fluoroless ureteroscopy if they had one or two non-impacted stones, in any location in the ureter, 5-10 mm size, with a normal contralateral renal unit and no urinary tract infection. Procedures were performed using rigid scopes, nitinol baskets/forceps for stone retrieval, and Holmium:YAG laser for lithotripsy. Stents were placed per surgeon's decision.

RESULT(S): During an 18-month period, 103 patients underwent fluoroless ureteroscopy. In 94 patients stones were removed successfully. In six, the stones were pushed to the kidney and treated successfully on a separate session by shock wave lithotripsy. In three patients no stone was found in the ureter. In five patients, miniature perforations in the ureter were noted and an indwelling double J stent was placed.

CONCLUSION(S): Fluoroless ureteroscopy resulted in a high rate of success. We believe that in selected cases it can be used with minimal adverse events.

PMC Identifier

35077045 [<https://www.ncbi.nlm.nih.gov/pubmed/?term=35077045>]

Institution

(Abu Ahmed, Abu Nasra, Safadi, Visoky, Elias, Katz) Department of Urology, Ziv Medical Center, affiliated with Azrieli Faculty of Medicine in the Galilee, Safed, Israel

Publisher

NLM (Medline)

Year of Publication

2022

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Histogram of kidney stones on non-contrast computed tomography to predict successful stone dusting during retrograde intrarenal surgery.

Kim D.S., Moon S.K., Lee S.H.

Embase

World journal of urology. 39(9) (pp 3563-3569), 2021. Date of Publication: 01 Sep 2021.

[Article]

AN: 634607285

PURPOSE: To predict successful dusting of kidney stones during retrograde intrarenal surgery (RIRS) using stone density parameters and histograms measured with non-contrast computed tomography imaging.

METHOD(S): Medical records of 49 patients who underwent retrograde intrarenal surgery between January 2018 and January 2019 at Kyung Hee University Hospital were reviewed, and the data of 55 stones were evaluated. Patient age, sex, mean stone density, the highest and lowest measured Hounsfield unit (HU), standard deviation and range of the measured HUs, volume of the most measured HU, and success of dusting were evaluated. Histograms of the measured HUs were created and cutoff values for successful dusting were analyzed.

RESULT(S): Thirty-two stones were successfully dusted during surgery. Dusted stones had a wider range of HU and higher standard deviation. The volume of the most measured HU was smaller in the dusted stones. Successful dusting could be predicted when the volume of the most measured HU was $<8.9 \text{ mm}^3$, with range ≥ 853 , or when the volume of the most measured HU was $<8.9 \text{ mm}^3$, with range <853 , and the mean stone density was <355 . The histograms of HUs of the dusted stones were wide and rugged, while those of dusting failed stones were narrow and peaked.

CONCLUSION(S): Evaluation of stone HU histograms showed differences in distribution and proportion. This will help predict surgical outcomes and prepare for intraoperative complications.

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Author NameID

Kim, Dong Soo; ORCID: <https://orcid.org/0000-0002-5696-0671> Lee, Sang Hyub; ORCID: <https://orcid.org/0000-0002-4509-5846>

Moon, Sung Kyoung; ORCID: <https://orcid.org/0000-0003-4831-3439>

Institution

(Kim, Lee) Department of Urology, School of Medicine, Kyung Hee University, Kyung Hee University Medical Center, Dongdaemun-gu, Seoul 02447, South Korea (Moon) Department of Radiology, School of Medicine, Kyung Hee University, Seoul 02447, South Korea

Publisher

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Year of Publication

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110.

Stone size on endoscopic view as a predictor of successful stone retrieval during flexible ureteroscopy: an in vitro analysis.

Randall J.H., Carrera R.V., Fletcher P.J., Duchene D.A., Thurmon K.L., Neff D.A., Molina W.R.

Embase

World journal of urology. 39(9) (pp 3587-3591), 2021. Date of Publication: 01 Sep 2021.

[Article]

AN: 634137788

PURPOSE: Basketing plays an important role during flexible ureteroscopy, but it can be time-consuming, especially when fragments are too large to pass through the ureteral access sheath. We aim to present the optimal on-screen, endoscopic stone size that predicts successful basketing through various access sheaths.

METHOD(S): A tipless basket, individually extended to 5 mm from multiple ureteroscopes: (Flex-Xc, Karl Storz; Flex-X2s, Karl Storz; LithoVue, Boston Scientific; or URF-P6R, Olympus) and via differently sized access sheaths (10-12 Fr through 13-15 Fr), was used in retrieval attempts of various artificial stone sizes (2 mm through 5 mm). A relative endoscopic stone size was recorded as the stone's maximum diameter on endoscopic view compared to the total image diameter.

RESULT(S): Basketing of stones up to 2.5 mm, yielding relative endoscopic stone sizes of 0.38 (Flex-Xc), 0.30 (Flex-X2s), 0.32 (LithoVue), and 0.34 (URF-P6R), was successful using all access sheaths. Only the 12-14 Fr and greater sheaths allowed for successful basketing of 3 mm stones. Larger stones did not successfully pass through any of the access sheaths.

CONCLUSION(S): Successful stone retrieval can be predicted by estimating the stone's size on screen, which is influenced by the type of flexible ureteroscope and access sheath. In our testing, stones of approximately one-third of the screen size passed successfully in all cases.

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PMC Identifier

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Author NameID

Randall, J Hogan; ORCID: <https://orcid.org/0000-0003-0106-7226>

Institution

(Randall, Carrera, Duchene, Thurmon, Neff, Molina) Department of Urology, University of Kansas Medical Center, Mailstop 3016, 3901 Rainbow Boulevard, Kansas City, United States (Fletcher) School of Medicine, University of Kansas Medical Center, Kansas City, United States

Publisher

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Year of Publication

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111.

Impact of Pulse Mode on Dusting Effect for Holmium Laser Lithotripsy: In Vitro Evaluation With Calcium Oxalate Monohydrate Stones.

Rezakahn Khajeh N., Black K.M., Daignault-Newton S., Hall T.L., Roberts W.W., Ghani K.R.

Embase

Urology. 159 (pp 53-58), 2022. Date of Publication: January 2022.

[Article]

AN: 2015508737

Objective: To assess the distribution of stone fragments (<0.25->2 mm) after in vitro dusting laser lithotripsy with varying pulse modes using canine calcium oxalate monohydrate (COM) stones. Recent work demonstrates that fragments <0.25 mm are ideal for dusting, and we hypothesized advanced pulse modes might improve this outcome.

Method(s): A 3D-printed bulb was used as a calyceal model containing a single COM stone. A 230-core fiber (Lumenis) was passed through a ureteroscope (LithoVue, Boston Scientific). Contact laser lithotripsy by a single operator was performed with dusting settings (0.5J x 30Hz; Moses Pulse120H) to deliver 1kJ of energy for each trial. Short pulse (SP), long pulse (LP), Moses Distance (MD) and Moses Contact (MC) modes were tested with 5 trials for each parameter. Primary outcome was mass of fragments <0.25, <0.5, <1, and <2 mm. Laser fiber tip degradation was measured using a digital caliper.

Result(s): Mass of stone fragments <0.25 mm varied from 34.6%-43.0% depending on the pulse mode, with no statistically significant differences between modes. MC (98.5%) produced a greater mass of fragments <2 mm compared to LP (86.1%; P = .046) but not SP (92.0%). Significantly less fiber tip burnback occurred with MC (0.29 mm) and MD (0.28 mm), compared to SP (0.83 mm; P < .0005).

Conclusion(s): Regardless of pulse mode, greater than one-third of the mass of COM stone was reduced to fragments <0.25 mm following contact laser lithotripsy. MC produced a greater mass of fragments <2 mm compared to LP and demonstrated less fiber tip burnback compared to SP.

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Institution

(Rezakhani Khajeh, Black, Daignault-Newton, Roberts, Ghani) Department of Urology, University of Michigan, Ann Arbor, MI, United States (Hall, Roberts) Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States

Publisher

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112.

Ex vivo study: is it possible to overcome the blurriness caused by holmium laser fragmentation of kidney stones?.

Eren M.T., Ozveri H., Kolay M., Saral N.Y., Serteser M.

Embase

Urolithiasis. 50(1) (pp 95-102), 2022. Date of Publication: February 2022.

[Article]

AN: 2013919986

Better endoscopic vision is mandatory for successful ureteroscopic stone operations to achieve shorter operating time. However, an important impairing factor for a good endoscopic view is the cloudiness of vision which was formed during laser fragmentation. Holmium laser fragmentation of calcium oxalate stones produces calcium carbonate solubility of which is dependent on pH, citrate, and phosphate. In this ex vivo research, the solubility of calcium carbonate has been investigated in solutions composed of various concentrations of citrate and phosphate buffered at different pH levels after laser fragmentation of calcium oxalate stones. Calcium oxalate stones were placed into the laboratory tubes filled with various concentrations of citrate-phosphate buffers with different pH values. Laser energy in dusting mode was applied to the stones and spectrophotometric measurement for optical density (OD) was calculated for each buffered solution for clarity comparison. In the first phase, solutions composed of four different molar concentrations of citrate-phosphate buffer (0.2, 0.3, 0.4 and 0.5 molars) at various pH levels were used. Then, the next phase of the study was designed to compare solutions demonstrating the lowest OD values with an isotonic saline solution. The results were most convenient at 0.5 molarity (pH = 6) followed by 0.4 molarity (pH = 7) in the first phase (OD values of 0.054 and 0.065, respectively). In the next phase, OD values of both buffered solutions were significantly lower than those of isotonic saline solution (p = 0). Two specific buffers have provided better optic

visibility values after laser fragmentation supporting their use as an irrigation solution for the favor of less cloudiness.

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Author NameID

Eren, Murat Tugrul; ORCID: <https://orcid.org/0000-0001-9602-3220> Ozveri, Hakan; ORCID: <https://orcid.org/0000-0002-9907-0388>

Serteser, Mustafa; ORCID: <https://orcid.org/0000-0001-7868-7613>

Institution

(Eren) Department of Urology, Vocubulary School of Health Sciences, Surgical Technician Department, Acibadem Healthcare Group, Kozyatagi Hospital, Acibadem Mehmet Ali Aydinlar University, Icerenkoy, Kayisdagi Cd. No: 32, Atasehir/Istanbul 34684, Turkey (Ozveri) Department of Urology, School of Medicine, Department of Urology, Acibadem Healthcare Group, Kozyatagi Hospital, Acibadem Mehmet Ali Aydinlar University, Istanbul, Turkey (Kolay, Saral) Acibadem Labmed Medical Laboratory, Istanbul, Turkey (Serteser) School of Medicine, Department of Biochemistry, Acibadem Mehmet Ali Aydinlar University, Istanbul, Turkey

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A clinical experience of thulium fibre laser in miniperc to dust with suction: a new horizon.

Shah D., Patil A., Reddy N., Singh A., Ganpule A., Sabnis R., Desai M.

Embase

World journal of urology. 39(7) (pp 2727-2732), 2021. Date of Publication: 01 Jul 2021.

[Article]

AN: 632951172

PURPOSE: To report safety and efficacy of mini-PCNL with suction attached to sheath combined with high-power Thulium Fibre laser (TFL). The secondary aim was to evaluate optimal laser settings for maximum stone dusting. **MATERIALS AND METHODS:** Prospective, single arm study was conducted from June 2019-December 2019 using miniPCNL with suction and TFL in 54 patients with renal stones <3 cm. Stone fragments for each laser setting were independently retrieved and segregated according to size (<1 mm, 1-3 mm, >3 mm) and weighed. Xray/CT scan imaging was performed in all patients within 48 h and 30 days to assess stone clearance. Optimal laser settings were evaluated for maximum dusting.

RESULT(S): Mean stone size was 18.32±6.37 mm, volume was 2337.75±1996.84mm³ and stone density was 1300.55±435.32 HU. Total operative time was 39.85±20.52 min, laser time was 10.08±7.41 min and stone fragmentation rate was 5.02±3.93 mm³/s. The procedure was completely tubeless in 37.04%, nephrostomy tube in 37.04% and DJ stent placed in 25.92%. Postoperatively, three patients had urinary infection (Clavien 2). Complete stone clearance at 48 h was achieved in 35 (64.8%) cases. 19 patients (35.2%) who had residual fragments at 48 h, had 100% clearance at one month on CT/Xray KUB.

CONCLUSION(S): MiniPCNL using a nephrostomy sheath with suction along with high power Thulium Fibre Laser is safe and effective modality for lithotripsy. An initial laser setting of 0.2 J and 125-200 Hz was optimal for maximum dusting and simultaneous aspiration. Randomized comparative studies with other energy sources are being considered.

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PMC Identifier

32960327 [<https://www.ncbi.nlm.nih.gov/pubmed/?term=32960327>]

Institution

(Shah, Patil, Reddy, Singh, Ganpule, Sabnis, Desai) Department of Urology, Muljibhai Patel Urological Hospital, Nadiad, India

Publisher

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114.

Could the high-power laser increase the efficacy of stone lithotripsy during retrograde intrarenal surgery?.

Tsaturyan A., Ballesta Martinez B., Lattarulo M., Adamou C., Pagonis K., Peteinaris A., Liourdi D., Vrettos T., Liatsikos E.N., Kallidonis P.

Embase

Journal of endourology. (no pagination), 2022. Date of Publication: 12 Jan 2022.

[Article]

AN: 637058182

OBJECTIVE: To compare a high-power setting holmium yttrium aluminum garnet (Ho:YAG) laser lithotripsy to the established low-power setting approach during Retrograde Intrarenal Surgery (RIRS). MATERIAL AND METHODS: Our study analyzed the data of consecutive patients managed with RIRS. The patients were divided into 2 groups according to the employed laser settings of power, energy and frequency; dusting (20W=0.5Jx40Hz) (Group1) and stone "self-popping" (60W=1.5-2Jx30-40Hz) (Group 2). Perioperative outcomes including operative time (OT) and stone disintegration time (SDT) were compared between groups. Stone-free rate (SFR) was evaluated 1 month after the surgery.

RESULT(S): Overall, 174 patients with 179 renal units were included. The dusting mode was utilized in 98 patients (100 renal units), whereas 76 patients (79 renal units) underwent the stone "self-popping" technique. The SFR was 82.1% for both groups. The OT and SDT were 60.1 +/- 18.6min and 32.6 +/- 9.4min respectively for Group 1, and 44.9 +/- 15.5min and 16.5 +/- 4.7min respectively for Group 2. According to the final analysis, laser lithotripsy using stone the "self-popping" technique was significantly faster compared to the dusting technique with a coefficient value of 14.12min (CI = 8.8 - 19.44) and 15.84min (CI = 13.44 - 18.2) for OT and SDT, respectively.

CONCLUSION(S): The stone "self-popping" technique with the power at 60W, frequency at 30-40Hz and energy at 1.5-2.0J is a safe and effective modality for the active treatment of renal stones. In comparison to the dusting mode, it resulted in significantly faster procedures (14.12min) possessing similar SFR.

PMC Identifier

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Institution

(Tsaturyan) Yerevan State Medical University Named after Mkhitar Heratsi, 159228, Urology, Hasratyan 9, Yerevan, Armenia, 0052; (Ballesta Martinez) Patras, Greece; bballestamartinez@gmail.com

(Lattarulo) Brescia, Italy;

(Adamou) University of Patras, 37795, Urology, Achaikis Sympoliteias 59, Patra, Greece, 24661;

(Pagonis) University of Patras, 37795, Department of Urology, Patras, Western Greece, Greece;

(Peteinaris) University of Patras, 37795, Department of Urology, Patra, Greece;

(Liourdi) University of Patras, Urology, University of Patras, Patras, Greece, 26500;

(Vrettos) University of Patras, Department of Anesthesiology and ICU, Rion Patras, Patras, Greece, 26504; teovret@gmail.com

(Liatsikos) University of Patras, 37795, 11 ARETIS GREKOU STR, FILOTHEI, Patras, Greece, 26504;

(Kallidonis) University Of Patras, Urology, Univ. Hospital of Patras, Patras 26504, Greece

(Kallidonis) Greece;

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115.

Assessing deep learning methods for the identification of kidney stones in endoscopic images.

Lopez F., Varelo A., Hinojosa O., Mendez M., Trinh D.-H., ElBeze Y., Hubert J., Estrade V., Gonzalez M., Ochoa G., Daul C.

Embase

Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Annual International Conference. 2021 (pp 2778-2781), 2021. Date of Publication: 01 Nov 2021.

[Article]

AN: 636875610

Knowing the type (i.e., the biochemical composition) of kidney stones is crucial to prevent relapses with an appropriate treatment. During ureteroscopies, kidney stones are fragmented, extracted from the urinary tract, and their composition is determined using a morpho-constitutional analysis. This procedure is time-consuming (the morpho-constitutional analysis results are only available after several weeks) and tedious (the fragment extraction lasts up to an hour). Identifying the kidney stone type only with the in-vivo endoscopic images would allow for the dusting of the fragments and enable early treatments, while the morpho-constitutional analysis is ready. Only few contributions dealing with the in vivo identification of kidney stones have been published. This paper discusses and compares five classification methods including deep convolutional neural networks (DCNN)-based approaches and traditional (non DCNN-based) ones. Even if the best method is a DCCN approach with a precision and recall of 98% and 97% over four classes, this contribution shows that an XGBoost classifier exploiting well-chosen feature vectors can closely approach the performances of DCNN classifiers for a medical application with a limited number of annotated data.

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116.

Clinical Impact of the Institution of Moses Technology on Efficiency during Retrograde Ureteroscopy for Stone Disease: Single-Center Experience.

Knoedler M.A., Li S., Best S.L., Hedican S.P., Penniston K.L., Nakada S.Y.

Embase

Journal of Endourology. 36(1) (pp 65-70), 2022. Date of Publication: 01 Jan 2022.

[Article]

AN: 636960483

Objective: To evaluate the clinical benefits of Moses technology compared with the regular mode with the Lumenis Pulse™ P120H holmium laser during ureteroscopy for stone disease.

Patients and Methods: An IRB-Approved database of patients with urolithiasis was analyzed for ureteroscopies from January 2020 to December 2020 at an outpatient surgery center. Patients who underwent ureteroscopy with the Lumenis Pulse P120H holmium laser system with the Moses or regular mode were included. Patient characteristics and stone parameters were collected. Operative room parameters were compared, including procedural time, fragmentation/dusting time, lasing time, and total energy used. Complication rates and stone-free rates were also analyzed. Univariate analysis and multiple analysis of covariance controlling for cumulative stone size were performed. Patients with staged procedures were excluded.

Result(s): Of 197 surgical cases, 176 met the inclusion criteria. Moses was utilized in 110 cases and regular mode in 66. There was no difference in cumulative stone size between Moses and regular modes (11.8 +/- 7.9 vs 11.6 +/- 9.2 mm, $p = 0.901$). Procedural time (43.5 +/- 32.1 vs 39.8 +/- 24.6 minutes, $p = 0.436$), fragmentation/dusting time (20.5 +/- 25.3 vs 17.1 +/- 16.1 minutes, $p = 0.430$), lasing time (7.5 +/- 11.1 vs 6.7 +/- 7.9 minutes, $p = 0.570$), and total energy used (5.1 +/- 6.7 vs 3.8 +/- 4.8 kJ, $p = 0.093$) were also similar. Complications (6.4% vs 6.1%, $p = 0.936$) and stone-free rates (52.3% vs 65.3%, $p = 0.143$) did not differ.

Conclusion(s): At our institution, Moses technology did not significantly change the procedural time, fragmentation/dusting time, lasing time, or total energy used. Moreover, there were no differences in complications or stone-free rates. There may be technical benefits to the Moses technology not captured in this analysis.

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34235963 [<https://www.ncbi.nlm.nih.gov/pubmed/?term=34235963>]

Status

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Institution

(Knoedler, Li, Best, Hedican, Penniston, Nakada) Department of Urology, University of Wisconsin School of Medicine and Public Health, 1685 Highland Avenue, Madison, WI 53715, United States

Publisher

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117.

Moses 2.0 for High-Power Ureteroscopic Stone Dusting: Clinical Principles for Step-by-Step Video Technique.

Rezakahn Khajeh N., Majdalany S.E., Ghani K.R.

Embase

Journal of Endourology. 35(S3) (pp S22-S28), 2021. Date of Publication: 01 Dec 2021.

[Article]

AN: 636737701

Introduction: We present our initial experience using the Moses 2.0 system for flexible-ureteroscopy (f-URS) high-frequency renal stone dusting, including a step-by-step video guide of our clinical principles for dusting technique.

Material(s) and Method(s): Twelve consecutive patients undergoing f-URS with Moses 2.0 (Lumenis) for a single renal stone by a single surgeon at an ambulatory center were reviewed.

Stone-free rates (SFRs) and Clavien grade complications were assessed. Operative steps with illustrative examples are provided in an accompanying video.

Result(s): Mean (range) stone size and lithotripsy time were 10.4 (5.3-17.2) mm and 15.0 (5-26) minutes, respectively. Complete SFR and <2 mm residual fragments were 82% and 18%, respectively. One patient had a Clavien Grade 1 complication. Operative steps reviewed include instrumentation, stone control, laser settings, and stent omission criteria. The preferred laser settings for renal stone dusting were 0.2-0.3 J and 100-120 Hz. Limitation of this early experience study is the small sample size. Larger studies are needed to confirm our initial findings.

Conclusion(s): Early experience of Moses 2.0 for f-URS renal stone dusting demonstrated effective and efficient laser lithotripsy in patients with renal stones <2 cm.

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Author NameID

Rezakahn Khajeh, Nikta; ORCID: <https://orcid.org/0000-0003-1153-0966> Majdalany, Sami E.;

ORCID: <https://orcid.org/0000-0003-2776-0977>

Institution

(Rezakahn Khajeh, Majdalany, Ghani) Department of Urology, University of Michigan, Ann Arbor, MI, United States

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Size Distribution of Fragments by High-power Holmium Laser Lithotripsy in MiniPCNL with Suction.

Reddy N.K., Patil A.P., Tak G.R., Shah D., Singh A.G., Ganpule A.P., Sabnis R.B., Desai M.R.

Embase

Current Urology Reports. 22(12) (no pagination), 2021. Article Number: 64. Date of Publication: December 2021.

[Review]

AN: 2014480832

Purpose of Review: Data are lacking on distribution of size of fragments created with the laser lithotripsy, stone density, and composition. Dust (< 1 mm) and small fragments (1-3 mm) may be too small to be efficiently removed with forceps compared to larger fragments (> 3 mm). We aim to report the size distribution of fragments formed during holmium laser lithotripsy. Recent

Findings: One hundred ten patients with renal calculi < 3 cm underwent miniPCNL using ClearPetra sheath (Well Lead Medical Co., China) with controllable irrigation and suction system that minimizes fragment dispersion and maximizes fragment aspiration. Moses holmium laser (Lumenis INC, Israel) was used with predefined laser energy settings for lithotripsy. Proportion of fragment size < 1 mm was 46.36 +/- 16.68%, 1-3 mm was 28.18 +/- 10.01%, and > 3 mm was 25.19 +/- 16.18% for the entire cohort. Complete stone clearance at 48 h was achieved in 77.3% cases. The remaining 22.7% patients had complete clearance at 1-month follow-up CT.

Summary: In all the stone density, volume, and composition groups, majority of fragments created were either < 1 mm or 1-3 mm. Only 25% fragments were > 3 mm that would get aspirated out through the sheath with suction or could be retrieved with forceps. The combination of a high-power holmium laser and suction would help in complete stone clearance with effective aspiration of smaller stone fragments and dust simultaneously during lasing.

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PMC Identifier

34913152 [<https://www.ncbi.nlm.nih.gov/pubmed/?term=34913152>]

Status

In-Process

Institution

(Reddy, Patil, Tak, Shah, Singh, Ganpule, Sabnis, Desai) Department of Urology, Muljibhai Patel Urological Hospital, Nadiad, India

Publisher

Springer

Year of Publication

2021

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119.

Cost-effectiveness of using stone cone, balloon dilator, stone basket, and entrapment device in ureteroscopic laser lithotripsy for ureteric stones.

Cecen K.

Embase

Journal of International Medical Research. 49(12) (no pagination), 2021. Date of Publication: December 2021.

[Article]

AN: 2014463486

Objective: To evaluate the costs and stone-free rates of ureteroscopic laser lithotripsy (ULL) performed with and without auxiliary equipment and to compare first-time ULL with total treatment.

Method(s): One hundred patients who underwent first-time ULL without the use of auxiliary equipment because its unavailability comprised the no-device ULL (ndULL) group. Additionally, 100 patients who underwent first-time ULL with the use of auxiliary equipment when necessary comprised the device ULL (dULL) group.

Result(s): In the ndULL and dULL groups, the stone-free rates after first-time ULL were 72% and 94% and the mean cost was US \$1037 +/- 15.10 and US \$1452 +/- 19.80 per case, respectively, with a statistically significant difference. The stone-free rates at the end of treatment were 98% and 99%, respectively, without a statistically significant difference. When secondary treatment costs were added to the first ULL costs after failed treatment, the mean total cost was US \$1625 +/- 12.60 in the ndULL group and US \$1566 +/- 11.01 in the dULL group without a statistically significant difference.

Conclusion(s): The stone-free rates and costs after first-time ULL were significantly different between the groups. However, after total treatment, there was no statistically significant difference between the two groups.

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PMC Identifier

34898311 [<https://www.ncbi.nlm.nih.gov/pubmed/?term=34898311>]

Status

In-Process

Author NameID

Cecen, Kursat; ORCID: <https://orcid.org/0000-0003-3662-9399>

Institution

(Cecen) University of Health Sciences, Derince Training and Research Hospital, Department of Urology, Kocaeli, Turkey

Publisher

SAGE Publications Ltd

Year of Publication

2021

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120.

Laser suction effect: Zero-basket technique for dusting ureteral stones with pulse modulation.

Majdalany S.E., Ghani K.R.

Embase

Urology Video Journal. 13 (no pagination), 2022. Article Number: 100113. Date of Publication: March 2022.

[Article]

AN: 2016185974

Status

Embase

Institution

(Majdalany, Ghani) Department of Urology, University of Michigan, Ann Arbor, United States

Publisher

Elsevier Inc.

Year of Publication

2022

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121.

Efficiency and clinical outcomes of moses technology with flexible ureteroscopic laser lithotripsy for treatment of renal calculus.

Wang M., Shao Q., Zhu X., Wang Z., Zheng A.

Embase

Urologia Internationalis. 105(7) (pp 587-593), 2021. Date of Publication: 01 Jun 2021.

[Article]

AN: 635012340

Objective: The aim of the study was to compare the efficiency and clinical outcomes of Moses contact mode (MCM) and regular dusting mode (RDM) during flexible ureteroscopic lithotripsy (FURL) for treatment of renal calculus.

Method(s): This retrospective analysis examined 216 patients with renal calculus who underwent FURL with MCM or RDM between March 2015 and January 2020. Stone characteristics, including size, volume, and density, were collected. Laser parameters, including laser type, laser working time, laser pause time, and foot-pedal use, were automatically recorded by the lithotripter work panel. The percentages of laser working time and laser pause time, stone fragmentation efficiency (SFE; volume/laser working time), postoperative complications, including fever and

acute renal failure (ARF), stone-free rate (SFR), and the need for auxiliary procedures were determined.

Result(s): There were no significant differences in preoperative demographic and stone characteristics between the MCM group and the RDM group. The MCM group had a shorter laser working time (4.99 +/- 1.06 vs. 5.94 +/- 0.96 min, $p < 0.001$) and a greater SFE (137.86 [163.78-114.38] versus 114.94 [132.06-101.34] mm³ $p < 0.001$), which shortened the overall operative time (18.39 +/- 5.13 vs. 21.17 +/- 6.78 min, $p = 0.001$). There were no differences in postoperative complications, including fever and ARF, SFR (86.8 vs. 85.3%, $p = 0.743$), and auxiliary procedures between the 2 groups.

Conclusion(s): Using Moses laser technology with FURL significantly reduced laser working time and increased SFE, which shortened overall operative time. Urologists should consider this new instrument for the clinical management of renal calculus.

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PMC Identifier

33951653 [<https://www.ncbi.nlm.nih.gov/pubmed/?term=33951653>]

Status

Embase

Institution

(Wang, Shao, Zhu, Wang, Zheng) Department of Urology, Beijing Electric Power Hospital, SGCC (State Grid Corporation of China), Beijing, China

Publisher

S. Karger AG

Year of Publication

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Superpulse thulium fiber laser lithotripsy: an in vitro comparison of 200 μm and 150 μm laser fibers.

Taratkin M., Azilgareeva C., Corrales M., Teoh J.Y.-C., Allenov S., Inoyatov J., Ali S., Rivas J.G., Markovina I., Enikeev D.

Embase

World journal of urology. 39(12) (pp 4459-4464), 2021. Date of Publication: 01 Dec 2021.

[Article]

AN: 635906859

PURPOSE: To investigate the thermal effects, stone retropulsion and ablation rate of SuperPulse Thulium-fiber laser (SP TFL) with two different surgical fibers of 200 and 150 μm in diameter.

METHOD(S): SP TFL (NTO IRE-Polus, Fryazino, Russia) performance with 200 and 150 μm fibers (NTO IRE-Polus, Fryazino, Russia) was evaluated. Before each test, the laser fiber was cleaved, and the power measurement was taken to verify the actual laser output power. To compare the laser fibers in well-controlled environments, a number of setups were used to assess retropulsion, ablation efficacy, fiber burnback, energy transmission, and safety.

RESULT(S): Power measurements performed before each test revealed a 4.7% power drop for a 200 μm fiber SP TFL (14.3 $\pm$ 0.5 W) and 7.3% power drop for a 150 μm fiber SP TFL (13.9 $\pm$ 0.5 W) versus the nominally indicated power (15.0 W). Retropulsion with the TFL was minimal and comparable between fibers. We found no clinically relevant temperature differences between SP TFL with either 200 or 150 μm fibers. The ablation efficacy tended to be comparable under most parameters. Yet, we did observe a decreased diameter of residual fragments after the ablation with a 150 μm fiber.

CONCLUSION(S): The smaller fiber (150 μm) is not inferior to 200 μm fiber in terms of fiber burnback, retropulsion, safety, and ablation rate. Moreover, it has the potential to decrease the diameter of fragments during lithotripsy, which may facilitate dusting during RIRS.

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Author NameID

Enikeev, Dmitry; ORCID: <https://orcid.org/0000-0001-7169-2209>

Institution

(Taratkin, Allenov, Inoyatov, Ali, Enikeev) Institute for Urology and Reproductive Health, Sechenov University, 2/1 Bolshaya Pirogovskaya St., Moscow 119991, Russian Federation
(Azilgareeva) International School "Medicine of the Future", Sechenov University, Moscow, Russian Federation

(Corrales) Sorbonne University, Hopital Tenon, Paris, France

(Teoh) Department of Surgery, S.H. Ho Urology Centre, Chinese University of Hong Kong, Hong Kong, China

(Rivas) Department of Urology, Clinico San Carlos University Hospital, Madrid, Spain

(Markovina) Institute of Linguistics and Intercultural Communication, Sechenov University, Moscow, Russian Federation

Publisher

NLM (Medline)

Year of Publication

2021

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123.

P0161 Effect of standard antibiotic prophylaxis versus enhanced prophylactic measures on rate of urinary tract infection after flexible ureteroscopy.

Ali A.T., El-Agamy E.-S.I., Elhelaly M.A., Abdrabuh A.M., Elebiary M.F., Abdelaal M.A.

Embase

European Urology. 79(Supplement 1) (pp S232), 2021. Date of Publication: June 2021.

[Article]

AN: 2012236383

INTRODUCTION & Objectives: Thanks to the continuous technological developments, flexible ureteroscopy (fURS) has become one of the most reliable tools in upper urinary tract endourology. Weaponed by creative ancillary instruments such as graspers and baskets, effective energy sources and digital and robotic enhancements, fURS could expand its diagnostic and therapeutic applications to many upper urinary tract pathologies beyond their common use in management of renal stones. Prevention of urinary tract infections (UTIs) after flexible ureteroscopy (fURS) remains controversial. The present study aimed to compare the rate of post-

procedural UTI in patients subjected to the standard antibiotic prophylaxis alone versus enhanced prophylactic measures.

Material(s) and Method(s): from August 2018 to September 2020, a total of 100 patients subjected to fURS for management of ureteral and/or renal stones were included in this study. Patients were equally and randomly divided to two treatment groups using randomly computer-generated allocation tables and concealed envelope technique. Treatment groups included standard antibiotic prophylaxis group and enhanced prophylaxis group. Patients in the standard antibiotic prophylaxis group IV, fluoroquinolone 1 hour preoperatively and oral antibiotics were used for 24h postoperatively. In the enhanced prophylaxis group, patients had urine culture 10 days before the procedure. In addition to the antibiotic prophylaxis, hydrophilic-coated ureteral access sheaths were systematically used. The study protocol was approved by the local ethical committee of the author's institute and informed written consent was obtained from all patients before enrollment.

Result(s): Comparison between the baseline and operative characteristics of the studied groups revealed no statistically significant differences. Postoperatively, 8 patients (16.0%) in the standard prophylaxis group were diagnosed with UTI in comparison to 2 patients (4.0%) in the enhanced prophylaxis group expressing a statistically significant difference ($p=0.046$). Using binary logistic regression analysis, female patients' sex [OR (95% CI): 0.09 (0.018-0.46)], operative time [OR (95% CI): 0.97 (0.94-0.99)] were significant predictors of postoperative UTI in univariate analysis. However, only female sex remained significant in multivariate analysis [OR (95% CI): 0.09 (0.017-0.49)].

Conclusion(s): Urinary tract infection after fURS can be significantly reduced by using the suggested enhanced prophylactic approach.

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Status

CONFERENCE ABSTRACT

Institution

(Ali, El-Agamy, Elhelaly, Abdrabuh, Elebiary, Abdelaal) Al-Azhar University, Faculty of Medicine, Dept. of Urology, Cairo, Egypt

Publisher

Elsevier B.V.

Year of Publication

2021

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[SFX](#)

124.

Semi-rigid ureteroscopy and holmium laser stone dusting for proximal ureteral stones does adjuvant tamsulosin therapy increase the chance of success?.

Malky P.H., Emam A.M., Shaker H.S.

Embase

QJM. Conference: 40th Annual Ain Shams Medical Conference. Online. 113(SUPPL 1) (pp i256-i257), 2020. Date of Publication: March 2020.

[Conference Abstract]

AN: 636769328

Background: Alpha blockers decrease peristalsis above and below the stone, which increases the urine bolus and intraureteral pressure above it and lowers intraureteral pressure below it in association with the decrease in basal and micturition pressure, even at the bladder neck; thus, it increases the chance of stone expulsion. We aim to evaluate whether peri-operative tamsulosin in stented ureteroscopic laser lithotripsy for proximal ureteric stones increase the procedure success rate of stone clearance. Since our aim in ureteroscopic treatment of upper ureteric stones is laser dusting rather than stone retrieval, its possible that alpha blockers can improve the access to upper ureter and clearance of fragmented stones.

Objective(s): To evaluate whether peri-operative tamsulosin in stented ureteroscopic laser lithotripsy for proximal ureteric stones increase the procedure success rate of stone clearance.

Patients and Methods: This prospective, randomized, multicenter study included 60 patients and carried out between March 2018 and December 2018 in Police hospital Nasr City and Ain Shams University Hospitals included adult patients (at least 15 years) with proximal ureteral stones ($\geq$ 5mm) scheduled for URS lithotripsy.

Result(s): In this study, the overall failure rate was 18.3%. In most cases 8/11(72.7%), failure of the procedure was due to the difficulty experienced in advancing the ureteroscope. We should mention that this technical problem was reported only in 2 (6.7%) patients receiving pre-URS tamsulosin but in 6 (20%) patients of the control group. The mean operative time in this series was significantly shorter operative time in Group 2(51.8min) compared to Group 1(58.8 min). At follow-up 4 weeks after URS, SFR was (86.7% for Group 2 and 66.7% for Group 1).

Conclusion(s): Adjunctive tamsulosin therapy prior to laserassisted semi-rigid URS for the management of proximal ureteral stones improves ureteroscopic access, reduces the operative time and improves the SFR with an acceptable complication rate. Further research should be conducted on a larger scale to evaluate the various predictors of the outcome of URS and analyze the results with different pre-URS tamsulosin time periods in order to consolidate the results and to confirm the conclusion.

Status

CONFERENCE ABSTRACT

Institution

(Malky, Emam, Shaker) Department of Urology, Faculty of Medicine, Ain Shams University, Egypt

Publisher

Oxford University Press

Year of Publication

2020

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125.

Comparative study between dusting versus fragmentation of proximal ureteric stones using holmium laser lithotripsy.

Elzayat T.M., Fahim H.A., Abdelaziz M.S.

Embase

QJM. Conference: 40th Annual Ain Shams Medical Conference. Online. 113(SUPPL 1) (pp i263), 2020. Date of Publication: March 2020.

[Conference Abstract]

AN: 636768785

Objective: to compare between the outcome and complications of proximal ureteric stone disintegration using dusting versus fragmentation technique with focusing on stone free rate.

Material(s) and Method(s): in a prospective randomized clinical study, 20 patients will undergo laser disintegration of ureteric stones by dusting technique; another 20 patients will undergo laser disintegration of ureteric stones by fragmentation technique. The inclusion criteria include symptomatic single primary proximal ureteric stone < 2 cm. The Exclusion criteria were pregnant women, children, and patients with coagulation disorders, medical problems that hinder anesthesia, recent active infection, urinary tract abnormalities and previous ureteric surgery.

Result(s): Our laser settings in this research were energy 0.5 J and frequency 20 Hz for dusting technique and 2 J energy and 5Hz frequency for fragmentation technique. Stone free rates of dusting and fragmentation techniques were 75% and 90% respectively. Post operative complications were 15% with dusting technique and 20% with fragmentation group.

Conclusion(s): Our study shows that the active retrieval after laser lithotripsy (fragmentation technique) more efficient than waiting tiny fragments to pass spontaneously after laser lithotripsy (dusting technique) as fragmentation technique has lower mean operative time, lower incidence of stone migration during procedure and higher stone free rate than dusting technique. Dusting technique seems to be more efficient than fragmentation in double-J stenting and post-operative complications as it has the lower incidence of jj stenting and post operative complications. To obtain fair and precise results we have to apply this study in larger population.

Status

CONFERENCE ABSTRACT

Institution

(Elzayat, Fahim, Abdelaziz) Urology Department, Faculty of Medicine, Ain Shams University, Egypt

Publisher

Oxford University Press

Year of Publication

2020

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Link to the External Link Resolver:

[SFX](#)

Laser fiber displacement velocity during tm-fiber and ho:Yag laser lithotripsy: Introducing the concept of optimal displacement velocity.

Panthier F., Germain T., Gorny C., Berthe L., Doizi S., Traxer O.

Embase

Journal of Clinical Medicine. 11(1) (no pagination), 2022. Article Number: 181. Date of Publication: January-1 2022.

[Article]

AN: 2015118582

Background: Endocorporeal laser lithotripsy (EL) during flexible ureteroscopy (URS-f) of-ten uses "dusting" settings with "painting" technique. The displacement velocity of the laser fiber (LF) at the stone surface remains unknown and could improve EL's ablation rates. This in vitro study aimed to define the optimal displacement velocity (ODV) for both holmium:yttrium-aluminum-garnet (Ho:YAG) and thulium fiber laser (Tm-Fiber).

Method(s): A 50W-TFL (IRE Polus, Russia) and a 30W-MH1-Ho:YAG laser (Rocamed), were used with 272µm-Core-Diameter LF (Sureflex, Boston Scientific©), comparing three TFL modes, "fine dusting" (FD:0.05-0.15 J/100-600 Hz); "dust-ing" (D:0.5 J/30-60 Hz); "fragmentation" (Fr:1 J/15-30 Hz) and two Ho:YAG modes (D:0.5 J/20 Hz, Fr:1 J/15 Hz). An experimental setup consisting of immersed cubes of calcium oxalate monohydrate (COM) stone phantoms (Begostone Plus, Begoa) was used with a 2 seconds' laser operation time. LF were in contact with the stones, static or with a displacement of 5, 10 or 20 mm. Experiments were repeated four times. Stones were dried and µ-scanned. Ablation volumes (mm³) were measured by 3D-segmentation.

Result(s): ODV was higher in dusting compared to fragmentation mode during Ho:YAG lithotripsy (10 mm/sec vs. 5 mm/sec, respectively). With Tm-Fiber, dusting and fragmentation OVDs were similar (5 mm/sec). Tm-Fiber ODV was lower than Ho:YAGs in dusting settings (5 mm/s vs. 10 mm/sec, respectively). Without LF displacement, ablation volumes were at least two-fold higher with Tm-Fiber compared to Ho:YAG. Despite the LF-DV, we report a 1.5 to 5- fold higher ablation volume with Tm-Fiber compared to Ho:YAG.

Conclusion(s): In dusting mode, the ODVTm-Fiber is lower compared to ODVHo:YAG, translating to a potential easier Tm-Fiber utilization for "painting" dusting technique. The ODV determinants remain unknown. Dynamic ablation volumes are higher to static ones, regardless of the laser source, settings or LF displacement velocity.

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Status

In-Process

Institution

(Panthier, Germain, Doizi, Traxer) GRC ndegree20, Groupe de Recherche Clinique sur la Lithiase Urinaire, Hopital Tenon, Sorbonne Universite, Paris 75020, France (Panthier, Germain, Doizi, Traxer) Service d'Urologie, Assistance-Publique Hopitaux de Paris, Hopital Tenon, Sorbonne Universite, 4 Rue de la Chine, Paris 75020, France
(Panthier, Germain, Gorny, Berthe) PIMM, UMR 8006 CNRS-Arts et Metiers ParisTech, 151 bd de l'Hopital, Paris 75013, France
(Panthier) Service d'Urologie, Assistance-Publique Hopitaux de Paris, Hopital Europeen George Pompidou, 20 Rue Leblanc, Paris 75015, France

Publisher

MDPI

Year of Publication

2022

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127.

Ureteroscopic Performance of High Power Super Pulse Thulium Fiber Laser for the Treatment of Urolithiasis: Results of the First Case Series in North America.

Carrera R.V., Randall J.H., Garcia-Gil M., Knudsen B.E., Chew B.H., Thompson J.A., Humphreys M.R., Molina W.R.

Embase

Urology. 153 (pp 87-92), 2021. Date of Publication: July 2021.

[Article]

AN: 2011498837

Objective: To report the first case series of ureterorenoscopy in North America using the High Power Super Pulse Thulium Fiber Laser for the treatment of upper urinary tract stones.

Method(s): After Institutional Review Board approval, a multicentric retrospective chart review of patients treated with the High Power Super Pulse Thulium Fiber Laser from October 2019 to March 2020 was conducted. Basic demographic information, pre-operative, and peri-operative data were recorded.

Result(s): Seventy-six patients were included with a mean age of 60.9 +/- 13.3 years. 118 stones were treated including 32 within the ureter, 49 in the lower pole, 37 in mid or upper poles. Dusting technique was commonly used (67.1%) with pulse frequencies up to 2400 Hz. Mean operative time was 59.4 +/- 31.5 minutes. Mean laser time and total laser energy were 10.8 +/- 14.1 minutes and 12.5 +/- 19.1 KJ, respectively. Intraoperative complications were limited to 7 grade 1, 3 grade 2, and 1 grade 3 ureteral injuries and one case of renal collecting system bleeding that was adequately managed with laser coagulation settings (1J-20Hz).

Conclusion(s): This initial case series in North America of the High Power Super Pulse Thulium Fiber Laser is promising for the treatment of urolithiasis. Sub-200 μ m fibers and dusting settings up to 2400 Hz were utilized successfully. No specific complications related to use of the laser were seen.

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PMC Identifier

33621583 [<https://www.ncbi.nlm.nih.gov/pubmed/?term=33621583>]

Status

Embase

Institution

(Carrera, Randall, Molina) University of Kansas Medical Center, Department of Urology, Kansas City, KS, United States (Garcia-Gil, Knudsen) The Ohio State University Wexner Medical Center, Department of Urology, Columbus, OH, United States

(Chew) University of British Columbia, Department of Urologic Sciences, Vancouver, BC, Canada

(Thompson) Department of Biostatistics & Data Science, Kansas City, KS, United States

(Humphreys) Mayo Clinic, Department of Urology, Phoenix, AZ, United States

Publisher

Elsevier Inc.

Year of Publication

2021

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[Click here for full text options](#)

Link to the External Link Resolver:

128.

Low Body Mass Index as a Predictive Factor for Postoperative Infectious Complications after Ureterorenoscopic Lithotripsy.

Seike K., Ishida T., Taniguchi T., Fujimoto S., Kato D., Takai M., Iinuma K., Nakane K., Uno H., Tamaki M., Komeda H., Koie T.

Embase

Medicina (Kaunas, Lithuania). 57(10) (no pagination), 2021. Date of Publication: 13 Oct 2021.

[Article]

AN: 636592920

Background and Objectives: In this study, we aimed to evaluate predictive factors of postoperative fever (POF) after ureterorenoscopic lithotripsy (URSL).

Material(s) and Method(s): A total of 594 consecutive patients who underwent URSL for urinary stone disease at Gifu Municipal Hospital and Chuno Kosei Hospital between April 2016 and January 2021 were enrolled in this study. In all patients, antibiotics were routinely administered intraoperatively and the next day after surgery. We used rigid and/or flexible ureterorenoscopes depending on the stone location for URSL. Stones were fragmented using a holmium: YAG laser. The fragments of the stone were manually removed as much as possible using a stone basket catheter. A ureteral stent was placed at the end of the surgery in all cases.

Result(s): The median age and body mass index (BMI) in all patients were 62 years and 23.8 kg/m², respectively. The median operation duration was 52 min. The most common URSL-related complication was POF in 28 (4.7%) patients. In these patients, the rates of antibiotic administration and ureteral stent insertion before surgery were significantly higher than in those without POF. In multivariate analysis, BMI was associated with POF after URSL. There were no significant differences in predicting POF after surgery in patients who had bacteriuria or received antibiotics before surgery.

Conclusion(s): A low BMI was significantly associated with POF after URS or URSL.

PMC Identifier

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Author NameID

Taniguchi, Tomoki; ORCID: <https://orcid.org/0000-0002-2612-2191> Kato, Daiki; ORCID:

<https://orcid.org/0000-0003-4932-0497>

Koie, Takuya; ORCID: <https://orcid.org/0000-0002-2980-127X>

Institution

(Seike, Taniguchi, Uno) Department of Urology, Chuno Kosei Hospital, Seki 5013802, Japan

(Ishida, Tamaki, Komeda) Department of Urology, Gifu Municipal Hospital, Gifu 5008513, Japan

(Fujimoto) Department of Urology, Ogaki Municipal Hospital, Ogaki 5038502, Japan

(Kato, Takai, Iinuma, Nakane, Koie) Department of Urology, Gifu University Graduate School of Medicine, Gifu 5011194, Japan

Publisher

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Year of Publication

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129.

Endoscopic combined intrarenal surgery (ECIRS) with SOLTIVE laser and mini-PCNL technique.

Niu S., Alam S.M., Molina W.R.

Embase

Journal of Endourology. Conference: 38th World Congress of Endourology, WCE 2021. Virtual. 35(SUPPL 1) (pp A70-A71), 2021. Date of Publication: 2021.

[Conference Abstract]

AN: 636616688

Introduction & Objective: Endoscopic Combined IntraRenal Surgery (ECIRS) is a combined rigid and flexible antegrade and retrograde approach for the treatment of large kidney stones and provides an opportunity to exploit the full array of endourologic equipment. As more urologists are adopting the minimipercutaneous nephrolithotomy (mini-PCNL) technique to decrease morbidity associated with conventional PCNL while preserving high stone free rates when compared to

ureteroscopy, we aim to determine the feasibility and efficacy of ECIRS using the SOLTIVETM laser combined with mini-PCNL for treatment of moderate sized renal stones.

Method(s): After Institutional Review Board approval, we retrospectively reviewed two patients with stones between 1.5-2.5cm who underwent treatment with ECIRS using simultaneous mini-PCNL with SOLTIVETM laser and retrograde ureteroscopy. Access was obtained intraoperatively. We selected one of the cases to highlight our ECIRS experience using the novel combination of technology and technique.

Result(s): In modified supine position, the flank is elevated to create 15 degrees of rotation to expose the puncture area, demarcated by the 12th rib, iliac crest and posterior axillary line. The 15/16Fr rigid access sheath was used for access. The 365- micrometer fiber achieved exceptional ablation rate and dusting with the setting of 1J and 36Hz. Simultaneous retrograde ureteroscopy facilitated mini-PCNL by amplifying the vortex effect with maneuvers such as "pass the ball" technique. Neither patient had a postoperative complication, and both were considered stone free based on postoperative imaging. This is a descriptive video of our technique that has been performed on a total of 2 patients. No statistical analysis was calculated due to the rarity of this procedure.

Conclusion(s): ECIRS with SOLTIVETM laser and mini-PCNL technique is a safe and effective strategy for treatment of stones with sizes that fall in between conventional PCNL or flexible ureteroscopy alone. The optimal wavelength of the SOLTIVETM laser created superior ablative properties which facilitated the performance of faster and more effective lithotripsy. Simultaneous retrograde ureteroscopy allowed for complete surveillance of the collecting system, relocation of stone fragments for ease of treatment, and amplification of the vortex effect. Further studies with larger cohorts are needed to assess the generalizability of our outcomes with this novel combination of technique and technology.

Status

CONFERENCE ABSTRACT

Publisher

Mary Ann Liebert Inc.

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130.

Reusable digital flexible ureteroscope vs. A single-use flexible ureteroscope in the treatment of urolithiasis: An edge consortium prospective randomized clinical trial.

Knudsen B.E., Posid T., Sourial M.W., Wong V.K., Paterson R., Stern K.L., Moore J., Humphreys M.R., Chew B.H.

Embase

Journal of Endourology. Conference: 38th World Congress of Endourology, WCE 2021. Virtual. 35(SUPPL 1) (pp A210-A211), 2021. Date of Publication: 2021.

[Conference Abstract]

AN: 636616664

Introduction & Objective: Flexible ureteroscopes are routinely used to treat kidney stones. Both single-use and reusable models are available. The high cost of purchase and repair of reusable ureteroscopes has led to the development of single-use options. This trial compared a single-use digital flexible ureteroscope (LithoVue, Boston Scientific) to a state-of-the art reusable digital flexible ureteroscope (Flex-Xc, Storz) in a multicenter, prospective randomized trial from the EDGE Group.

Method(s): Patients were randomized across 3 sites to either the single use flexible ureteroscope (n = 53) or a reusable flexible ureteroscope (n = 49) (brand new at each site and used only for study cases). Ureteroscopies were performed using a standardized technique in patients with renal stone burdens ranging from 5-20 mm. The reusable ureteroscope was used until it was damaged to the point that a major repair was required. Primary outcomes were stone-free rate 6-10 weeks post-procedure and secondary outcomes included length of surgery, laser time, basketing time, deflection of scope at the beginning and end of the case, and a rating scale of scope handling.

Result(s): The mean age was 57.9 years (-13.2), 53.3% male, 73% Caucasian, and 77.6% non-Hispanic or Latino. Upward and downward deflection was significantly better both at the beginning (p < 0.007) and end of the case (p < 0.001, Table 1) with LithoVue. Performance was comparable between scopes for all other intraoperative measures (Table 1). However, scope handling as rated by each surgeon favored the reusable ureteroscope for maneuverability (p = 0.004), visualization (p < 0.001), ability to target the laser on stone (p < 0.001), and overall scope rating (p < 0.001). There was no difference in stone free rate at 4-10 days or 6-10 weeks). The 3

reusable ureteroscopes failed and required a total of 5 repairs during the trial (2 each at OSU and Mayo, 1 at UBC) and averaged 6.6 uses before repair.

Conclusion(s): The LithoVue single-use ureteroscope had better deflection angles pre-and post-operatively when compared to the reusable digital Flex-Xc. Surgeons preferred the reusable flexible ureteroscope handling and visualization, although both scopes produced similar stone free rates. The high rate of breakage of reusable ureteroscopes is concerning and the single-use ureteroscope produced equivalent patient outcomes.

Status

CONFERENCE ABSTRACT

Institution

(Knudsen, Posid, Sourial, Wong, Paterson, Stern, Moore, Humphreys, Chew) Ohio State University

Publisher

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131.

Supine percutaneous nephrolithotomy (PCNL) in horseshoe kidney.

Breish M.O., Sriprasad S., Whiting D., Anjum F., Abdalla O.

Embase

Journal of Endourology. Conference: 38th World Congress of Endourology, WCE 2021. Virtual. 35(SUPPL 1) (pp A69-A70), 2021. Date of Publication: 2021.

[Conference Abstract]

AN: 636616656

Introduction & Objective: Horse-shoe kidney (HSK) is the most common renal fusion anomaly, with reported incidence of 1:400 mainly in males (M: F = 2:1). Nephrolithiasis is frequently occurred in HSK patients with an estimated range of 21%- 60% due to ureteropelvic junction obstruction, urinary stasis, recurrent infections, and metabolic abnormalities. Percutaneous nephrolithotomy (PCNL) is a procedure of choice for a high stone burden in a HSK with overall stone free rate of 72 % to 93.1%, and usually performed while patient in a prone position. In this video we present a case of a supine PCNL performed in our institution to treat stones in HSK.

Method(s): 59 years old gentleman known to have HSK presented with left sided abdominal pain and a past medical history of renal stones. Previously, he was treated for renal calculi using shock wave lithotripsy and ureteroscopy. Blood investigations showed normal kidney function, however non contrast CT KUB demonstrated multiple calculi within the left moiety of HSK. He was counselled to undergo supine PCNL to treat the stone burden. Intraoperatively, the patient was prepared and positioned in the lithotomy position in order to perform retrograde studies. An Occlusion balloon catheter was placed within the ureter. An upper calyx puncture was performed to access the left moiety of HSK. Both hydrophilic and extra stiff guidewires were passed into the lower calyx. the puncture needle was removed leaving the guidewires in place. Balloon dilatation was performed followed by placement 30F Amplatz sheath. Flexible nephroscopy was performed in order to identify and basket the stones out of the kidney. 16 F Malecot nephrostomy was placed and secured.

Result(s): 1-2 days post operatively, the patient developed fever and was treated with Intravenous antibiotics. Post- operative CT KUB showed a patent nephrostomy in situ and confirmed stone free kidney. The nephrostomy was removed on day 7 and the patient was discharged 8 days post- operatively . The patient made a good recovery without major complications and was deemed stone-free following supine PCNL.

Conclusion(s): Supine PCNL is therefore feasible and safe option to treat stones in patients with HSK.

Status

CONFERENCE ABSTRACT

Publisher

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132.

Technical trips and tricks for preserving a flexible ureteroscope during 270 interventions.

Geavlete P.A., Multescu R., Ene C., Bulai C., Geavlete B.F.

Embase

Journal of Endourology. Conference: 38th World Congress of Endourology, WCE 2021. Virtual. 35(SUPPL 1) (pp A209), 2021. Date of Publication: 2021.

[Conference Abstract]

AN: 636616610

Introduction & Objective: In the last years, flexible ureteroscopy (fURS) has become a viable option for the treatment of renal stones because of its high stone-free rates (SFRs) and low morbidity. Our objectives were to describe surgical technique (tips and tricks) for fURS, in order to preserve a digital flexible ureteroscope during over 200 procedures.

Method(s): A retrospective analysis of 210 consecutive patients of which were performed 270 interventions of fURS (using one flexible ureteroscope) between March and October 2017. The ureteroscopy and laser lithotripsy were done using a standardized technique with an Olympus URF-V2 flexible ureteroscope.

Result(s): The mean overall stone size was 17.3- 7.2mm. Ureteral access sheath placement was possible in 203 patients (96.6%). At 1-mo follow-up, the overall primary SFR was 80%; the secondary and tertiary SFRs were 84.7% and 91.9%, respectively. The mean operative time was 72.1- 23.6 min. Complications were reported in 57 patients (27.1%) overall, with Clavien grade 1 in 37 patients, grade 2 in 12 patients, grade 3 in 8 patients and none grade 4 and 5 complications. The flexible ureteroscope had one major repair of the sheath during all the procedures. In order to gain these outcomes, it is essential to properly prepare the patients, select the type of laser and laser settings. The smallest laser fibers are encouraged to be used due to the fact that scopes will be needed to deflect into the lower pole to manage the stone, the optimal fiber size being <275 microns. The patients must be operated under general anesthesia; this will allow the surgeon and the anesthesiologist to control the patients breathing to limit the stone move during fURS. If the stone type allows the stone to be dusted, lower laser setting must be used. Ureteral access sheath must be used at all times to reduce the pressure in the kidney and increase the life of the ureteroscope. Pre-stented cases helped to a better ureteral access.

Additionally, this will help to clear the stone by facilitating the stone passage towards the lower pressure in the sheath.

Conclusion(s): The fURS procedure is safe and effective for the treatment of renal stones.

Respecting some preoperative and operative steps, a large number of procedures could be achieved using the same device.

Status

CONFERENCE ABSTRACT

Institution

(Geavlete, Multescu, Ene, Bulai, Geavlete) "Saint John" Emergency Clinical Hospital, Department of Urology

Publisher

Mary Ann Liebert Inc.

Year of Publication

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133.

The effect of peak power and pulse modulation on lithotripsy particle size.

Yang B., Liu S., Cancino J., Ray A., Hasenberg T.C., Harrah T., Turney B.W.

Embase

Journal of Endourology. Conference: 38th World Congress of Endourology, WCE 2021. Virtual. 35(SUPPL 1) (pp A161), 2021. Date of Publication: 2021.

[Conference Abstract]

AN: 636616597

Introduction & Objective: An ideal laser lithotripsy technology for urinary stone surgery should promote the efficiency of stone destruction, reduce retropulsion, and decrease particle size. We report on a prototype Holmium:YAG laser with a unique pulse modulation technology that delivers

long-duration, high energy pulse packets with numerous micro-pulses per packet. The technology combines high pulse packet energy and moderate peak power and has the potential to increase ablation efficiency and reduce retropulsion. In this study, we evaluate three pulse modulation modes of the prototype laser to determine the efficacy of post-ablation particle size.

Method(s): 242um core fibres were attached to the prototype laser to ablate canine kidney stones in DI water. Two ablation test methods were used to characterize stone ablation performance with and without retropulsion (method-A: hand-held; method-B: hands-free). At fixed total energy delivery, three pulse modulation modes at a range of pulse packet energy/power settings were investigated: 1) standard mode with specialized sub-frequency; 2) special mode at 24 micro-pulse per packet; 3) special mode at 7 micro-pulse per packet. Post-ablation product was sieved via a 2-mm mesh, and the sieved sample was measured to evaluate particle size distribution.

Result(s): Preliminary results of both test methods showed that the prototype laser breaks canine MAPH stones into fine dust with between 90% and 100% of post-ablation particle smaller than 250 mum. Among them, special modes with multiple micro-pulses showed slightly higher percentage of fine dust. At higher power (3J-20Hz-60W) the special modes presented both high ablation rate and fine particle size. At 1J-10Hz-10W, the hand-held test method presented similar ablation rate within three laser modes, while the hands-free test method (allows retropulsion) presented an ablation rate 2.6 times higher in the special modes.

Conclusion(s): The prototype laser, across all settings, demonstrated fine lithotripsy particle size that meets the standard for real-time evacuation during ureteroscopy. The special modes, benefiting from high packet energy and moderate peak power, successfully achieved efficient stone dusting at reduced retropulsion. Overall, the prototype laser is a promising tool for stone ablation with fine particle generation. (Disclaimers: Concept device or technology. Not available for sale).

Status

CONFERENCE ABSTRACT

Institution

(Yang, Liu, Cancino, Ray, Hasenberg, Harrah, Turney) University of Oxford

Publisher

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134.

Efficiency and effectiveness for ureteroscopic stone removal: Dual lumen vs a single lumen ureteroscope.

Brevik A., Peta A., Limfueco L., Karani R., Xie L., Arada R., Sung J., Jefferson F.A., Parkhomenko E., Lama D., Safiullah S., Jiang P., Patel R.M., Clayman R.V., Landman J.

Embase

Journal of Endourology. Conference: 38th World Congress of Endourology, WCE 2021. Virtual. 35(SUPPL 1) (pp A208), 2021. Date of Publication: 2021.

[Conference Abstract]

AN: 636616594

Introduction & Objective: Improved irrigant flow characteristics of the dual lumen flexible ureteroscope (DLFU) (Richard Wolf, Knittlingen, Germany) have been reported since its introduction in 2010; however, no studies have evaluated whether the DLFU results in a more efficient or effective urolithiasis procedure than a single lumen flexible ureteroscope (SLFU).

Method(s): Seventy-nine patients undergoing ureteroscopy between 2016-2020, for a proximal ureteral or renal stone burden ≤ 2 cm were randomly assigned to a SLFU or DLFU.

Ureteroscopy, laser lithotripsy and stone basketing times were recorded. Primary outcomes were procedural efficiency (i.e., ureteroscopy time and rate of stone clearance (mm³/min)) and procedural effectiveness (i.e., absolute (no stones) and relative (≤ 4 mm fragments) stone free rates) based on a post-operative CT scan completed within six months of surgery. For patients with accessible pre-operative and post-operative CT imaging, stone volumes were calculated using a 3D Slicer program. Statistical analysis was performed with R package.

Result(s): Demographics and stone characteristics were similar between the SLFU and DLFU groups (Table 1). With a median follow-up of 50 days (range 1-168 days), the absolute and relative stone free rates were 48% and 77% in the DLFU group compared to 26% and 63% in the SLFU group ($p = 0.045$ and $p = 0.161$), respectively; ureteroscopy time was similar for SLFU and DLFU ($p = 0.984$); however, in cases requiring laser lithotripsy, the lasing time was more than doubled in the SLFU group (2 min, 6 min; $p = 0.017$). Among 57 patients with pre-operative and post-operative CT images, the median rate of stone clearance was 7.1mm³/min for the DLFU group and 3.7mm³/min for the SLFU group ($p = 0.025$) (Table 2).

Conclusion(s): Among patients with proximal ureteral or renal stones ≤ 2 cm, DLFU was associated with a more efficient (i.e. stone clearance rate) and more effective (i.e. absolute and relative stone free rate) procedure than SLFU.

Status

CONFERENCE ABSTRACT

Institution

(Brevik, Peta, Limfueco, Karani, Xie, Arada, Sung, Jefferson, Parkhomenko, Lama, Safiullah, Jiang, Patel, Clayman, Landman) Department of Urology, University of California, Irvine, United States

Publisher

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135.

Antegrade endourological treatment for ureteral stones and ureteroenteric strictures after ileal conduit urinary diversion with Wallace I ureteroileal anastomosis.

Natal Alvarez F., Cuellar Martin L., Martin Martin S., Torrecilla Garcia-Ripoll J., Bedate Nunez M., Alonso Villalba A., Conde Redondo C., Ruano Mayo A., Zamora Horcajada A., Herranz Arriero A., Diaz Romero J.M., Soto Rodriguez J., Lara Perez F., Marfil Pena C., Calleja Escudero J.

Embase

Journal of Endourology. Conference: 38th World Congress of Endourology, WCE 2021. Virtual. 35(SUPPL 1) (pp A186), 2021. Date of Publication: 2021.

[Conference Abstract]

AN: 636616575

Introduction & Objective: The incidence of lithiasis and ureteroenteric strictures after ileal conduit urinary diversion are respectively 1-11% and 1.7-29%. Our aim is to present the resolution of both complications by using an endourological approach, in a patient who underwent radical cystectomy and ileal conduit urinary diversion with Wallace I ureteroileal anastomosis.

Method(s): We present a 76-year-old male, referred to our center, who had undergone radical cystectomy and ileal conduit urinary diversion with Wallace I ureteroileal anastomosis in 2013. A right percutaneous nephrostomy was inserted in the previous months to treat sepsis secondary to urinary obstruction due to a 9mm stone located in mid ureter, diagnosed by non-contrast enhanced computerized tomography (NCCT). Levels of serum creatinine before surgery: 1.9 mg/dl. Antegrade flexible ureterorenoscopy was performed after placement of a 10-12 French (Fr) ureteral access sheath through the previous nephrostomy. Holmium laser lithotripsy was performed, all the fragments were removed with a basket. Several unsuccessful attempts were made to place a Sensor guidewire into the urinary diversion, but minimum contrast passing was seen. Finally, a Terumo guidewire and a 4 Fr ureteral stent allowed access to the urinary diversion. The previous guidewire was replaced with an Amplatz guidewire. Pneumatic dilatation of the ureteral stricture was carried out (high-pressure balloon). An M-Drain 8 Fr catheter was passed in an antegrade way to the ileal conduit at the end of the procedure.

Result(s): In the early postoperative period the patient developed fever, left renal colic pain and acute kidney failure. Compression of the contralateral ureter by the M-drain was suspected, leading to the withdrawal of the catheter by the 5th postoperative day after having checked its permeability and the absence of ureteral leakage. The previous signs and symptoms quickly disappeared. Neither residual stone fragments nor hydronephrosis were found at his 3-months NCCT assessment. Current serum creatinine levels: 1.87 mg/dl.

Conclusion(s): Antegrade flexible ureterorenoscopy might be the most effective treatment for stones and ureteric strictures in these patients. Endoscopic pneumatic balloon dilation could be a noninvasive solution for the treatment of ureteric strictures in these cases. Ureteral stents must be used carefully in Wallace I ureteroileal anastomosis, as they can induce contralateral ureter compression.

Status

CONFERENCE ABSTRACT

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136.

Safety and feasibility of intraoperative realtime digital stone fragment measurement during ureteroscopy.

Becker R., Koo K., Aro T., Winoker J.S., Lim S., Petrisor D., Stoianovici D., Matlaga B.R.

Embase

Journal of Endourology. Conference: 38th World Congress of Endourology, WCE 2021. Virtual. 35(SUPPL 1) (pp A41), 2021. Date of Publication: 2021.

[Conference Abstract]

AN: 636616548

Introduction & Objective: Estimating the size of stone fragments during ureteroscopy is critical for determining the adequacy of stone fragmentation, likelihood of spontaneous fragment passage, and ability to safely extract fragments through the ureter or ureteral access sheath. We previously developed and validated an image processing software that enables digital measurements of stone fragment size during ureteroscopy. This study assesses the safety and feasibility of performing real-time in vivo stone fragment measurement and integrating its use into live operating room workflow.

Method(s): Adult patients >18 years old undergoing ureteroscopic stone procedures for renal or proximal ureteral calculi by 2 surgeons at a single center were enrolled prospectively. The software was used to perform a representative series of real-time intraoperative stone fragment measurements. The time required to perform each measurement or series of measurements was recorded, including snaring the fragment with a stone retrieval basket, initiation of the digital measurement by the surgeon, and confirmation of size calculation. Software-related failures, clinical complications, and delays were also recorded. Ethics approval of the feasibility study protocol required that the measurements have no impact on clinical decision-making; thus surgeons were blinded to the results.

Result(s): Nine patients undergoing ureteroscopic stone treatment were enrolled. Median age was 50 years (range 25-75). Six (67%) patients were female. Five (56%) procedures were rightsided. Intraoperative real-time measurement of stone fragments was successfully completed

in all patients. The median number of measurements performed was 5 (range 3-10). The mean time for each measurement, from snaring the fragment until size calculation, was 9.9 seconds (s) (range 7.1-14.9 s). The median total time spent performing digital measurement per procedure was 50 s (range 25-99 s). There were no technical failures of the software or ureteroscope. No measurement-related delays or clinical complications were observed peri-operatively.

Conclusion(s): Intraoperative digital stone measurement can be safely performed during ureteroscopy and integrated into operating room workflow, with minimal additional time and no observed complications. These data support a prospective trial of digital stone measurement to guide intraoperative decisionmaking.

Status

CONFERENCE ABSTRACT

Institution

(Becker, Koo, Aro, Winoker, Lim, Petrisor, Stoianovici, Matlaga) James Buchanan Brady
Urological Institute, Johns Hopkins Medical Institutions

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137.

Using Hounsfield unit (HU)-volume models of kidney stones to predict successful stone dusting during retrograde intra-renal surgery (RIRS).

Kim D., Jeon S., Lee C., Chang S., Lee S.

Embase

Journal of Endourology. Conference: 38th World Congress of Endourology, WCE 2021. Virtual. 35(SUPPL 1) (pp A61-A62), 2021. Date of Publication: 2021.

[Conference Abstract]

AN: 636616440

Introduction & Objective: Computer tomography (CT) of renal stones and measurement of their Hounsfield unit (HU) is commonly used for evaluation before the treatment of urolithiasis. We measured the volume of all HUs in a single stone and drew a model depicting the stone's HU distribution in order to predict success of dusting technique during retrograde intrarenal surgery (RIRS).

Method(s): The medical records of 131 patients who underwent RIRS from January 2018 to January 2019 at Kyung Hee University Hospital were reviewed and 168 kidney stones were initially examined. Stones that were larger than 1cm were included and a total of 49 patients with 55 stones were evaluated. The stones were divided into two groups according to intraoperative dusting success. Dusting was considered successful when stone disintegration was achieved with a laser setting of energy 0.2-0.4 J and frequency 50 Hz. If higher laser energy settings (fragmentation) and extraction was needed, it was considered as dusting failure. 3-dimensional models of the stones were reconstructed, and maximal HU, minimal HU, difference between max and minimal HU, HU standard deviation, stone volume, volume of peak HU was evaluated.

Result(s): Among the total 55 stones, 32 were successfully dusted and 23 were fragmented during surgery. Dusted stones showed a more heterogenous distribution of HU while fragmented stone HUs were more homogenous. "Success of dusting" group had higher mean difference in max and minimal HU (1102.94 +/- 376.63 vs 794.91 +/- 415.05, $p = 0.0073$), higher HU standard deviation (262.73 +/- 112.61 vs 155.65 +/- 95.69, $p = 0.001$) and smaller volume of peak HU (4.52 +/- 2.53 vs 13.28 +/- 8.10, $p < 0.0001$). When we drew histograms of the HU, dusted stones were wide and rugged while fragmented stones were mostly narrow and peaked.

Conclusion(s): Stone reconstruction models and evaluation of HU volumes showed that stones with smaller peak HU volumes and higher differences in max and minimal HU could be considered more fragile and prone to successful dusting. Stones that show this type of HU distribution should be considered candidates for RIRS even if their size is larger than current recommendations. (Table Presented).

Status

CONFERENCE ABSTRACT

Institution

(Kim, Jeon, Lee, Lee, Chang, Lee) Department of Urology, School of Medicine, Kyung Hee University

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138.

60Watt superpulse thulium fiber laser in retrograde intrarenal surgery-aiming towards faster dust.
Vaddi D., Ramakrishna P., Siddalinga Swamy P., Manas Babu B., Soundarya G., Hemnath A.,
Rakesh P.

Embase

Journal of Endourology. Conference: 38th World Congress of Endourology, WCE 2021. Virtual.
35(SUPPL 1) (pp A153-A154), 2021. Date of Publication: 2021.

[Conference Abstract]

AN: 636616393

Introduction & Objective: In the recent years, Thulium fiber laser (TFL) has been producing promising results in preclinical studies. Objective is to evaluate the efficacy and safety of TFL during Retrograde intrarenal surgery (RIRS). Secondary aim is to analyse the optimal mode of lithotripsy with 60Watt TFL
Methods: A prospective study was done on 109 patients with less than 20mm renal stones, who underwent RIRS using TFL (IPG Photonics, Oxford, Massachusetts, United States). Stone size, volume, density, laser on time (LOT), total energy delivered (kJ), fiber burn-back were recorded. Laser efficacy (J/mm³), ablation speed (mm³/sec) were calculated. Visibility was graded using 5-point Likert's scale (5-best, 4-good, 3-intermediate, 2-bad, 1-worst). Stone-free rate (SFR) was calculated using CT at 3 months post operatively
Results: Mean age was 42.03+/-11.30 years; mean stone size was 13.34+/-3.59mm, mean stone volume was 1061.85+/-806.81mm³, mean stone density was 985.82- 302.57 HU. The settings used were 0.1-0.2J, 60-100Hz (6-20W) in Dusting mode, 1-2J, 6-30Hz (6-45W) in Fragmentation mode and 0.1+/-0.2J, 100-300Hz (5-55 W) in Popcorning mode. Mean LOT was 19.78+/-12.32 minutes. Mean energy consumed was 13.06+/-8.93 KiloJoules. Mean laser efficacy was 14.35+/-5.70 J/mm³. Mean ablation speed was 0.86- 0.31mm³/sec. Subgroup analysis revealed LOT was lesser with fragmentation mode compared to dusting mode (18.49- 11.90 vs 21.25+/-12.75min, p

= 0.169), ablation speed was higher in fragmentationmode (0.94+/-0.32mm³/sec vs 0.77- 0.27, p = 0.005). Visibility was poor in fragmentationmode (Visibility > grade 3 was present in 57.1% vs 81.1%) and fiber burn-back was higher (2.46- 3.83 vs 0.48- 0.97mm, p < 0.001). Overall SFR was 95.4%. 39.4% had complications namely hematuria and fever, out of which 37.6% (41/109) were Clavien grade 1.

Conclusion(s): Superpulse TFL is efficacious and safe. Faster lithotripsy was achieved with fragmentation mode, at the cost of increased fiber burn-back.

Status

CONFERENCE ABSTRACT

Institution

(Vaddi, Ramakrishna, Siddalinga Swamy, Manas Babu, Soundarya, Hemnath, Rakesh) Preeti
Urology, Kidney Hospital

Publisher

Mary Ann Liebert Inc.

Year of Publication

2021

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139.

High power laser for high stone free rates in 1 sitting-is it achievable?: A prospective single centre asian experience.

Mangat R., Biligere S., Yufei Q.

Embase

Journal of Endourology. Conference: 38th World Congress of Endourology, WCE 2021. Virtual. 35(SUPPL 1) (pp A152-A153), 2021. Date of Publication: 2021.

[Conference Abstract]

AN: 636616378

Introduction & Objective: 60-120 watt Holmium laser has revolutionized Retrograde Intrarenal surgery (RIRS) . Best outcome is when we can produce high Stone Free Rates (SFR) in a single sitting Assess our outcomes in SFR with high power laser (HP-RIRS) for renal stones and analyse the predictive factors for stone free rate (SFR) in our practice.

Method(s): Single centre, prospective study, Jan 2018-2020. 133 renal units underwent HP-RIRS in the MEL position (figure 1) with a Lumenis 120watt laser (1). SFR defined as: no visible stones or clinically insignificant residual fragments (CIRF) <3mm on postop CT scan 1-3 months post-op. Predictive factors for SFR were evaluated based on demographics, stone burden and stone location.

Result(s): Table 1 Table 2 Chart 1 The mean cumulative stone burden was 16.79+/-10.42 mm. Overall SFR was 92.5%. The overall complication rate was 5.6%.

Conclusion(s): We achieved excellent overall SFR in a single setting. Like most studies predictably low stone burden had most favourable outcome However with Lithovue and HPRIRS in our series we had excellent lower pole SFR despite in-situ , non repositioning pop-dusting . This because with HP laser we can vary multiple settings favourably. MEL position, gated respiration and endoflow Traxier pump allowed for focussed lithotripsy with better vision.

Status

CONFERENCE ABSTRACT

Institution

(Mangat, Yufei, Biligere, Yufei) Dept. of Urology

Publisher

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RIRS using superpulse thulium fiber laser in patients with kidney stones 2 cm or greater.

Sytnik D.A., Popov S., Orlov I., Pazin I., Suleymanov M., Kulikov A.

Embase

Journal of Endourology. Conference: 38th World Congress of Endourology, WCE 2021. Virtual. 35(SUPPL 1) (pp A224), 2021. Date of Publication: 2021.

[Conference Abstract]

AN: 636616362

Introduction & Objective: Percutaneous nephrolithotomy is the gold standard in the treatment of kidney stones greater than 2 cm. Retrograde intrarenal surgery (RIRS) using Ho:YAG laser is the operation of choice for these stone sizes and is highly effective and safe. In recent years the SuperPulse Thulium Fiber Laser (SPTFL) has become increasingly popular in intrarenal surgery. The aim of the study was to assess the effectiveness and safety of RIRS with using SPTFL in patients with kidney stones 2 cm or greater.

Method(s): The study included 12 patients: 7 men and 5 women. The average age of the patients was 64+/-11 years. Inclusion criteria: the size of the stone was not less than 2 cm (25+/-4 mm), the solitary stone of the kidney, the presence of a ureteral stent at least 6 days before surgery. Exclusion criteria: the presence of urinary tract infection, urinary tract abnormalities. RIRS was performed using a flexible ureteroscope Olympus URF-V3 with using a SPTFL (IPG Photonics, FiberLase U2). Fiber thickness was 150 microns. Fragmentation mode was "dusting" (0.1Jx200Hz). All patients underwent ureteral stenting at the end of the surgery. The following parameters were evaluated: time of surgery; SFR level, based on Computed tomography of kidneys, ureters and bladder (CT KUB); complications in the postoperative period.

Result(s): The average duration of surgery was 49.3+/-12.3 minutes. The SFR level was 91.6%. According to CT KUB, residual fragments of more than 4mm were visualized in one patient. The total percentage of complications was 8.33% (1 patient had a Grade 1 complication, according to the Clavien-Dindo classification (fever on the 1st day after surgery). On the 7th day after surgery 10 patients had a ureteral stent removed after CT KUB. One patient underwent repeated RIRS

Conclusion(s): RIRS with the use of SPTFL in patients with kidney stone 2 cm or greater was characterized by high efficiency and safety.

Status

CONFERENCE ABSTRACT

Institution

(Sytnik, Popov, Orlov, Pazin, Suleymanov, Kulikov) St. Luke's Clinical Hospital

Publisher

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Year of Publication

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141.

Laparoscopic uretero-calicostomy for a patient with uretero-pelvic obstruction, intrarenal pelvis and multiple caliceal stones.

Kashi A., Farshid S., Ghanaat I., Ahmadian N.

Embase

Journal of Endourology. Conference: 38th World Congress of Endourology, WCE 2021. Virtual. 35(SUPPL 1) (pp A129), 2021. Date of Publication: 2021.

[Conference Abstract]

AN: 636616341

Introduction & Objective: Ureterocalicostomy is reconstructive surgery to establish upper system continuity in the condition such as recurrent UPJO with fibrotic and intra-renal pelvis or primary stenosis of ureteropelvic junction with intrarenal pelvis **Methods:** A 30-year-old female with history of recurrent urinary tract infections and left side pain, was referred to our clinic. After imaging work-up left side UPJO with calyceal stones was diagnosed, intravenous urography showed dilated calyx without prominent pelvis. In DMSA scan, left side differential renal function was 35%. Since the pelvis wasn't dilated and the parenchyma of kidney lower pole was thin, ureterocalicostomy was the planned.

Result(s): During laparoscopy, after finding the ureter and chasing it up to pelvis, a small intrarenal pelvis was found. The proximal ureter was ligated with 0 silk sutures, then lower pole kidney parenchyma was resected. For stone extraction, an 8.5 F Wolf ureteroscope was introduced through lower trocar and entered inside kidney through opening of lower pole calyx and stones were extracted by basketing. The ureter was spatulated and anastomosed to lower pole calyceal system with 0-4 vicryl sutures in runningmode. Finally, the anastomose was dependent and water tight. The patient was discharged 3 days after surgery without complication,

and after 6 weeks double-j stent was extracted. During follow up after 6 months, no urologic complaint was observed.

Conclusion(s): laparoscopic pyeloplasty is surgery of choice for UPJO, recently laparoscopic ureterocalicostomy was advised , particularly in patients with UPJO and thin parenchyma in lower pole of the kidney , during laparoscopic surgeries sometimes it is difficult to extract calyceal stones, ureteroscope can be used through the trocars for calyceal stone extraction.

Status

CONFERENCE ABSTRACT

Publisher

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142.

Outcomes of Ureteroscopy and laser stone fragmentation (URSL) for kidney stone disease (KSD): Comparative cohort study using MOSES technology 60W laser system versus regular Holmium 20W laser'.

Hughes T., Pietropaolo A., Sinha M., Somani B.K.

Embase

Journal of Endourology. Conference: 38th World Congress of Endourology, WCE 2021. Virtual. 35(SUPPL 1) (pp A221-A222), 2021. Date of Publication: 2021.

[Conference Abstract]

AN: 636616290

Introduction & Objective: Ureteroscopy and laser stone fragmentation (URSL) has risen over the last 2 decades. The use of laser technology has also shifted from low power to higher power lasers and the addition of MOSES technology, that allows for 'dusting and pop-dusting' of stones.

We wanted to compare the outcomes of URSL for MOSES technology 60W laser system versus matched regular Holmium 20W laser cases.

Method(s): Prospective data was collected for patients who underwent URSL for kidney stone disease (KSD) using a MOSES 60W laser (Group A) to historical matched control data using a regular Holmium 20W laser (Group B), performed by a single surgeon. Data was collected for patient demographics, stone location, size, pre-and post-operative stent, operative time, length of stay, complications and stone free rate (SFR).

Result(s): A total of 38 patients in each group underwent URSL procedure. The stones were matched for their location with 17 renal and 11 ureteric stones in each group. The mean single and cumulative stone sizes (mm) were 10.9+/-4.4 and 15.5+/-9.9, and 11.8+/-4.0 and 16.5+/-11.3 for groups A and B respectively. The mean operative time (min) was 51.6+/-17.1 and 82.1+/-27.0 ($P < 0.0001$) for groups A and B. The initial stone free rate (SFR) was 97.3% and 81.6% for groups A and B respectively ($P = 0.05$), with 1 and 7 patients in both group needing a second procedure ($P = 0.05$), for a final SFR of 100% and 97.3% in both the groups. While there were 2 and 5 complications for groups A and B, none of the patients in group A had any infection related complication.

Conclusion(s): Use of MOSES technology with higher power was significantly faster for stone lithotripsy and reduced operative time and the number of patients who needed a second procedure to achieve a stone free status. The complications were all Clavien I/II in both groups, but with lower complications in group A and no infectious complications noted in this group. It seems that the use of MOSES technology with a high power laser is likely to set a new benchmark for treating large stones, bilateral or multiple stones in a single setting, without the need for secondary procedures in most patients.

Status

CONFERENCE ABSTRACT

Institution

(Hughes, Pietropaolo, Sinha, Somani) Southampton University Hospital

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143.

Thulium laser dusting of a partial staghorn stone via 14Fr Super-mini percutaneous approach-technique and optimal laser settings.

Edison E., Reid T., Vitale R., De Luyk N., Arumuham V., Allen C., Choong S.

Embase

Journal of Endourology. Conference: 38th World Congress of Endourology, WCE 2021. Virtual. 35(SUPPL 1) (pp A72-A73), 2021. Date of Publication: 2021.

[Conference Abstract]

AN: 636616090

Introduction & Objective: The capability of Thulium Fibre Laser (TFL) lithotripsy to dust stones compliments the continuous suction of Super-mini percutaneous approach (SMP) in treating kidney stones. Compared to Holmium:YAG, TFL can deliver more power, through smaller fibres, with a wider range of energy, frequency and pulse length parameters, with higher water absorption and more efficient stone ablation. Thus TFL is an excellent novel technique for SMP lithotripsy. The objectives of this video are to demonstrate use of TFL via SMP for a partial staghorn, and by varying the energy, frequency and pulse duration, to demonstrate optimal laser settings.

Method(s): Video is recorded from the 14Fr SMP of a partial staghorn cystine stone, 3.5 x 2.5 cm (650 HU). SMP access was obtained with ultrasound and fluoroscopic guidance and serial dilation to 14Fr. A 14Fr 13cm ClearPetra sheath and a 7.5Fr Storz Nephroscope was used, with a 365µm TFL (Olympus Soltive). There was continuous irrigation through the scope, and independently controlled continuous suction through the sheath. Modifiable parameters of energy (0.025 to 6J) and frequency (1 to 2400Hz) are available in combinations up to maximum power of 60w. Pulse duration is short, medium or long (200µs to 50ms). Various laser settings are demonstrated and evaluated.

Result(s): With a total laser time of 22 minutes, delivering 71.01kJ, the kidney was clear of stone on direct vision and fluoroscopy. A ureteric stent was left, with no nephrostomy. The patient was discharged on the same day with no complications. Follow up CT at 1 month demonstrated a 3mm interpolar calcification. Relook ureterorenoscopy during stent removal demonstrated this to be parenchymal. The optimal laser setting was found to be 0.6J / 100Hz / long pulse. This allowed for rapid, efficient stone dusting with fine fragments large enough for stone analysis.

Higher frequencies involved extremely fine dusting which was slower. Some settings (as seen on video) induced large amounts of bubbles that obscured the view. These findings are corroborated by the authors' experience in other patients.

Conclusion(s): Thulium fibre laser lithotripsy allows for safe, rapid stone dusting. Super-mini access allows for continuous irrigation and suction to maintain views, dissipate heat, and maintain low renal pelvic pressure, enabling uninterrupted lasering. The convergence of these technologies means that larger stones and partial staghorns can be managed safely and effectively as a day case procedure.

Status

CONFERENCE ABSTRACT

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144.

5 Key steps for high-frequency ureteroscopic dusting technique: Illustration with moses 2.0 technology.

Khajeh N.R., Ghani K.R.

Embase

Journal of Endourology. Conference: 38th World Congress of Endourology, WCE 2021. Virtual. 35(SUPPL 1) (pp A190), 2021. Date of Publication: 2021.

[Conference Abstract]

AN: 636616077

Introduction & Objective: Advances in holmium laser technology such as pulse modulation with Moses Technology™ have resulted in greater fragmentation efficiency and reduced stone

retropulsion. With the release of Moses 2.0, pulse frequencies of up to 120 Hz are now available. In this video we highlight key steps for ureteroscopy (URS) high-frequency dusting technique through an illustrative example using the Moses 2.0 holmium laser.

Method(s): Five key strategies for high frequency dusting technique reviewed in this video include: 1) stent omission criteria, 2) ureteral access sheath (UAS) decision making, 3) irrigation, 4) patient & stone positioning, and 5) laser parameter selection. A single case of a patient with a large renal stone treated with high frequency (120Hz) dusting technique using Moses 2.0 Ho:YAG laser (Lumenis) with a 230-core ball-tip laser fiber is presented.

Result(s): A patient with a left-sided 1.7 cm renal pelvis stone underwent dusting URS. UAS was used to decrease intrarenal pressure and allow higher irrigation flow rates. The patient was positioned in Trendelenburg and stone nudged into an upper pole location to control fragments and optimize eventual pop-dusting. Contact laser lithotripsy was performed to systematically debulk the stone via chipping, painting, and dancing techniques using 0.3 J x 120 Hz. Once the stone fragmented, non-contact popdusting was used with the same laser setting and higher power setting (0.5 J x 80Hz). The renal stone was treated in a single stage for a total lithotripsy time of 23 minutes (lasing time 16 minutes 34 seconds; 33280 J). Post-operative computed tomography 6 weeks later demonstrated a 1mm residual fragment.

Conclusion(s): Advances in pulsem modulation have made it feasible to dust large (1.5-2 cm) renal stones in a single stage in less than 30 minutes with excellent stone clearance. When using Moses 2.0 we have found the optimal setting to be 0.3J x 120Hz, which is feasible for both contact and non-contact laser lithotripsy.

Status

CONFERENCE ABSTRACT

Institution

(Khajeh, Ghani) Department of Urology, University of Michigan

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145.

Efficacy of one-surgeon basketing technique for stone extraction during flexible ureteroscopy for urolithiasis.

Anan G., Hattori K., Hatakeyama S., Ohyama C., Sato M.

Embase

Arab Journal of Urology. 19(4) (pp 447-453), 2021. Date of Publication: 2021.

[Article]

AN: 2010539987

Objective: To evaluate the safety and efficacy of using one-surgeon basketing technique by a solo surgeon for stone extraction during flexible ureteroscopy (f-URS) for urolithiasis.

Patients and Methods: This retrospective study enrolled patients with urinary calculus who underwent f-URS at two institutions in Japan between September 2014 and March 2020. A total of 100 patients were operated by one experienced surgeon using the one-surgeon basketing technique. With this approach, the f-URS apparatus was manipulated with the non-dominant hand and the basket catheter was manipulated with the dominant hand. We retrospectively examined the perioperative results, complications, and stone-free rate [with 'stone free' defined as ≤ 2 mm with kidney-ureter-bladder (KUB) at 1 month after f-URS] to estimate the safety and efficacy for comparison with the results of conventional retrieval basketing technique.

Result(s): Among our study population, the median stone size was 14 mm and median operative time was 74 min. A stone-free status was achieved in 91 patients (91%). The median stone fragmentation time was 15 min and stone retrieval time was 30 min. All included patients were treated using the one-surgeon basketing technique. Complications related to stone retrieval were identified in two patients (2%); the degree of ureteral injury was classified as Clavien-Dindo Grade IIIa.

Conclusion(s): The one-surgeon basketing technique is safe and effective for the extraction of stone fragments during f-URS for urolithiasis. This technique does not require assistance for basketing; therefore, f-URS with active retrieval basketing can be completed by a solo surgeon.

Abbreviations: BMI: body mass index; KUB: kidney-ureter-bladder; SFR: stone-free rate; UAS: ureteral access sheath; f-URS: flexible ureteroscopy.

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Status

In-Process

Author NameID

Anan, Go; ORCID: <http://orcid.org/0000-0001-8325-2606>

Institution

(Anan, Sato) Department of Urology, Tohoku Medical and Pharmaceutical University, Sendai,

Japan (Anan, Hattori) Department of Urology, St. Luke's International Hospital, Tokyo, Japan

(Anan, Hatakeyama, Ohyama) Department of Urology, Hirosaki University Graduate School of Medicine, Hirosaki, Japan

Publisher

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146.

Retrieval of intrarenal coiled and ruptured guidewire by retrograde intrarenal surgery: A case report and literature review.

Chen B.-H., Chang T.-H., Chen M., Chen Y.-H.

Embase

Open Medicine (Poland). 16(1) (pp 1728-1732), 2021. Date of Publication: 01 Jan 2021.

[Review]

AN: 2015706894

Background: Foreign bodies in the kidney have rarely been reported. However, they can be a clinical problem for urologists. We report on a patient with a residual segment of guidewire coating embedded in the renal parenchyma following computed tomography (CT)-guided percutaneous nephrostomy drainage (PCND), and our successful minimally invasive management with retrograde intrarenal surgery (RIRS). Case presentation: A 40-year-old female with urosepsis due to a right upper ureteral stone with hydronephrosis received emergent CT-

guided PCND and subsequent ureteroscopic lithotripsy, double J stent insertion, and percutaneous catheter removal. Follow-up radiography showed a coiled object within the upper pole parenchyma of the right kidney, which might be the remnant of a guidewire used during the PCND procedure. Flexible ureteroscopy (fURS) was performed. Under fluoroscopy, the foreign body was localized, the renal parenchyma was incised with laser, and the foreign body was retrieved using a stone basket.

Conclusion(s): Although guidewire breakage is uncommon, clinicians should keep it in mind during interventional procedures. Several methods can be used to eradicate foreign objects from the urinary tract, and the first choice should always be the least invasive one. RIRS with fURS is considered as a safe, efficient, and minimally invasive option for the extraction of foreign bodies from the kidney. To the best of our knowledge, this is the first comprehensive case report detailing the removal of a foreign object by RIRS in the English literature.

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Status

Embase

Institution

(Chen, Chang, Chen) Department of Urology, MacKay Memorial Hospital, Zhongshan District, Taipei, Taiwan (Republic of China) (Chen, Chen) Department of Medicine, Mackay Medical College, New Taipei City, Taiwan (Republic of China)

(Chen) Institute of Pharmacology, School of Medicine, National Yang-Ming University, Taipei, Taiwan (Republic of China)

(Chen) Department of Urology, MacKay Memorial Hospital, No. 92, Sec. 2, Zhongshan N. Rd., Zhongshan District, Taipei, Taiwan (Republic of China)

Publisher

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147.

RIRS is equally efficient in patients with different BMI scores.

Alkan E., Arpali E., Ozkanli A.O., Basar M.M., Acar O., Balbay M.D.

Embase

Urolithiasis. (no pagination), 2015. Date of Publication: 09 Jan 2015.

[Article In Press]

AN: 602140478

The objective of the study was to ascertain whether flexible ureteroscopy with holmium laser lithotripsy and/or extraction of stone fragments is as effective in obese patients as in non-obese patients. The patients were divided into four groups (group 1: normal weight = 79 procedures, group 2: overweight = 123 procedures, group 3: obese = 87 procedures, and group 4: morbidly obese = 20 procedures) according to BMI cohorts. Patient charts were retrospectively reviewed and relevant data collected. A total of 309 operations were included in the present study. The overall mean $\pm$ SD (range) age was 41 $\pm$ 12 years (18-82), BMI 29 $\pm$ 6 kg/m² (18-52), operative time 64 $\pm$ 29 min (20-200), hospital stay 25 $\pm$ 11 h (4-168), stone number 3 $\pm$ 2 (1-15), stone burden 21 $\pm$ 14 mm (4-98), and internal stenting time 26 $\pm$ 8 days (2-60). Mean stone size was 10 $\pm$ 6, 9 $\pm$ 5, 11 $\pm$ 8, and 11 $\pm$ 8 mm for groups 1 through 4, respectively. There were no differences among groups regarding patients and stone characteristics, and perioperative parameters including patient age, operative time, hospital stay, and complications. Overall SFRs were similar between groups (81, 87, 87.4, and 85 %, respectively; $\chi^2=3.304$, $p=0.770$) as were the complication rates (12-16 %). Our contemporary Retrograde Intrarenal Surgery (RIRS) series showed that operative times, hospital stays, ancillary equipment use (internal stent, basket, etc.), SFRs, and complication rates were independent of BMI. Therefore, RIRS can be performed as efficiently and efficaciously in obese patients as in non-obese patients.

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PMC Identifier

25572954 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=25572954>]

Status

Article-In-Press

Institution

(Alkan, Arpali, Basar, Acar, Balbay) Department of Urology, Memorial Sisli Hospital, Sisli-Istanbul, Okmeydani 34385, Turkey (Ozkanli) Department of Anesthesiology, Memorial Sisli Hospital, Sisli-Istanbul, Turkey

Publisher

Springer Verlag (E-mail: service@springer.de)

Year of Publication

2015

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148.

Single-use ureteroscopes in ectopic pelvic kidney stones.

Geavlete B., Popescu R., Georgescu D., Geavlete P.

Embase

Journal of medicine and life. 14(4) (pp 557-564), 2021. Date of Publication: 01 Jul 2021.

[Article]

AN: 636322951

We analyzed the results of single-use flexible ureteroscopy (su-fURS) with the holmium laser in treating renal stones associated with ectopic pelvic kidney (EPK). The study retrospectively analyzed data of 11 patients diagnosed with EPK and stone disease who underwent su-fURS between May 2017 and November 2019. The analyzed surgical data included the mean operation time, stone-free and complication rates, as well as hospitalization period. Disposable digital flexible ureteroscopes were exclusively used. The mean age was 55, with a 1.2:1 male to female ratio. The mean stone burden was 30+/-9 mm (ranging from 17 to 49 mm). The mean calculi digitized surface area (DSA) was 299+/-56 mm² (ranging from 170 to 597 mm²). A ureteral access sheath was used in all 11 patients, and holmium laser lithotripsy was performed (dusting mode parameters: low energy - 0.5J, high frequency - 50 Hz, long pulse; pop-corn mode: high energy >1 J, medium frequency- 10-50 Hz, long pulse; fragmenting mode: high energy >1 J, low frequency <10 Hz, short pulse). The average operative time was 78+/-19 minutes (ranging from 68 to 144 minutes). The stone-free status (residual fragments <3 mm) after one session was 60.1%, 84.1% after the second session, and 94.4% after the third session. The hospitalization period was 29 hours (ranging from 17 to 39 hours). The overall complications rate (according to

the Clavien-Dindo system) was 19.7%. Therefore, su-fURS represents an effective therapeutic approach characterized by a remarkably high stone-free rate and few complications in EPK-associated calculi.

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PMC Identifier

34621382 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=34621382>]

Institution

(Geavlete, Georgescu, Geavlete) Sanador Hospital, Bucharest, Romania (Geavlete, Popescu, Georgescu, Geavlete) Department of Urology, Sf. Ioan Emergency Clinical Hospital, Bucharest, Romania

Publisher

NLM (Medline)

Year of Publication

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149.

Outcomes of flexible uretrorenoscopy for solitary renal stones up to 15 mm, hits and misses: A single-surgeon experience.

Gupta R., Mahajan A., Gupta S., Masood S.

Embase

Urology Annals. 13(3) (pp 258-262), 2021. Date of Publication: July-September 2021.

[Article]

AN: 635550092

Abstract: Introduction: In this study, we retrospectively evaluated the outcomes of flexible uretrorenoscopy (fURS) for removal of solitary renal stones sized up to 15 mm.

Material(s) and Method(s): We evaluated the data of 115 patients who underwent fURS at our unit between Jan 2018 and Dec 2019. All fURS were performed by a single surgeon using Flex-2 flexiscope. Ureteral Access sheath (UAS) of size 9/11 fr was used in all patients. Stones were fragmented using 20 watts laser. Few fragments were retrieved using Nitinol zero tip basket for assessment of the passability of remaining dust and sent for stone analysis. Data pertaining to demographic characteristics, stone size, stone site, operative time, intra and post operative complications were retrieved from the records.

Result(s): Of the 115 patients who underwent fURS, 71 (61.7%) were male and 44 (38.2%) were female. Average age of patients was 32.9+/-8.9 years; the average body mass index was 22.9+/-3.9 kg/m². Average size of the stone was 11.0+/-1.5 x 10.2+/-1.3 mm. The stone free rates at the end of 3 weeks and 3 months were 97% and 99%, respectively.

Conclusion(s): fURS is an effective minimally-invasive procedure for removal of single stones up to 15 mm in size. We observed minimal morbidity rates and acceptable stone free rates in our series.

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Status

Embase

Institution

(Gupta, Gupta, Masood) Department of Urology, Government Medical College, Jammu, Jammu and Kashmir, India (Mahajan) Department of Anaesthesia, ASCOMS, Jammu, Jammu and Kashmir, India

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Operator-assisted vs self-achieved basketing during ureteroscopy: results from an in vitro preference study.

Ventimiglia E., Sindhubodee S., Besombes T., Pauchard F., Quadrini F., Delbarre B., Jimenez Godinez A., Barghouthy Y., Corrales Acosta M.A., Kamkoum H., Villa L., Doizi S., Somani B.K., Traxer O.

Embase

World journal of urology. 39(6) (pp 2169-2175), 2021. Date of Publication: 01 Jun 2021.

[Article]

AN: 633125210

OBJECTIVES: A recently introduced device (LithoVue Empower™ or LE, Boston Scientifics, USA) allows the surgeon to directly control the stone-retrieving basket without the need of an assistant during flexible ureteroscopy. We aimed to evaluate the stone-retrieval performance of this device.

METHOD(S): We used a bench-training model for flexible ureteroscopy, the Key-box (K-Box, Porges-Coloplast, France), to compare the LE configured with a 1.9F stone-retrieval tipless basket (ZeroTip™, Boston Scientific, USA) and a traditional assistant-maneuvered 1.9F stone-retrieval tipless basket. Seven experienced endo-urologists and seven residents-in-training retrieved a fake stone from three different renal cavities of the K-Box with increasing access complexity first with the traditional basket and then with the LE device. We recorded retrieval time and all the operators filled in the NASA Task Load Index (TLI) for the self-evaluation of their performance. We then compared the use of LE in terms of retrieval time, failure rates, and NASA-TLI scores.

RESULT(S): Stone retrieval times and failure rates were similar according to the retrieval technique, although residents had non-statistically significant shorter times with the LE. NASA-TLI scores revealed lower frustration ($p=0.03$) when LE was used by experienced urologists as compared to the traditional basketing. When stratifying the analyses according to surgical experience, fully trained urologists performed faster stone retrieval and showed lower effort scores than residents-in-training ($p<0.05$).

CONCLUSION(S): The individually controlled retrieval system is an effective device assisting stone retrieval and does not necessitate specific training among experienced endo-urologists. Young residents might benefit from LE during their learning curve.

PMC Identifier

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Author NameID

Ventimiglia, Eugenio; ORCID: <http://orcid.org/0000-0003-3654-1629>

Institution

(Ventimiglia, Sindhubodee, Besombes, Pauchard, Quadrini, Barghouthy, Corrales Acosta, Doizi, Traxer) Groupe de Recherche Clinique sur la Lithiase Urinaire, Sorbonne Universite, Hopital Tenon, Paris 75020, France (Ventimiglia, Sindhubodee, Besombes, Pauchard, Quadrini, Barghouthy, Corrales Acosta, Doizi, Traxer) Service d'Urologie, Assistance-Publique Hopitaux de Paris, Sorbonne Universite, Hopital Tenon 4 rue de la Chine, Paris 75020, France (Ventimiglia, Villa) Division of Experimental Oncology/Unit of Urology, URI-Urological Research Institute, IRCCS Ospedale San Raffaele, Milan 20132, Italy (Sindhubodee) Division of Urology, Department of Surgery, Rajavithi Hospital, Bangkok, Thailand (Pauchard) Department of Urology, Hospital Carlos Van Buren, Valparaiso, Chile (Delbarre) Centre Hospitalier Universitaire Angers, Angers, France (Jimenez Godinez) Department of Surgery, University of Guadalajara, Guadalajara, Jalisco, Mexico (Kamkoum) Urology Department, Hazm Mebareek General Hospital (HMGH), Doha, Qatar (Somani) University Hospital Southampton NHS Trust, Southampton, United Kingdom
 Publisher
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 Year of Publication
 2021

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151.

Flexible Ureteroscopy as the New Standard for the Management of Renal Transplant Urolithiasis <15 mm: A Single-Center Experience.

Gerber R.C., Best S.L., Hedican S.P., Nakada S.Y.

Embase

Journal of Endourology. 35(10) (pp 1443-1447), 2021. Date of Publication: October 2021.

[Article]

AN: 636234474

Objectives: To determine the safety and efficacy of flexible ureteroscopy in the treatment of transplant urolithiasis.

Material(s) and Method(s): We reviewed a single-center series of 2652 patients who underwent surgical treatment for nephrolithiasis at our institution from 2009 to the present day to identify all patients undergoing ureteroscopy for treatment of transplant lithiasis.

Result(s): We identified 18 patients who underwent ureteroscopy for treatment of urolithiasis within the transplanted kidney or ureter. The majority of the procedures were performed using a retrograde approach with flexible ureteroscopy, with one patient undergoing antegrade ureteroscopy and two patients requiring semirigid ureteroscopy. Holmium:yttrium-aluminum-garnet laser lithotripsy was utilized in all but one case, which was performed using basket extraction. There were no intraoperative complications reported. Four patients had small stone fragments on postoperative imaging, three of which were observed. One patient required repeat ureteroscopy for persistent distal ureteral stone.

Conclusion(s): Retrograde ureteroscopy is a feasible, safe, and effective intervention for the treatment of transplant lithiasis. Minimal intraoperative or postoperative complications were reported, and only one patient required additional intervention for residual stone burden.

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PMC Identifier

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Status

Embase

Institution

(Gerber, Best, Hedican, Nakada) Department of Urology, University of Wisconsin, School of Medicine and Public Health, Madison, WI, United States

Publisher

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Year of Publication

2021

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152.

Romanian National premiere with the new Thulium SuperPulsed Laser in the endourological treatment of urolithiasis.

Geavlete B., Multescu R., Iordache V., Geavlete P.

Embase

Journal of medicine and life. 14(3) (pp 316-322), 2021. Date of Publication: 01 May 2021.

[Article]

AN: 635869881

In this paper, we aimed to verify the efficiency and functionality of the new Soltive Thulium Fiber Laser (TFL) in the treatment of urinary stones. The Soltive Laser System was used in 17 urolithiasis cases: 10 renal, 5 ureteral, and 2 bladder stone patients. The average stone size was 13.1 mm (ranging between 11-29 mm) for the kidney, 8 mm (ranging between 6-12 mm) for the ureter, and 31 mm (ranging between 27-34 mm) for the bladder. Only single calculi patients were included in the study. We used 100 and 150 μ m core-diameters fibers (CDF). Three settings were applied: 0.15 J/100 Hz for "fine dusting", 0.5 J/30 Hz for "dusting" and 1 J/15 Hz for the fragmentation mode. The mean operative time was 34 minutes for renal, 21 minutes for ureteral, and 39 minutes for bladder stones. The visibility was optimal in all cases. The stone-free rate at 1 month after treatment was 95% for renal calculi and 100% for ureteral and bladder stones. Very fine dust made of stone fragments smaller than 1 mm in size that passed spontaneously through the access sheath was observed, especially subsequent to the "fine dusting" mode. The complication rate was very low: 1 patient was classified as Clavien grade 1 and 1 patient as Clavien grade 2, and this was the case for renal stones only. No urinary tract infections were observed. The new Soltive TFL appears to be a remarkably promising tool in the therapeutic approach of urolithiasis. Lithotripsy was achieved up to the level of extremely small stone fragments with improved efficiency while also optimizing the operative time.

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34377196 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=34377196>]

Institution

(Geavlete, Multescu, Iordache, Geavlete) Sanador Hospital, Bucharest, Romania (Geavlete, Multescu, Iordache, Geavlete) Department of Urology, Sf. Ioan Emergency Clinical Hospital, Bucharest, Romania

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153.

Comparison of laser operator duty cycles (ODC) during high power holmium:yag (Ho:YAG) versus thulium fiber laser (TFL) lithotripsy.

Ghazi A., Khalil M., Jain R., Quarrier S.

Embase

Journal of Urology. Conference: Annual Meeting of the American Urological Association, AUA 2021. Virtual. 206(SUPPL 3) (pp e94-e95), 2021. Date of Publication: September 2021.

[Conference Abstract]

AN: 636276623

INTRODUCTION AND OBJECTIVE: ODC is a measure to compare efficiency of laser activation during ureteroscopy, ranging between 32% to 63% for Ho:YAG lithotripsy. Laser ODC is defined as LOT (overall time the laser pedal is depressed) divided by Lithotripsy Time (LT; first to last pedal activation including pauses). In vitro studies with TFL lithotripsy suggest decreased retropulsion and improved visualization compared to the Ho:YAG laser. These factors may directly impact LOT and pauses thus ODC. The objective of this study was to quantify if differences in retropulsion, visualization and efficiency between Ho:YAG (100W Empower, Olympus) and TFL (Soltive PLS, Olympus) lasers during ureteroscopic lithotripsy procedures. METHOD(S): A prospective study enrolled 62 patients (31 per group) with 10e30 mm renal calculi undergoing ureteroscopy with fixed dusting settings (0.4J X 60Hz) for both lasers by 3 endourology faculty. LOT and lithotripsy times were collected from laser logs of each case. LOT was verified by the formula $(LOT = \text{total energy delivered [J]} / (\text{energy [J]} \times \text{frequency [Hz]}))$ for any discrepancy. Retropulsion, visibility, and bleeding during lithotripsy were graded for all cases by

the three urologists using 5-point Likert scales. ODC was calculated using the formula (LOT/LT). Correlation coefficients were calculated to define relationships between stone and lithotripsy characteristics.

RESULT(S): Mean age, BMI, stone number, density, ellipsoid stone volume and STONE score were not significantly different between the groups (Table 1). TFL was graded more favorably in retropulsion (1.6 vs 2.8), visibility (1.8 vs 3.3) and bleeding (1.1 vs 1.9) gradings. TFL lithotripsy also had significantly shorter LOTs (380.6 vs 533.6 seconds, $p=0.015$) and superior ODC efficiency (49.1% vs 34.2%, $p=0.0001$). (Table 1). An inverse correlation was found between ODC and stone density, volume and STONE score as well as retropulsion, visualization and bleeding grading.

CONCLUSION(S): These findings suggest that TFL may be more efficient than Ho:YAG in the treatment of medium to large stones when operated in dusting mode. The longer pedal activation times during TFL especially at higher settings may necessitate future studies on their thermal implications.

Status

CONFERENCE ABSTRACT

Institution

(Ghazi, Khalil, Jain, Quarrier) RochesterNYUnited States

Publisher

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Year of Publication

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154.

Holmium:yag (ho: Yag) versus thulium fiber laser (TFL) for treatment of upper urinary tract calculi in dusting mode: A clinical comparison of efficiency, efficacy and costs effectiveness.

Ghazi A., Khalil M., Feng C., Quarrier S., Jain R.

Embase

Journal of Urology. Conference: Annual Meeting of the American Urological Association, AUA 2021. Virtual. 206(SUPPL 3) (pp e925-e926), 2021. Date of Publication: September 2021.

[Conference Abstract]

AN: 636275899

INTRODUCTION AND OBJECTIVE: Preliminary studies have demonstrated the superiority of TFL compared to Ho:YAG for dusting of urinary calculi. These are mainly based on laboratory studies with emerging clinical reports limited to optimizing TFL dusting settings. We aim to compare the efficiency, effectiveness and costs effectiveness of high power Ho:YAG (100W Empower, Olympus) to TFL (Soltive PLS, Olympus) lasers operated at a fixed dusting protocol. **METHOD(S):** A prospective study of 62 patients (31 per group) with 10e30 mm renal calculi was completed. Fixed dusting settings (0.4J X 60Hz) during retrograde intrarenal surgery (RIRS) lithotripsy was used for both lasers. Laser on time (LOT), Ablation efficacy (J/ mm³) and Ablation speed (mm³/second) were calculated. Retropulsion, visibility, and bleeding during RIRS were graded by 3 urologists using 5-point Likert scales. Stone-free rate (SFR) was assessed at 1 month with non-contrast CT. Projected cost savings were calculated utilizing the formula [average LOT difference x \$100/minute billed to insurance for RIRS minus \$178 differential between list price of the 200m TFL ball tip and regular Ho:YAG fiber plus price differential for upgrade to PLS Soltive (\$18800/1000) amortized over 1000 procedures[\$18.8].

RESULT(S): Mean age, BMI, stone number, density, ellipsoid stone volume and STONE score was not significantly different among both groups (Table 1). TFL lithotripsy had significantly shorter LOTs (380.6 vs 533.6 seconds, p=0.015) and higher SFRs (68% vs 34.8%, p=0.03). Both ablation efficacy (21.2 vs 12.5 J/mm³, p=0.02) and speed (4.1 vs 1.2 mm³/second, p=0.003) were significantly higher with TFL. TFL was 2.6 min faster for all stones (3.4 min for stones <15mm vs 1.7min for stones >15mm) with an overall projected \$69.2 saving per case [\$266- (\$178+ \$18.8) (Table 1). TFL was superior in terms of retropulsion (1.6 vs 2.8), visibility (1.8 vs 3.3) and bleeding (1.1 vs 1.9) gradings.

CONCLUSION(S): This clinical study demonstrates TFL as a more effective, efficient and cost effective laser during RIRS lithotripsy when operated in dusting mode, producing higher stone ablation rates and speed with improved stone free rates than Ho:YAG laser.

Status

CONFERENCE ABSTRACT

Institution

(Ghazi, Khalil, Feng, Quarrier, Jain) RochesterNYUnited States

Publisher

Lippincott Williams and Wilkins

Year of Publication
2021

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155.

Rirs versus pcnl in larger kidney stones. could superpulsed tfl change the game?.

Taratkin M., Azilgareeva C., Chinenov D., Ali S., Korolev D., Tsarichenko D., Corrales M., Enikeev D.

Embase

Journal of Urology. Conference: Annual Meeting of the American Urological Association, AUA 2021. Virtual. 206(SUPPL 3) (pp e1120), 2021. Date of Publication: September 2021.

[Conference Abstract]

AN: 636275615

INTRODUCTION AND OBJECTIVE: The novel SuperPulsed Thulium-fiber laser (SP TFL) produces higher stone ablation rates, three to four-times more dust, smaller stone fragments, when compared to Ho:YAG laser. The aim of the study was to compare retrograde intrarenal surgery (RIRS) and percutaneous nephrolithotomy (PCNL) efficacy and safety with SuperPulsed Thulium-fiber laser (SP TFL) for stones > 20 mm.

METHOD(S): Patients with large kidney stones (>20mm) were recruited to undergo PCNL or RIRS with SP TFL lithotripsy. Both RIRS and PCNL were performed under general anaesthesia with all the patients in the lithotomy position. During the RIRS, the FLEX-X2 (Karl Storz GmbH Germany) or the LithoVue trade; (Boston Scientific, Marlborough, USA) ureteroscopes with a 200 mm laser fiber were used. All PCNL procedures were performed using a 12 Fr nephroscope with MIP set (16.5-17.5 Fr) (Richard Wolf GmbH, Germany). Lithotripsy was performed with a 400 mm laser fiber using a fragmentation setting only. Both groups were comparable in terms of stone size and density, operation time, laser-on time (LOT), stone-free rate, residual fragments and

complication rate. Stone retropulsion and visibility were assessed based on the surgeon's feedback using three-point Likert scales.

RESULT(S): A total of 14 and 56 patients were included in the RIRS and PCNL groups respectively. The mean stone density was 833.8+/-298.3 HU in the RIRS group and 882.3+/-408.5 HU in the PCNL group (p=0.072). The median LOT was 11.7 (10.0-15.5) min for RIRS and 10.0 (6.0-12.1) min for PCNL (p=0.207). The median total energy for stone ablation was 13.8 (11.8-25.0) kJ for RIRS and 12.0 (7.0-20.1) kJ for PCNL (p=0.508). The median ablation speed was 3.9 (3.9-5.7) mm³/sec for RIRS and 5.0 (4.6-11.3) mm³/sec for PCNL (p=0.085). In both groups LOT was positively correlated with total energy (RIRS: r= 0.865 with p<0.001; PCNL: r= 0.834 with p<0.001). We found a significant correlation between retropulsion and the type of surgery performed: with higher retropulsion in the PCNL (r=0.298 with p=0.012). The stone-free rate at 3-months was 85.7 % (12/14 cases) in RIRS and 89.3 % (50/56 cases) in PCNL (p=0.505). The postoperative complication rate was relatively low with only 14.2% (2/14) in RIRS and 14.3% (8/56) in PCNL with only Clavien Grade I-II complications.

CONCLUSION(S): TFL is a safe and effective modality for both RIRS and PCNL resulting in minimal retropulsion and good visibility. No discrepancies in procedure duration, complications, or LOT were identified between the different modalities.

Status

CONFERENCE ABSTRACT

Institution

(Taratkin, Azilgareeva, Chinenov, Ali, Korolev, Tsarichenko, Enikeev) MoscowRussian Federation
(Corrales) ParisFrance

Publisher

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Laser suction effect: Zero-basket technique for dusting ureteral stones with pulse modulation.

Majdalany S., Ghani K.

Embase

Journal of Urology. Conference: Annual Meeting of the American Urological Association, AUA 2021. Virtual. 206(SUPPL 3) (pp e388), 2021. Date of Publication: September 2021.

[Conference Abstract]

AN: 636275044

INTRODUCTION AND OBJECTIVE: In the laser suction effect collapse of the vapor bubble leads to a change in pressure which produces a suction effect on the stone. In the Venturi effect, a vacuum is produced in front of the stone as the endoscope is withdrawn and the irrigating fluid helps push the stone out. During semi-rigid ureteroscopy (URS) and laser lithotripsy, it may be possible to use a combination of these two phenomena to help attract and evacuate stone fragments. In this video, we demonstrate our technique of dusting ureteral stones using pulse modulation for laser suction effect, along with Venturi effect for evacuation of fragments without the need for basket retrieval.

METHOD(S): We present three patients with distal to mid ureteral stones (7 to 12 mm) undergoing semi-rigid URS and laser lithotripsy. Dusting settings of low pulse energy and moderate frequency with pulse modulation (Moses Contact mode) using a 230 µm core fiber was used to treat the stones (P120Moses, Lumenis). Each stone was able to be broken into dust and all fragments sequentially evacuated out of the ureter.

RESULT(S): Principles for this technique include: 1) Patient in reverse Trendelenburg position, 2) Semi-rigid ureteroscopy, 3) Safety guidewire, 4) Irrigation modulated by surgeon, 5) Low power (<10W) 0.3Jx30 Hz dusting settings, 6) Pulse modulation Moses Contact mode to reduce retropulsion and keep fragments close to fiber tip for laser suction effect, 7) Activating laser on center of stone, 8) Advancing scope beyond fragments and withdrawal of scope for Venturi effect and fragment expulsion, 9) Manipulation of guidewire to help tease fragments out of ureteral orifice. In all three patients, the stone could be dusted and fragments expelled without the need for basketing. There were no complications and follow-up imaging showed no hydronephrosis or residual fragments.

CONCLUSION(S): We present a method of dusting stones in the ureter with the semirigid ureteroscope using low pulse energy (0.3 J) and moderate frequency (30 Hz). Use of pulse modulation aids this approach, by reducing retropulsion and keeping fragments close to the scope while withdrawing it out of the ureter. A combination of fluid irrigation and scope withdrawal helps evacuate fragments from the ureter without the use of a basket.

Status

CONFERENCE ABSTRACT

Institution

(Majdalany, Ghani) Ann ArborMIUnited States

Publisher

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Year of Publication

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157.

Initial clinical experience of mini-percutaneous nephrolithotomy (PCNL) with ureteroscopic (URS) lithotripsy and synchronous percutaneous evacuation of fragments using a steerable suction device.

Singh A., Ganpule A., Sabnis R., Desai M., Landman J.

Embase

Journal of Urology. Conference: Annual Meeting of the American Urological Association, AUA 2021. Virtual. 206(SUPPL 3) (pp e682), 2021. Date of Publication: September 2021.

[Conference Abstract]

AN: 636274890

INTRODUCTION AND OBJECTIVE: Current retrograde ureteroscopic (URS) stone management strategies are counterintuitive as irrigation disperses fragments during lithotripsy and extraction. Inability to contain and extract dust and fragments during URS leads to low stone-free rates. Current antegrade Percutaneous Nephrolithotomy (PCNL) procedures (up to 30 Fr) require rigid instrumentation for fragmentation and suction. We present an innovative procedural concept that combines a novel percutaneous, flexible, and steerable suction catheter paired with URS lithotripsy, along with integrated fluid management of both irrigation and suction. We report first-in-man feasibility data using this system (developed by Auris Health, Redwood City, CA).

METHOD(S): The mini-PCNL with URS lithotripsy procedures were performed in a modified supine lithotomy position. Following percutaneous access, a 18Fr percutaneous sheath was placed into the calyx. The system's 15 Fr steerable suction catheter was inserted through the percutaneous sheath, and used a fluid management tower to coordinate irrigation and suction. URS lithotripsy was performed by a second physician through a ureteral access sheath. Simultaneously, the steerable percutaneous suction catheter extracted fragments while attracting and stabilizing these fragments to prevent retropulsion.

RESULT(S): Ten patients underwent the mini-PCNL with URS lithotripsy procedure. Mean age was 42+/-15 years, BMI was 22+/-5.9 kg/m², and stone burden was 19.5+/-7.4 mm. Mean procedure time was 61+/-26 minutes. All procedures were technically successful, without device-related complications. Nine procedures were tubeless, and 1 patient required a nephrostomy tube due to oozing during the procedure. There were 4 Clavien 1 complications (3 mild postprocedure fevers, 1 transient positional injury). Stone-free rate was 70% at 48 hours, and 90% at 1 month, as assessed by thin slice CT imaging.

CONCLUSION(S): This study demonstrates the feasibility of combining mini-PCNL with URS lithotripsy to achieve simultaneous percutaneous suction of debris and fragments during URS lithotripsy. This procedural approach resulted in a high stone-free rate using a single percutaneous access tract. Current work is underway to perform the procedure robotically.

Status

CONFERENCE ABSTRACT

Institution

(Desai) Los AngelesCAUnited States (Singh, Ganpule, Sabnis, Desai) NadiadIndia

(Landman) IrvineCAUnited States

Publisher

Lippincott Williams and Wilkins

Year of Publication

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Laser lithotripsy fragmentation of calcium oxalate monohydrate urinary calculi according to stone morphology.

Khajeh N.R., Kruger J.M., Hall T.L., Ghani K.R., Roberts W.W.

Embase

Journal of Urology. Conference: Annual Meeting of the American Urological Association, AUA 2021. Virtual. 206(SUPPL 3) (pp e681-e682), 2021. Date of Publication: September 2021.

[Conference Abstract]

AN: 636274878

INTRODUCTION AND OBJECTIVE: Stone morphology has been studied as a way to identify disease etiology and risk of stone recurrence. It may also be an important factor in determining how extensively and readily a stone can be fragmented. The objective of this study was to investigate the mass of fragmented stone and the distribution of fragment sizes produced when treating 100% Calcium Oxalate Monohydrate (COM) stones of different morphologies with a standardized in vitro laser lithotripsy algorithm.

METHOD(S): Canine stones (100% COM) were classified into groups, A (n=4), B (n=3), C (n=4), and D (n=4) based on morphology. Stones were secured to a glass slide, weighed, and hydrated for 24 hours in deionized water. A laser lithotripsy technique was adopted using an automated three-dimensional algorithm that produced 16 drill holes in a 4 x 4 grid pattern on each stone (0.5 J x 20 Hz, 760 J energy delivered). Stone fragments were captured and separated using micro sieves of diameters: 0.25, 0.5, 1, and 2 mm. The fragments and residual stone material were dried for 24 hours before weighing. Outcome measures were total mass of fragmented stone and distribution of stone fragments by size.

RESULT(S): Group A produced the greatest mass of fragmented stone (178.9+/-56.8 mg; A vs. B, p<0.04) followed by groups B (83.5+/-11.5 mg; B vs. C p<0.01), D (80.8+/-35.0 mg; A vs. D p<0.03) and C (41.2+/-9.0 mg; A vs. C, p<0.01). Group A (126.0+/-84.6 mg) produced the largest mass of fragments <=2 mm, followed by groups D (32.9+/-37.1 mg), B (14.5+/-4.9 mg), and C (0 mg). Small sample sizes precluded the determination of statistical significance in the mass distribution of fragments both <=2 mm and <2mm.

CONCLUSION(S): Total mass of fragmented stone and the distribution of fragments by size appear to track with stone morphology. The mass of fragmented stone was notably different (more than 4 times greater in group A compared to C) based on stone morphology. Group C predominantly produced fragments less than 0.25 mm and none greater than 2 mm. An appreciation of stone morphology may aid in selection of laser lithotripsy parameters and determination of optimal strategy (dusting vs. basket extraction) for individual cases. Research on

laser lithotripsy optimization should account for stone morphology in addition to stone composition. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Khajeh, Hall, Ghani, Roberts) Ann ArborMIUnited States (Kruger) East LansingMIUnited States

Publisher

Lippincott Williams and Wilkins

Year of Publication

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159.

Reusable digital flexible ureteroscope vs. a single-use flexible ureteroscope in the treatment of urolithiasis: An edge consortium prospective randomized clinical trial.

Knudsen B.E., Posid T., Scimeca A., Sourial M., Wong K.F.V., Paterson R.F., Stern K.L., Moore J.P., Humphreys M.R., Chew B.H.

Embase

Journal of Urology. Conference: Annual Meeting of the American Urological Association, AUA 2021. Virtual. 206(SUPPL 3) (pp e1127), 2021. Date of Publication: September 2021.

[Conference Abstract]

AN: 636274705

INTRODUCTION AND OBJECTIVE: Flexible ureteroscopes are routinely used to treat kidney stones. Both single-use and reusable models are available. The high cost of purchase and repair of reusable ureteroscopes has led to the development of single-use options. This trial compared a single-use digital flexible ureteroscope (LithoVue, Boston Scientific) to a state-of-the art reusable

digital flexible ureteroscope (Flex-Xc, Storz) in a multicenter, prospective randomized trial from the EDGE Group.

METHOD(S): Patients were randomized across 3 sites to either the single use flexible ureteroscope (n=53) or a reusable flexible ureteroscope (n=49) (brand new at each site and used only for study cases). Ureteroscopies were performed using a standardized technique in patients with renal stone burdens ranging from 5-20 mm. The reusable ureteroscope was used until it was damaged to the point that a major repair was required. Primary outcomes were stone-free rate 6-10 weeks post-procedure and secondary outcomes included length of surgery, laser time, basketing time, deflection of scope at the beginning and end of the case, and a rating scale of scope handling.

RESULT(S): The mean age was 57.9 years (+/-13.2), 53.3% male, 73% Caucasian, and 77.6% non-Hispanic or Latino. Upward and downward deflection was significantly better both at the beginning ($p<0.007$) and end of the case ($p<0.001$, Table 1) with LithoVue. Performance was comparable between scopes for all other intraoperative measures (Table 1). However, scope handling as rated by each surgeon favored the reusable ureteroscope for maneuverability ($p=0.004$), visualization ($p<0.001$), ability to target the laser on stone ($p<0.001$), and overall scope rating ($p<0.001$). There was no difference in stone free rate at 4-10 days or 6-10 weeks). The 3 reusable ureteroscopes failed and required a total of 5 repairs during the trial (2 each at OSU and Mayo, 1 at UBC) and averaged 6.6 uses before repair.

CONCLUSION(S): The LithoVue single-use ureteroscope had better deflection angles pre- and post-operatively when compared to the reusable digital Flex-Xc. Surgeons preferred the reusable flexible ureteroscope handling and visualization, although both scopes produced similar stone free rates. The high rate of breakage of reusable ureteroscopes is concerning and the single-use ureteroscope produced equivalent patient outcomes.

Status

CONFERENCE ABSTRACT

Institution

(Knudsen, Posid, Scimeca, Sourial) ColumbusOHUnited States (Wong, Paterson, Chew)

VancouverCanada

(Stern, Moore, Humphreys) PhoenixAZUnited States

Publisher

Lippincott Williams and Wilkins

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160.

Clinical efficiency ureteroscopy with laser lithotripsy: Comparison of holmium: Yag laser and superpulse thulium fiber laser.

Sytnik D., Popov S., Orlov I., Pazin I., Suleymanov M.

Embase

Journal of Urology. Conference: Annual Meeting of the American Urological Association, AUA 2021. Virtual. 206(SUPPL 3) (pp e1120-e1121), 2021. Date of Publication: September 2021.

[Conference Abstract]

AN: 636274614

INTRODUCTION AND OBJECTIVE: The most effective energy source for lithotripsy is Holmium:YAG laser (Ho:YAG laser). During lithotripsy of the stone, which localized in the proximal ureter, one of the main problems is the migration of the stone in renal collecting system. Despite the effectiveness and safety of Ho:YAG laser, the SuperPulse Thulium Fiber Laser (SPTFL) has become increasingly popular in recent years.

METHOD(S): Patients were divided into 2 groups: Group A (50 patients), Group B (60 patients). In this study, we used semi-rigid ureteroscope Olympus (OES Pro, 7.8 Fr). Ho:YAG laser lithotripsy-Lumenis VersaPulse 100W (Group A), SPTFL lithotripsy-FiberLase U2, IPG Photonics. Thickness of laser fiber - 200 mm. SPTFL and Ho:YAG laser settings were the same in dusting (0.2-0.5J, 10W) and fragmentation(0.6-1J, 10W) modes. Analysis was carried out according to the following parameters: operative time, time of lithotripsy, stone retropulsion, stone free rate (SFR).

RESULT(S): Group B patients have the advantage: operative time (dusting 34.3 vs 36.3, 35.3 vs 37.1, 35.8 vs 38.6 minutes, proximal, middle, distal part of the ureter, respectively; fragmentation 40.7 vs 41.5, 41.2 vs 42.5, 41.9 vs 43.4 minutes proximal, middle, distal part of the ureter, respectively), lithotripsy time (dusting 6.3 vs 7.0, 6.5 vs 7.2, 6.6 vs 7.3 minutes proximal, middle, distal part of the ureter, respectively; fragmentation 8.5 vs 9.3, 8.6 vs 9.5, 8.8 vs 9.6 minutes proximal, middle, distal part of the ureter, respectively) compared to group A. The SFR level in the two groups was identical. Stone retropulsion was registered exclusively using a Ho:YAG

laser; Grade 1 in 5 cases (in fragmentation mode: distal part-1, proximal part-2; In dusting mode: middle part-1, proximal part-1), Grade 2 in 3 cases (in fragmentation mode: middle part-1, proximal part-1; In dusting mode: proximal part- 1), Grade 3 in 3 cases (in proximal part: fragmentation-2; in the dusting).

CONCLUSION(S): The data obtained testify the same level of SFR when using both SPTFL and Ho:YAG laser in dusting and fragmentation modes. However when using a SPTFL: shorter operative time and lithotripsy time; no stone retropulsion was observed. Stone retropulsion was recorded a Ho:YAG laser (Grade 1 in 5 cases, Grade 2 in 3 cases, Grade 3 in 3 cases).

Status

CONFERENCE ABSTRACT

Institution

(Sytnik, Popov, Orlov, Pazin, Suleymanov) Saint-PetersburgRussian Federation

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161.

Outcomes of ureteroscopy and laser stone fragmentation (Ursl) for kidney stone disease (ksd): Comparative cohort study using moles technology 60 w laser system versus regular holmium 20 w laser.

Pietropaolo A., Hughes T., Mani M., Somani B.

Embase

Journal of Clinical Medicine. 10(13) (no pagination), 2021. Article Number: 2742. Date of Publication: 01 Jul 2021.

[Article]

AN: 2007553061

Background: For ureteroscopy and laser stone fragmentation (URSL), the use of laser technology has shifted from low power to higher power lasers and the addition of Moses technology, that allows for 'fragmentation, dusting and pop-dusting' of stones. We wanted to compare the outcomes of URSL for Moses technology 60 W laser system versus matched regular Holmium 20 W laser cases.

Method(s): Prospective data were collected for patients who underwent URSL using a Moses 60 W laser (Group A) and matched to historical control data using a regular Holmium 20 W laser (Group B), performed by a single surgeon. Data were collected for patient demographics, stone location, size, pre-and post-operative stent, operative time, length of stay, complications and stone free rate (SFR).

Result(s): A total of 38 patients in each group underwent the URSL procedure. The stones were matched for their location (17 renal and 11 ureteric stones). The mean single and cumulative stone sizes (mm) were 10.9 +/- 4.4 and 15.5 +/- 9.9, and 11.8 +/- 4.0 and 16.5 +/- 11.3 for groups A and B, respectively. The mean operative time (min) was 51.6 +/- 17.1 and 82.1 +/- 27.0 ($p \leq 0.0001$) for groups A and B. The initial SFR was 97.3% and 81.6% for groups A and B, respectively ($p = 0.05$), with 1 and 7 patients in each group needing a second procedure ($p = 0.05$), for a final SFR of 100% and 97.3%. While there were 2 and 5 Clavien I/II complications for groups A and B, none of the patients in group A had any infection related complication.

Conclusion(s): Use of Moses technology with higher power was significantly faster for stone lithotripsy and reduced operative time and the number of patients who needed a second procedure to achieve a stone free status. It seems that the use of Moses technology with a mid-power laser is likely to set a new benchmark for treating complex stones, without the need for secondary procedures in most patients.

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Status

Embase

Institution

(Pietropaolo, Hughes, Mani, Somani) Department of Urology, University Hospital Southampton, Southampton SO16 6YD, United Kingdom

Publisher

MDPI

Year of Publication

2021

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162.

Sulfamethoxazole-induced sulfamethoxazole urolithiasis: a case report.

Roedel M.M., Nakada S.Y., Penniston K.L.

Embase

BMC Urology. 21(1) (no pagination), 2021. Article Number: 133. Date of Publication: December 2021.

[Article]

AN: 2013726775

Background: Drug-induced urolithiasis falls into two categories: drug-induced and metabolically-induced. Certain antimicrobials are associated with each; sulfonamides are associated with drug- or metabolite-containing calculi when taken in large doses over a long period of time.

Trimethoprim-sulfamethoxazole, a member of the sulfonamide family, is a rare cause of drug-induced calculi. Cases of sulfonamide urolithiasis occurring in patients with known stone disease have rarely been reported. Case presentation: We report a case of a patient with a brief history of recurrent calcium oxalate nephrolithiasis requiring 2 ureteroscopic procedures whose existing 6 mm lower pole renal stone more than quadrupled in size to form a 4 cm renal staghorn after 4 months of high-dose treatment for Nocardia pneumonia with trimethoprim-sulfamethoxazole. After ureteroscopy with laser lithotripsy and basketing of fragments, the stone was found to be predominantly composed of N4-acetyl-sulfamethoxazole, a metabolite of sulfamethoxazole.

Conclusion(s): Stones composed of sulfamethoxazole or its metabolites are rare but have known associated risk factors that should be considered when prescribing this antibiotic. This case report illustrates additional risk factors for consideration, including pre-existing urinary calculi that may serve as a nidus for sulfamethoxazole deposition, and reviews treatment and prevention methods.

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Status

In-Process

Institution

(Roedel) Wisconsin Academy for Rural Medicine, University of Wisconsin School of Medicine and Public Health, Madison, WI, United States (Nakada, Penniston) Department of Urology, University of Wisconsin School of Medicine and Public Health, 1685 Highland Avenue, 3258 Medical Foundation Centennial Building, Madison, WI 53705-2281, United States (Nakada) Department of Radiology, University of Wisconsin School of Medicine and Public Health, Madison, WI, United States

Publisher

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2021

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163.

Pulse modulation with Moses technology improves popcorn laser lithotripsy.

Black K.M., Aldoukhi A.H., Teichman J.M.H., Majdalany S.E., Hall T.L., Roberts W.W., Ghani K.R.

Embase

World journal of urology. 39(6) (pp 1699-1705), 2021. Date of Publication: 01 Jun 2021.

[Article]

AN: 632003439

PURPOSE: Moses™ technology has been developed to improve holmium laser fragmentation at 1-2 mm distance from the stone. Because popcorn lithotripsy is a non-contact technique, we compared short pulse (SP) and Moses distance (MD) modes in an in vitro model.

METHOD(S): BegoStones were fragmented using a 120 W Ho:YAG laser (P120 Moses) and a 230 µm core fiber introduced through a ureteroscope. 20 W (1 J x 20 Hz; 0.5 J x 40 Hz) and 40

W (1 J x 40 Hz; 0.5 J x 80 Hz) settings (total energy 4.8 kJ) were tested using SP and MD modes. We assessed fragment size distribution and mass lost in fluid (initial mass-final dry mass of all sievable fragments). High-speed video analysis of fragmentation strike rate and vapor bubble characteristics was conducted for 1 J x 20 Hz and 0.5 J x 80 Hz. Laser strike rate (number of strikes divided by frequency) was categorized as: (1) direct-a visual plume of dust ejected from stone while in contact with fiber tip; (2) indirect-a visual plume of dust ejected with distance between stone and fiber tip.

RESULT(S): For 1 J x 20 Hz (20 W), MD resulted in more mass lost in fluid and a lower distribution of fragments ≥ 2 mm compared to SP ($p < 0.05$). 0.5 J x 80 Hz (40 W) produced no fragments ≥ 2 mm, and there were no significant differences in fragment distribution between MD and SP ($p = 0.34$). When using MD at 1 J x 20 Hz, 96% of strikes were indirect vs 61% for SP ($p = 0.059$). In contrast to the single bubble of SP, with MD, there was forward movement of the collapsing second bubble, away from the fiber-tip.

CONCLUSION(S): For lower frequency and power popcorn settings, pulse modulation results in more fragmentation through true non-contact laser lithotripsy.

PMC Identifier

32506386 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=32506386>]

Author NameID

Ghani, Khurshid R.; ORCID: <http://orcid.org/0000-0002-6089-0733>

Institution

(Black) Medical Sciences Unit I, Division of Endourology, Department of Urology, University of Michigan, Room 4432, MI, 1301 Catherine St, Ann Arbor 48109, United States (Aldoukhi, Majdalany, Roberts, Ghani) Medical Sciences Unit I, Division of Endourology, Department of Urology, University of Michigan, Room 4432, MI, 1301 Catherine St, Ann Arbor 48109, United States

(Teichman) Department of Urologic Sciences, University of British Columbia, Vancouver, Canada

(Hall, Roberts) Department of Biomedical Engineering, University of Michigan, MI, Ann Arbor, United States

Publisher

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164.

Consultation on kidney stones, Copenhagen 2019: aspects of intracorporeal lithotripsy in flexible ureterorenoscopy.

Lildal S.K., Andreassen K.H., Baard J., Brehmer M., Bultitude M., Eriksson Y., Ghani K.R., Jung H., Kamphuis G., Kronenberg P., Turney B., Traxer O., Ulvik O., Osther P.J.S.

Embase

World journal of urology. 39(6) (pp 1673-1682), 2021. Date of Publication: 01 Jun 2021.

[Conference Paper]

AN: 633191647

PURPOSE: To summarize current knowledge on intracorporeal laser lithotripsy in flexible ureterorenoscopy (fURS), regarding basics of laser lithotripsy, technical aspects, stone clearance, lithotripsy strategies, laser technologies, endoscopes, and safety.

METHOD(S): A scoping review approach was applied to search literature in PubMed, EMBASE, and Web of Science. Consensus was reached through discussions at the Consultation on Kidney Stones held in September 2019 in Copenhagen, Denmark. **RESULTS AND**

CONCLUSION(S): Lasers are widely used for lithotripsy during fURS. The Holmium laser is still the predominant technology, and specific settings for dusting and fragmenting have evolved, which has expanded the role of fURS in stone management. Pulse modulation can increase stone ablation efficacy, possibly by minimizing stone retropulsion. Thulium fibre laser was recently introduced, and this technology may improve laser lithotripsy efficiency. Small fibres give better irrigation, accessibility, and efficiency. To achieve optimal results, laser settings should be adjusted for the individual stone. There is no consensus whether the fragmentation and basketing strategy is preferable to the dusting strategy for increasing stone-free rate. On the contrary, different stone scenarios call for different lithotripsy approaches. Furthermore, for large stone burdens, all laser settings and lithotripsy strategies must be applied to achieve optimal results. Technology for removing dust from the kidney should be in focus in future research and development. Safety concerns about fURS laser lithotripsy include high intrarenal pressures and temperatures, and measures to reduce both those aspects must be taken to avoid complications. Technology to control these parameters should be targeted in further studies.

PMC Identifier

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Author NameID

Osther, Palle Jorn Sloth; ORCID: <http://orcid.org/0000-0001-7962-1640>

Institution

(Lildal) Department of Urology, Aarhus University Hospital, Aarhus, Denmark (Andreassen)

Department of Urology, Herlev-Gentofte Hospital, University of Copenhagen, Copenhagen, Denmark

(Baard, Kamphuis) Department of Urology, University of Amsterdam, Amsterdam, Netherlands

(Brehmer, Eriksson) Department of Surgery and Urology, Danderyd University Hospital, Stockholm, Sweden

(Brehmer, Eriksson) Department of Clinical Sciences, Karolinska Institutet, Stockholm, Sweden

(Bultitude) Urology Centre and Stone Unit, Guy's and St. Thomas' NHS Foundation Trust, London, United Kingdom

(Ghani) Department of Urology, University of Michigan, MI, Ann Arbor, United States

(Jung, Osther) Department of Urology, Urological Research Center, Lillebaelt Hospital, University of Southern Denmark, Vejle, Denmark

(Kronenberg) Department of Urology, Hospital CUF Descobertas, Lisbon, Portugal

(Turney) Department of Urology, Churchill Hospital, Oxford University Hospitals NHS Trust, Oxford, United Kingdom

(Traxer) Department of Urology, Tenon Hospital, Paris, France

(Ulvik) Department of Urology, Haukeland University Hospital, Bergen, Norway

Publisher

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Year of Publication

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Feasibility and relevance of urine culture during stone fragmentation in patients undergoing percutaneous nephrolithotomy and retrograde intrarenal surgery: a prospective study.

De Lorenzis E., Boeri L., Gallioli A., Fontana M., Zanetti S.P., Longo F., Colombo R., Arghittu M., Piconi S., Albo G., Trinchieri A., Montanari E.

Embase

World journal of urology. 39(6) (pp 1725-1732), 2021. Date of Publication: 01 Jun 2021.

[Article]

AN: 632495773

PURPOSE: We evaluated if, during lithotripsy, bacteria may be detected in the irrigation fluid of percutaneous nephrolithotomy (PCNL) and retrograde intrarenal surgery (RIRS). The concordance between urine culture from stone fragmentation (SFUC), bladder (BUC), renal pelvic (RPUC) and stone (SC) was analyzed. We also assessed the correlation between variables and cultures and their association with systemic inflammatory response syndrome (SIRS) and of a positive SC.

METHOD(S): We included 107 patients who underwent PCNL (n=53) and RIRS (n=54) from January 2017 to May 2018. Samples for RPUC were obtained by renal catheterization. Stone fragments and irrigation fluid sample were sent for culture.

RESULT(S): SFUC was positive in 17 (15.9%), BUC in 22 (20.6%), RPUC in 26 (24.3%) and SC in 30 patients (28%). The concordance between SFUC and SC was the highest among all cultures: 94.1%. SFUC and SC grew identical microorganisms in 15/17 (88.2%) patients. Out of 17 (15.9%) patients with SIRS, 8 (7.5%) had sepsis. SFUC had the highest PPV and specificity to detect positive SC and SIRS. Previous urinary tract infection, a preoperative nephrostomy, stone diameter and composition, staghorn calculi, PCNL, positive BUC, RPUC and SFUC were predictors of infected stone. Variables that indicate complex stones, complex PCNL and an infection of the upper tract were associated with SIRS.

CONCLUSION(S): SFUC is technically feasible, easy to retrieve and to analyze. The spectrum of SFUC potential application in clinical practice is when is not possible to perform a SC, e.g. complete dusting or during micro-PCNL.

PMC Identifier

32734462 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=32734462>]

Author NameID

De Lorenzis E.; ORCID: <http://orcid.org/0000-0002-5961-9874>

Institution

(De Lorenzis, Boeri, Gallioli, Fontana, Zanetti, Longo, Albo, Montanari) Department of Urology, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Via della Commenda 15, Milan

20122, Italy (De Lorenzis, Albo, Montanari) Department of Clinical Sciences and Community Health, University of Milan, Milan, Italy
(Colombo, Arghittu) Microbiology and Virology, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy
(Piconi) Infectious Diseases Department, ASST Fatebenefratelli-Sacco, Milan, Italy
(Trinchieri) University of Milan, Milan, Italy
Publisher
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Year of Publication
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166.

Thulium fiber laser: ready to dust all urinary stone composition types?.

Keller E.X., De Coninck V., Doizi S., Daudon M., Traxer O.

Embase

World journal of urology. 39(6) (pp 1693-1698), 2021. Date of Publication: 01 Jun 2021.

[Article]

AN: 635408757

PURPOSE: To evaluate whether stone dust can be obtained from all prevailing stone composition types using the thulium fiber laser (TFL) for lithotripsy. Where applicable, stone dust was further characterized by morpho-constitutional analysis.

METHOD(S): Human urinary stones were submitted to in vitro lithotripsy using a FiberLase U2 TFL generator with 150 microm silica core fibers (IPG Photonics, IPG Medical™, Marlborough, MA, USA). Laser settings were 0.05 J, 320 Hz and 200 mus. A total of 2400 J were delivered to each stone composition type. All evaluated stones had a >90% degree of purity (calcium oxalate monohydrate, calcium oxalate dihydrate, uric acid, carbapatite, struvite, brushite and cystine).

Spontaneously floating stone particles were considered as stone dust and collected for analysis by scanning electron microscopy and Fourier transform infrared spectroscopy.

RESULT(S): Stone dust could be retrieved from all evaluated urinary stones after TFL lithotripsy. Most stone dust samples revealed changes in crystalline organization, except for calcium oxalate monohydrate and carbapatite, which conserved their initial characteristics. Mean maximal width of stone dust particles did not exceed 254 microm.

CONCLUSION(S): The TFL is capable to produce stone dust from all prevailing stone types. Morpho-constitutional changes found in stone dust suggest a photothermal interaction of laser energy with the stone matrix during TFL lithotripsy.

PMC Identifier

32363450 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=32363450>]

Author NameID

Traxer, Olivier; ORCID: <http://orcid.org/0000-0002-2459-3803> Keller, Etienne Xavier; ORCID: <http://orcid.org/0000-0003-1667-7609>

De Coninck, Vincent; ORCID: <http://orcid.org/0000-0002-4983-5055>

Daudon, Michel; ORCID: <http://orcid.org/0000-0001-9844-9823>

Institution

(Keller, De Coninck, Doizi, Traxer) Service d'Urologie, Assistance-Publique Hopitaux de Paris, Sorbonne Universite, Hopital Tenon 4 rue de la Chine, Paris 75020, France (Keller, De Coninck, Doizi, Traxer) Groupe de Recherche Clinique Sur La Lithiase Urinaire, Sorbonne Universite, Hopital Tenon, Paris 75020, France

(Keller) Department of Urology, University Hospital Zurich, University of Zurich, Zurich, Switzerland

(De Coninck) Department of Urology, AZ Klina, Brasschaat, Belgium

(Daudon) CRISTAL Laboratory, Sorbonne Universite, Hopital Tenon, Paris, France

Publisher

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167.

Flexible Ureteroscopy for Treatment of Upper Urinary Tract Calculus.

Abedi G., Monga M.

Embase

Journal of Endourology. 35(S2) (pp S56-S61), 2021. Date of Publication: September 2021.

[Article]

AN: 635976245

The aim of this article is to illustrate a step-by-step guide to flexible ureteroscopy (URS) for treatment of upper urinary tract calculus. Preoperative evaluation of the patient with focus on comorbidities is paramount for the type of stone procedure to be performed. In this article, the steps of operating room setup, patient positioning, gaining access to the upper urinary tract, flexible URS, laser lithotripsy, basket extraction of stone fragments, and placement of a ureteral stent are described. The importance of clearance of the ureter before flexible URS in the case of pre-existing ureteral stone is also described.

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PMC Identifier

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Embase

Institution

(Abedi, Monga) Department of Urology, University of California, San Diego, San diego, CA,
United States

Publisher

Mary Ann Liebert Inc.

Year of Publication

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168.

Managing urolithiasis with thulium fiber laser: Updated real-life results-A systematic review.

Traxer O., Corrales M.

Embase

Journal of Clinical Medicine. 10(15) (no pagination), 2021. Article Number: 3390. Date of

Publication: 01 Aug 2021.

[Review]

AN: 2013091738

Thirty-three years ago, pulsed lasers marked the beginning of a new era in endoscopic lithotripsy, and the one that was highlighted because of its potential was the Holmium: YAG laser, which became and still is the gold standard in endourology. Recently, a new laser technology has been accepted for clinical use in lithotripsy: the thulium fiber laser (TFL), showing appealing characteristics not seen before in several preclinical studies. A review of the literature was performed and all relevant in vitro studies and clinical trials until April 2021 were selected. The search came back with 27 clinical experiences (7 full-text clinical trials and 20 peer-reviewed abstracts) and 33 laboratory studies (18 full-text articles and 15 peer-reviewed abstracts). The clinical experiences confirmed the clinical safety of using the wide parameter range of the TFL. This technology demonstrated the performance at a higher ablation speed, the higher ablation efficiency, and the better dust quality of the TFL, as well as reduced stone retropulsion, thus helping to maintain an optimal visibility. No thermal or radiation damage was found. Given the current evidence, we may be facing the future gold standard laser in endoscopic lithotripsy.

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Status

Embase

Institution

(Traxer, Corrales) Sorbonne Universite, Groupe de Recherche Clinique sur la Lithiase Urinaire, Hopital Tenon, GRC ndegree20, Paris F-75020, France (Traxer, Corrales) Sorbonne Universite, Service d'Urologie, AP-HP, Hopital Tenon, Paris F-75020, France

Publisher

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169.

Evaluating predictive factor of Systemic Inflammatory Response Syndrome and Postoperative Pain in Patients Without Ureteral Stent Placement After Ureteral Access Sheath Use in Flexible Ureteroscopy for Stone Management.

Inoue T., Hamamoto S., Okada S., Yamamichi F., Fujita M., Tominaga K., Fujisawa M.

Embase

Journal of endourology. (no pagination), 2021. Date of Publication: 19 Aug 2021.

[Article]

AN: 635949567

BACKGROUND AND OBJECTIVE: This retrospective cohort study aimed to evaluate the safety of stentless flexible ureteroscopy (fURS) using a ureteral access sheath (UAS) for stone management.

PATIENTS AND METHODS: A total of 270 ureteral stentless postoperative patients were analyzed. Stentless indication was characterized by having no ureteral wall or mucosa injury with only slight erosion, < 1-hour operative time, and no endoscopic stone fragments with or without stone dust. Postoperative complications and pain were analyzed for safety measurements. In addition, preoperative and intraoperative risk factors associated with the incidence of systemic inflammatory response syndrome (SIRS) and postoperative pain were evaluated.

RESULT(S): The most common UAS sizes were 10/12 Fr (69.6%) and 9.5/11.5 Fr (28.1%). The rate of patients who were stone-free was 95.9%. The median operation time was 34 min. Only three grade 1 ureteral injuries occurred intraoperatively. Postoperative SIRS occurred in 8.8% of patients, and postoperative use of analgesics was 35.9%. Only four patients were required to undergo eventual ureteral stenting. Less than 10/12-Fr UAS was the only factor positively associated with preventing postoperative SIRS (odds ratio [OR], 4.733; 95% confidence interval [CI], 1.085-20.644). Older age and preoperative ureteral stenting were positively associated with

preventing postoperative pain (OR, 0.970; 95% CI, 0.951-0.990 and OR, 0.427; 95% CI, 0.232-0.786; respectively).

CONCLUSION(S): Stentless fURS with UAS in stone management was feasible for selected patients. UAS size of < 10/12 Fr, older age, and preoperative stenting are possible keystones to achieving stentless fURS with UAS postoperatively.

PMC Identifier

34409849 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=34409849>]

Status

Article-in-Press

Institution

(Inoue) Kobe University, Urology, Kobe 657-8501, Japan (Inoue) Hara Genitourinary Hospital, Urology, 5-7-17, kobe city, Japan;

(Hamamoto) Nagoya City University Graduate School of Medical Sciences, Nephro-urology, 1 Kawasumi, Mizuho-ku, Mizuho-cho, Nagoya, Japan, 467-8601; hamamo10@med.nagoya-cu.ac.jp

(Okada) Gyotoku General Hospital, Urology, Tokyo, Japan;

(Yamamichi) Hara Genitourinary Hospital, Urology, Kobe, Japan;

(Fujita) Hara Genitourinary Hospital, Urology, Kobe, Japan; 0213masamasa@gmail.com

(Tominaga) Hara Genitourinary Hospital, Urology, kobe city, Japan; ktom1037@outlook.com

(Fujisawa) Kobe University School of Medicine, Urology, Kobe, Japan;

Publisher

NLM (Medline)

Year of Publication

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[SFX](#)

Comparison of holmium:Yag and thulium fiber lasers on the risk of laser fiber fracture.

Uzan A., Chiron P., Panthier F., Haddad M., Berthe L., Traxer O., Doizi S.

Embase

Journal of Clinical Medicine. 10(13) (no pagination), 2021. Article Number: 2960. Date of Publication: 01 Jul 2021.

[Article]

AN: 2007643802

Objectives: To compare the risk of laser fiber fracture between Ho:YAG laser and Thulium Fiber Laser (TFL) with different laser fiber diameters, laser settings, and fiber bending radii.

METHOD(S): Lengths of 200, 272, and 365 μm single use fibers were used with a 30 W Ho:YAG laser and a 50 W Super Pulsed TFL. Laser fibers of 150 μm length were also tested with the TFL only. Five different increasingly smaller bend radii were tested: 1, 0.9, 0.75, 0.6, and 0.45 cm. A total of 13 different laser settings were tested for the Ho:YAG laser: six fragmentation settings with a short pulse duration, and seven dusting settings with a long pulse duration. A total of 33 different laser settings were tested for the TFL. Three laser settings were common to both lasers: 0.5 J x 12 Hz, 0.8 J x 8 Hz, 2 J x 3 Hz. The laser was activated for 5 min or until fiber fracture. Each measurement was performed ten times.

Result(s): While fiber failures occurred with all fiber diameters with Ho:YAG laser, none were reported with TFL. Identified risk factors of fiber fracture with the Ho:YAG laser were short pulse and high energy for the 365 μm fibers ($p = 0.041$), but not for the 200 and 272 μm fibers ($p = 1$ and $p = 0.43$, respectively). High frequency was not a risk factor of fiber fracture. Fiber diameter also seemed to be a risk factor of fracture. The 200 μm fibers broke more frequently than the 272 and 365 μm ones ($p = 0.039$). There was a trend for a higher number of fractures with the 365 μm fibers compared to the 272 μm ones, these occurring at a larger bend radius, but this difference was not significant.

Conclusion(s): TFL appears to be a safer laser regarding the risk of fiber fracture than Ho:YAG when used with fibers in a deflected position.

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Status

In-Process

Institution

(Uzan, Chiron, Panthier, Haddad, Traxer, Doizi) GRC ndegree20, Groupe de Recherche Clinique sur la Lithiase Urinaire, Hopital Tenon, Sorbonne Universite, Paris F-75020, France (Uzan, Chiron, Panthier, Haddad, Traxer, Doizi) Service d'Urologie, AP-HP, Hopital Tenon, Sorbonne Universite, Paris F-75020, France

(Berthe) PIMM, UMR 8006 CNRS-Arts et Metiers ParisTech, 151 bd de l'Hopital, Paris F-75013, France

Publisher

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171.

What is the exact definition of stone dust? An in vitro evaluation.

Keller E.X., De Coninck V., Doizi S., Daudon M., Traxer O.

Embase

World journal of urology. 39(1) (pp 187-194), 2021. Date of Publication: 01 Jan 2021.

[Article]

AN: 631469020

PURPOSE: To propose a size-related definition of stone dust produced by lithotripsy of urinary stones.

METHOD(S): Stone dust was defined as particles small enough to adhere to the following criteria:

(1) spontaneous floating under 40 cm H₂O irrigation pressure; (2) mean sedimentation time of >2 s through 10 cm saline solution; (3) fully suitable for aspiration through a 3.6 F working channel.

Irrigation, sedimentation, and aspiration tests were set up to evaluate each criterion. Primary outcome was particle size limit agreeing with all three criteria. Stone particles with a given size limit (<=2 mm, <=1 mm, <=500 microm, <=250 microm, <=125 microm and <=63 microm) were obtained from laser lithotripsy, including samples from prevailing stone types: calcium oxalate monohydrate, calcium oxalate dihydrate, uric acid, carbapatite, struvite, brushite, and cystine.

RESULT(S): All particles <=250 microm from all stone types were in agreement with all three criteria defining stone dust, except for struvite where size limit for a positive irrigation and sedimentation test was <=125 microm.

CONCLUSION(S): A size limit of ≤ 250 microm seems to generally adhere to our definition of stone dust, which is based on floating and sedimentation properties of stone particles, as well as on the ability to be fully aspirated through the working channel of a flexible ureteroscope.

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Institution

(Keller, De Coninck, Doizi, Traxer) Service d'Urologie, AP-HP, Assistance-Publique Hopitaux de Paris, Sorbonne Universite, Hopital Tenon 4 rue de la Chine, Paris 75020, France (Keller, De Coninck, Doizi, Traxer) Groupe de Recherche Clinique Sur La Lithiase Urinaire, Sorbonne Universite, Hopital Tenon, Paris 75020, France

(Keller) Department of Urology, University Hospital Zurich, University of Zurich, Zurich, Switzerland

(De Coninck) Department of Urology, AZ Klina, Brasschaat, Belgium

(Daudon) CRISTAL Laboratory, Sorbonne Universite, Hopital Tenon, Paris, France

Publisher

NLM (Medline)

Year of Publication

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[SFX](#)

172.

Laparoscopic ureterolithotomy and retrograde flexible ureteroscopy-assisted transperitoneal laparoscopic ureteroureterostomy for a huge ureteropelvic junction stone and multiple small renal stones: A CARE-compliant case report.

Chou S.-F., Hsieh P.-F., Lin W.-C., Huang C.-P.

Embase

Medicine. 100(28) (pp e26655), 2021. Date of Publication: 16 Jul 2021.

[Article]

AN: 635625455

RATIONALE: Concurrent kidney and ureteral stones are always complicated and a clinical challenge. Improvements in endoscopic equipment have led to the widespread adoption of retrograde intrarenal surgery, which has a good stone clearance rate. On the other hand, laparoscopic ureterolithotomy (LUL) has been reported to be non-inferior to retrograde flexible ureteroscopy in stone-free rate and the need for axillary procedures, and to have a significantly lower rate of post-operative sepsis compared to retrograde flexible ureteroscopy. We describe a case managed with LUL followed by laparoscope-assisted retrograde intrarenal surgery (LA-RIRS) in a single operation for a large upper ureteral stone and small renal stones, which is usually challenging and requires axillary procedures. **PATIENT CONCERNS:** The patient was a 66-year-old male with underlying hypertension and diabetes mellitus. He reported severe flank pain after receiving endoscopic management of concurrent right ureteropelvic junction stone and multiple renal stones about 1 month previously. **DIAGNOSIS:** The residual stones were reassessed using non-contrast computed tomography before surgery. A 2.8-cm residual ureteropelvic junction stone and multiple renal stones with a maximum length of 1 cm were found. A second operation was considered to be necessary due to the deterioration of his renal function and refractory flank pain. **INTERVENTIONS:** We performed LUL followed by LA-RIRS. Two surgeries were completed in a single operation. The Jackson-Pratt drain was removed 3 days after the operation.

OUTCOME(S): After the surgery, no high-grade complications were recorded according to the Clavien Dindo classification. A follow-up kidney, ureter, and bladder radiograph performed 2 months after the operation revealed no residual stones. Renal echo revealed no obstructive nephropathy 1 month after double-J catheter removal.

CONCLUSION(S): LUL with LA-RIRS with a stone basket for renal stone extraction is a safe and feasible technique, and no step surgery or axillary procedures were needed in our case. If clinical cases with a huge stone burden over the ureter are indicated for LUL with concurrent small renal stones, LUL with LA-RIRS can be an alternative option.

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PMC Identifier

34260569 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=34260569>]

Author NameID

Chou, Sheng-Feng; ORCID: <http://orcid.org/0000-0003-2096-7828>

Institution

(Chou, Hsieh, Huang) Department of Urology, China Medical University Hospital, Taichung, Taiwan (Republic of China) (Hsieh, Lin, Huang) School of Medicine, China Medical University, Taichung, Taiwan (Republic of China)

(Hsieh) Graduate Institute of Biomedical Sciences, School of Medicine, China Medical University, Taichung, Taiwan (Republic of China)

(Lin) Department of Radiology, China Medical University Hospital, Taichung, Taiwan (Republic of China)

Publisher

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Year of Publication

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173.

A systematic review of thulium fiber laser: Applications and advantages of laser technology in the field of urology.

Rice P., Somani B.K.

Embase

Research and Reports in Urology. 13 (pp 519-527), 2021. Date of Publication: 2021.

[Article]

AN: 2013139065

Laser technology is widely used in urological surgery, from lithotripsy, prostate surgery to en-bloc resection of tumours. While Holmium:YAG has been widely employed over the last two decades, in recent years, there has been a surge of interest in Thulium Fiber Laser (TFL), which offers theoretical advantages of better water absorption and lower stone ablation thresholds. A systematic review was conducted to assess the evidence from clinical research on TFL's application for lithotripsy and prostate surgery. It identified 357 articles and 8 (1506 patients) were selected, of which 4 clinical studies each investigated TFL enucleation of prostate (ThuFLEP) and TFL lithotripsy. For flexible ureteroscopic lithotripsy (FURSL), stone ablation settings ranged from 0.1-4 J, and 7-300 Hz, mean operative time ranged from 23.4-39.8 minutes and lasing time

ranged from 1.2-10 minutes. For stone dusting in percutaneous nephrolithotomy (PCNL), settings of 0.2 J and 125-200 Hz were found to be optimal. For ThuFLEP, all studies showed a significant improvement in IPSS (International Prostate Symptom Score), urinary flow rate (Qmax), quality of life measures, and post-void residual volume, with mean operative time ranging from 67-104.5 minutes. Our review shows that there is limited evidence on the use and clinical outcomes of TFL. ThuFLEP might suggest equivalence to the widely used HoLEP in the available evidence so far. TFL lithotripsy shows promising results but further prospective, randomized trials are required to properly assess its usability, clinical effectiveness and standardisation of the settings for successful adoption of the technology.

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Status

In-Process

Institution

(Rice, Somani) Department of Urology, University Hospital Southampton NHS Trust,
Southampton, United Kingdom (Somani) Manipal Academy of Higher Education, Manipal, India

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174.

The utility of instruments and disposables during endourologic practice among Egyptian urologists.

Omar M., Garabawey M.E., Sayedahmed K., Aboutaleb H., Noureldin Y.

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Journal of Clinical Urology. (no pagination), 2021. Date of Publication: 2021.

[Article]

AN: 2012933333

Objective: We aimed to investigate the prevalence of utilization of different endourological instruments and disposables among Egyptian urologists and to see how availability could affect the deviation from the universal standards that might result in reduced patient safety. **Patients and method:** We surveyed members of the Egyptian Urological Association by a questionnaire evaluating the importance of different instruments and disposables used during ureteroscopy and percutaneous nephrolithotomy. All responses were collected by a commercially available Internet-based survey host (www.surveymonkey.com) over 8 weeks.

Result(s): One hundred and fifty-two responses were received. For ureteroscopy, the most mandatory instruments and disposables included the C-arm device (83%), Dormia basket (61%), ureteral stone forceps (58%), pneumatic lithotripter (50%), and regular PTFE guide wire (49%). The instruments and disposables described as optional included 4.5 Fr ureteroscope (74%), flexible ureteroscope (70%), and hydrophilic guidewire (67%). For percutaneous nephrolithotomy, the most mandatory instruments and disposables were pneumatic lithotripter (78%), Alken metal dilator (75%), fascial dilator (45%), and regular PTFE guidewire (42%); while instruments and disposables described as optional included flexible cystoscope (70%), hydrophilic guidewire (67%), balloon dilator (57%), and laser machine (52%).

Conclusion(s): The prevalence of the utilization of newly introduced instruments and disposables is low among Egyptian urologists.

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Status

Article-in-Press

Author NameID

Omar, Mohamed; ORCID: <http://orcid.org/0000-0002-7808-2144>

Institution

(Omar, Garabawey, Sayedahmed, Aboutaleb) Department of Urology, Menoufia University, Egypt
(Noureldin) Department of Urology, Benha University, Egypt

Publisher

SAGE Publications Ltd

Year of Publication

2021

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175.

One- versus two-surgeon active stone retrieval procedures for flexible ureteroscopy: An off-site simulator comparative study.

Okada S., Hamamoto S., Inoue T., Minagawa S., Morikawa H., Matsuda T., Miura H.

Embase

International Journal of Urology. 28(6) (pp 665-671), 2021. Date of Publication: June 2021.

[Article]

AN: 2010766928

Objectives: To evaluate the efficacy of the one-surgeon basketing technique compared to the conventional two-surgeon method for flexible ureteroscopy.

Method(s): Seven urologists (three trained and four less-trained surgeons) extracted three renal stones using each technique with an off-site simulator. We analyzed the task completion time, the number of times the basket forceps were opened and closed, and unexpected events during stone-catching, for both techniques.

Result(s): There was no significant difference in the total task completion time between the one-surgeon (102.0 [interquartile range 63.5-164.0] s) and two-surgeon (99.5 [interquartile range 75.0-145.3] s) techniques. However, the time it took the trained surgeons to extract all stones was significantly shorter with the one-surgeon than with the two-surgeon technique (19.0 [interquartile range 18.0-20.0] s vs 34.0 [interquartile range 25.0-40.0] s; $P = 0.049$). Among the less-trained surgeons, the opposite effect was observed, but this difference was not statistically significant (96.5 [interquartile range 61.0-134.5] s vs 64.0 [interquartile range 51.5-77.0] s; $P = 0.489$). The number of times the forceps were opened and closed during stone-catching was significantly lower with the one-surgeon technique than with the two-surgeon technique (5.0 [interquartile range 4.0-5.0] times vs 9.0 [interquartile range 6.0-14.5] times; $P = 0.018$).

Conclusion(s): The one-surgeon technique can offer comparable efficacy to the two-surgeon technique. If surgeons are sufficiently trained, a one-surgeon basketing technique for performing flexible ureteroscopy might become a new technical modality for extracting renal stones.

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PMC Identifier

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Status

Embase

Author NameID

Okada, Shinsuke; ORCID: <http://orcid.org/0000-0003-0215-2617> Hamamoto, Shuzo; ORCID:

<http://orcid.org/0000-0002-9968-7468>

Inoue, Takaaki; ORCID: <http://orcid.org/0000-0001-8818-952X>

Institution

(Okada, Minagawa, Morikawa) Department of Urology, Gyotoku General Hospital, Chiba, Japan

(Hamamoto) Department of Nephro-urology, Nagoya City University Graduate School of Medical Sciences, Nagoya, Japan

(Inoue) Department of Urology, Hara Genitourinary Hospital, Hyogo, Japan

(Matsuda) Department of Urology and Andrology, Kansai Medical University, Osaka, Japan

(Miura) Department of Urology, Hachinohe Koyo Clinic, Aomori, Japan

Publisher

John Wiley and Sons Inc

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176.

What Do We Mean by "stone Free," and How Accurate Are Urologists in Predicting Stone-Free Status following Ureteroscopy?.

Ulvik O., Harneshaug J.-R., Gjengsto P.

Embase

Journal of Endourology. 35(7) (pp 961-966), 2021. Date of Publication: July 2021.

[Article]

AN: 635533208

Background and Purpose: No consensus exists on how stone-free rates (SFRs) should be reported after stone treatment. The aim of this study was to assess how accurate urologists predict their patients being stone free after completing ureteroscopy (URS) and to see how various treatment strategies influenced the precision of these predictions. We also wanted to study how different definitions of stone-free status (SFS) affected the results and propose a standard definition of "stone free" to be used in future studies.

Material(s) and Method(s): A retrospective evaluation of 1019 URS done for stone treatment at Haukeland University Hospital between 2013 and 2018 was performed. Data on pretreatment status, the surgical procedure, and follow-up were recorded. SFS was defined as either no fragments detected on computed tomography (CT) after 3 months or as practical stone-free status, which also included those with small residual fragments not needing further treatment. Exact chi-squared and independent-samples t-tests were used comparing data between different treatment modalities.

Result(s): The overall SFR, irrespective of treatment strategy and location of stone, using the no residual fragments and practical stone-free definitions were 54.2% and 74.7%, respectively. Urologists predicted intraoperatively that 91.0% of their patients treated with fragmentation and extraction would be stone free compared to 76.8% of patients treated with dusting, $p < 0.0001$. At follow-up, the actual SFRs with no residual fragments for the two treatment strategies were 68.0% and 35.5%, respectively, $p < 0.0001$. The practical SFRs for fragmentation and retrieval were 83.1% and 64.8% for dusting, $p < 0.0001$.

Conclusion(s): The different definitions of SFS have great impact on SFRs. Urologists are far too optimistic predicting their patient being stone free after URS. SFS should be defined as no fragments detected on CT 3 months after the URS procedure when presented in studies.

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PMC Identifier

33138642 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=33138642>]

Status

Embase

Institution

(Ulvik, Harneshaug, Gjengsto) Helse Bergen HF, Department of Urology, Haukeland University Hospital, Bergen, Norway (Ulvik) Department of Clinical Medicine (K1), University of Bergen, Bergen, Norway

Publisher

Mary Ann Liebert Inc.

Year of Publication

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177.

Initial Experience with the New Super Thin Single-use Pusen Flexible Ureteroscope 7.5 Fr in Renal Stones Endoscopic Treatment.

Geavlete B., Ene C., Iordache V., Geavlete P.

Embase

Chirurgia (Bucharest, Romania : 1990). 116(3) (pp 354-360), 2021. Date of Publication: 01 May 2021.

[Article]

AN: 635500982

Introduction: Single-use flexible ureteroscopes (SU-fURS) seems to overcome the main limitations of conventional reusable ureteroscopes in terms of acquisition and maintenance costs and breakages. Our aim was to analyze the efficiency and safety of the thinnest single use flexible scope from Pusen: Uscope Pusen, PU 3033A (Tip = 7.5 Fr.).

Material(s) and Method(s): We analyzed data from 24 patients with pyelocaliceal stones from January to March 2021. The mean age of the patients was 49 years (range 27 to 71 years). There were unique stones, 7 pyelic, 10 in inferior calyx, 4 in the middle calyx and 3 in superior calyx. The average stone size (larger diameter) was 18 mm (12-26 mm). We used Uscope Pusen 7.5 Fr. (PU 3033A) and Dornier Medilas H Solvo laser. In all cases we applied no touch technique (NTT). We didn't used CArm for progression control of the ureteroscope. We evaluated the patients for stone-free rate (SFR), mean operation time and complication rate.

Result(s): The average operative time was 72 +/- 21 minutes, range 66-131 min. For all 24 patients we didn't use wires or ureteral access sheath (NTT). Concerning the laser settings for dusting we used low energy: 0.5J, high frequency: 50 Hz, for pop-corning we used high energy: 1 J, medium frequency: 10-50 Hz, and for fragmenting high energy: 1 J, low frequency: 10 Hz. The stone-free status (residual fragments under 3 mm.) after one month was 91,7%. In 2 patients we need the second session with completely dusting of the residual stones. The visibility was optimal

and we didn't describe any mucosal lesions of the ureter when we retired the scope. The intrarenal maneuverability was very good. Clavien I and II occurred in 6 patients.

Conclusion(s): This new SU-fURS (7.5 Fr.) seems to be very effective and safe offering us an easy NTT. No ureteral damage and one day surgery are the main real minimally invasive characteristics of this ureteroscope.

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PMC Identifier

34191717 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=34191717>]

Publisher

NLM (Medline)

Year of Publication

2021

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178.

Cholangioscopic Holmium Laser Lithotripsy (CHOLI): Novel Surgical Technique for Complete Clearance of Intrahepatic Stones in Hepatolithiasis.

Vashistha N., Kumar A., Singhal D.

Embase

HPB. Conference: 14th World Congress of the International Hepato-Pancreato-Biliary Association. Virtual, Online. 23(Supplement 1) (pp S110), 2021. Date of Publication: January 2021.

[Conference Abstract]

AN: 2011477028

Background: In Hepatolithiasis without liver atrophy, abscess or cholangiocarcinoma (hepatectomy not indicated) complete stone clearance is essential for recurrence free long term outcome. For this purpose we used CHOLI using flexible ureterorenoscope (versatile, easy

availability) instead of choledochoscope (limited utility). CHOLI: Key Steps 1. Right Kocher's incision 2. Cholecystectomy 3. Choledochotomy and choledocholithotomy 4. Flexible ureterorenoscope (Karl Storz Flex 2, external diameter 7 F) introduced through choledochotomy. 5. Systematic biliary endoscopy and CHOLI for left and right hepatic ducts and segmental ducts and beyond. For this 200 micron holmium laser fiber was introduced through ureterorenoscope and stones pulverized. (Video) 6. Larger stone fragments removed with basket (Ngage nitinol stone extractor, size 1.7 F, length 115 cm; Cook Medical), while smaller stones were flushed out. 7. Choledochoscopy (ureterorenoscope) for residual stones in distal CBD. 8. Choledochocolicostomy (Roux loop 60 cm) Outcomes: O Setting: Tertiary care hospital in non endemic area O Patients: 4 (2 males, 2 female; age 51-59 years) O Extent: Left lobe + CBD (1), Bilobar + CBD (3) O Operating time: 360-420 minutes O Complete stone clearance: All patients O Complications (Clavien-Dindo ≥ 3): None O Follow up: 7-84 months O Recurrence: None Advantages: - Complete clearance of biliary system with single intervention (cf. endoscopic/percutaneous techniques) Flexible ureterorenoscope can access most peripheral ducts Holmium laser results in complete pulverization of stones - Technically simple, parenchyma preserving (cf. hepatectomy) - Lesions suspicious of concomitant cholangiocarcinoma can be biopsied

Conclusion(s): CHOLI achieves complete stone clearance in hepatolithiasis. [Formula presented]

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Status

CONFERENCE ABSTRACT

Institution

(Vashistha, Singhal) Department of Surgical Gastroenterology, Max Super Speciality Hospital, India (Kumar) Department of Urology & Kidney Transplant, Max Super Speciality Hospital, India

Publisher

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179.

Safety and efficacy of flexible and semi-rigid ureteroscopy with laser lithotripsy for the management of ureteral calculi in pregnancy.

Rashid A.O., Abdala R.Y.

Embase

African Journal of Urology. 27(1) (no pagination), 2021. Article Number: 46. Date of Publication: December 2021.

[Article]

AN: 2010710014

Background: Symptomatic ureteric stone during pregnancy can present a clinical challenge because of potential risks to both the mother and foetus. Ureteroscopy with laser and stone basket extraction represents an emerging strategy for definitive stone management in pregnancy, with minor complications. We aimed to evaluate the safety and efficacy of ureteroscopy with auxiliary procedures as a primary treatment for pregnant women with symptomatic ureteric stones who have failed conservative management.

Method(s): A prospective analysis was conducted in the Urology Department of Sulaymaniyah Teaching Hospital from June 2017 to November 2019 to evaluate pregnant patients who were treated with ureteroscopy and holmium laser lithotripsy for symptomatic ureteric stone.

Result(s): Twenty-six pregnant women aged between 18 and 34 years presented with renal colic (22 patients, 84.61%), severe hydronephrosis (3 patients, 11.53%), and progressive hydronephrosis (1 patient, 3.8%), suggesting ureteric stones. The diagnosis was established by abdominal ultrasonography. The mean stone size was 7.38 mm, ranging from 6-12 mm. The stones were located in the proximal ureter (n = 6, 23.1%), middle ureter (n = 0), and distal ureter (n = 20, 76.9%). Complete stone fragmentation was achieved in all patients. The overall procedure success rate was 87%, the stone-free rate was 23 out of 26 cases (88.46%), and no major obstetric or urologic complications were encountered.

Conclusion(s): Ureteric stone in pregnancy requires a high index of suspicion for a prompt and correct diagnosis. Ureteroscopy: flexible or semirigid endoscopy combined with holmium: YAG laser lithotripsy or with stone extraction are a preferred modality for the definitive treatment of symptomatic ureteric stone in pregnancy.

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Status

Embase

Author NameID

Rashid, Aso Omer; ORCID: <http://orcid.org/0000-0002-6524-6330>

Institution

(Rashid) Medical College, Sulaimany University, Sulaimany, Iraq (Abdala) Department of Urology, Sulaimany University Hospital, Sulaimany, Iraq

Publisher

Springer Science and Business Media Deutschland GmbH

Year of Publication

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180.

Benchtop Assessment of a New Single-Use Flexible Ureteroscope.

Whelan P., Terry R.S., Qi R., Ketterman B., Preminger G.M., Lipkin M.E.

Embase

Journal of Endourology. 35(6) (pp 755-760), 2021. Date of Publication: June 2021.

[Article]

AN: 635379502

Introduction: Single-use flexible ureteroscopes are an increasingly popular alternative to reusable ureteroscopes. In this study, we performed a benchtop examination of the physical and optical properties of the new Dornier Axis™ (Webling, Germany) single-use ureteroscope.

Method(s): Ten new, never-used Dornier Axis ureteroscopes were assessed for optical performance, maximal tip deflection, and irrigation flow rate with an empty working channel and with insertion of 200 and 365 microm laser fibers, and a 1.9F nitinol basket. All ureteroscopes were then fully deflected 100 times in each direction, and maximal deflection angles were re-measured with and without instruments in the working channel. All measurements were performed in duplicate. In vitro optical testing for resolution, image distortion, and depth of field was performed and compared vs the LithoVue™ (Boston Scientific, Marlborough, MA) single-

use ureteroscope. Statistical analyses using paired Wilcoxon rank-sum tests and Kruskal-Wallis multiple-group comparison tests were performed in R.

Result(s): Median maximal deflection angles exceeded 300degree in both directions before and after 100 full deflection cycles for all groups except the 365 microm laser fiber group. After 100 deflection cycles, there was no change in the majority of working instruments, except a decrease in upward flexion with an empty channel and 200 microm MosesTM laser fiber, and downward flexion with 200 microm FlexivaTM laser fiber (all <10degree). After excluding the 365 microm fiber, there was no difference in multi-group comparison for upward and downward flexion pre- and post-cycling. Median flow rate through an empty channel was 48.0 mL/min, and it decreased significantly with all used instruments ($p < 0.001$). Compared with the LithoVue, the Axis demonstrated superior resolution at all tested distances and less distortion.

Conclusion(s): The new Dornier Axis single-use ureteroscope demonstrates excellent tip deflection, which remains unchanged after 100 manual flexions in each direction. The Axis also demonstrates superior optical performance compared with the LithoVue in benchtop testing.

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PMC Identifier

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Status

Embase

Institution

(Whelan, Terry, Qi, Preminger, Lipkin) Division of Urology, Duke University Medical Center, 40 Duke Medicine Circle, Room 1573, Durham, NC 27710, United States (Kettermann) Duke University School of Medicine, Durham, NC, United States

Publisher

Mary Ann Liebert Inc.

Year of Publication

2021

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181.

Sheathless synchronous flexible ureterorenoscopy with holmium laser lithotripsy in complete duplex renal collecting system with stones.

Aggarwal D., Parmar K., Mathew J., Kumar S.

Embase

Urology Case Reports. 37 (no pagination), 2021. Article Number: 101707. Date of Publication: July 2021.

[Article]

AN: 2012012046

Duplication of renal system is one of the commonest renal anomalies. It is infrequently associated with renal calculus, ureterocele and vesico ureteric reflux. We report a 29-year male with right complete duplex system having upper moiety multiple ureteric calculi and lower moiety inferior renal calculus. Single sitting fURS was done and calculi in both systems were tackled one at a time. Calculi were dusted with holmium laser and double J stent placed in upper moiety ureter. Calculus management in anomalous kidney is challenging. Single sitting flexible ureterorenoscopy is feasible option in duplex renal system with low burden calculi.

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Status

Embase

Author NameID

Parmar, Kalpesh; ORCID: <http://orcid.org/0000-0003-3891-4089>

Institution

(Aggarwal, Parmar, Mathew, Kumar) Dept of Urology, PGIMER, Chandigarh, India

Publisher

Elsevier Inc.

Year of Publication

2021

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182.

Outcomes of retrograde flexible ureteroscopy and laser lithotripsy for stone disease in patients with anomalous kidneys.

Ugurlu I.M., Akman T., Binbay M., Tekinarslan E., Yazici O., Akbulut M.F., Ozgor F., Muslumanoglu A.Y.

Embase

Urolithiasis. 43(1) (pp 77-82), 2015. Date of Publication: February 2014.

[Article]

AN: 601386355

Due to the presence of structural and anatomical differences that accompany anomalous kidneys, currently available endourological modalities such as SWL and PNL may be insufficient, or additional laparoscopic assistance may be required. The present study aims to evaluate the efficacy and safety of retrograde flexible ureterorenoscopic stone treatment in patients with kidney anomalies. Over the last 3 years, 25 patients with renal stones in anomalous kidneys were consecutively treated by flexible ureterorenoscopy and holmium:YAG laser lithotripsy. Among the 25 patients, fiberoptic or digital flexible ureterorenoscopies were performed for the management of horseshoe kidneys (n = 3), cross-fused ectopic kidney (n = 1), renal ectopies [n = 13; associated with pelvic (n = 6) or lumbar kidneys (n = 7)], renal malrotations (n = 4), and duplicate ureters (n = 4). For lithotripsy, 200 or 273 microm probes were used, and for stone retraction 1.3-1.9 Fr ZeroTip baskets were used. Success was defined as the complete absence of stones as evaluated with a CT scan 1 month after the operation. The mean patient age was 39.4 +/- 15.75 years, and the mean stone size was 194.64 +/- 103.93 mm² (range 50-393). Complete stone clearance was achieved in 16 patients (64 %) after a single session. Seven of the patients with residual stones underwent a second session and the remaining three patients were subsequently treated with SWL. The overall complete clearance rate was 88 % (22 patients) with ancillary procedures. There were no serious postoperative complications except for one case (4 %) of urosepsis. Flexible ureterorenoscopy with holmium laser lithotripsy is a safe option for the treatment of renal stones in anomalous kidneys with satisfactory success rates.

Copyright © 2014, Springer-Verlag Berlin Heidelberg.

PMC Identifier

25161087 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=25161087>]

Status

Embase

Institution

(Ugurlu) Department of Urology, Ozel Hospitalium Sisli Hospital, Istanbul 34360, Turkey

(Akman) Department of Urology, Bezmialem Vakif University, Istanbul, Turkey

(Binbay, Tekinarslan, Yazici, Akbulut, Ozgor, Muslumanoglu) Department of Urology, Haseki Education and Research Hospital, Istanbul, Turkey

Publisher

Springer Verlag

Year of Publication

2015

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183.

Compare the Clinical Application of Ureteroscopic Occluder and Stone Retrieval Basket During Holmium Laser Treatment for Upper Ureteral Calculi.

Zhang L., Wu Y., Xu K., Tang H., Ding J., Wang W., Xu D., Gu Z.

Embase

Urology journal. 17(5) (pp 469-473), 2020. Date of Publication: 21 Jul 2020.

[Article]

AN: 632462180

PURPOSE: To explore the clinical efficacy of ureteroscopic occluder and stone retrieval basket combined with holmium laser in the treatment of upper ureteral calculi. MATERIALS AND

METHODS: This retrospective study included 103 patients treated with ureteroscopic holmium laser lithotripsy for upper ureteral stones. Patients were divided into two groups based on the device applied during lithotripsy: group 1 for the occluders (52 cases), and group 2 for the stone retrieval baskets (51 cases). The stone upward migration rate, stone-free rate, and complication rate during or after surgery were compared.

RESULT(S): The operation time was 45 +/- 7 min in the occluder group and 43 +/- 5 min in the basket group (P = .111). There was no significant difference between the stone retropulsion rate (13% vs. 16%, P = .787). The successful one-time stone-free rate was 92% vs. 94% (P = .999) respectively. Furthermore, there was no significant difference in the hospitalization time (P = .581) and postoperative complication rate (P = .715) between 2 groups.

CONCLUSION(S): The treatment of upper ureteral calculi with ureteroscopic occluder and stone retrieval basket combined with holmium laser lithotripsy can both effectively prevent intraoperative stone retropulsion, improve the success rate of one-time lithotrips. The occluder was more cost-effective than the stone retrieval basket, yet it was a more desired choice for over dilated ureters.

PMC Identifier

32715454 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=32715454>]

Institution

(Zhang, Wu, Tang, Ding, Wang, Xu, Gu) Department of Urology, Xin Hua Hospital Affiliated to Shanghai Jiao Tong University, School of Medicine, Shanghai 200092, China (Xu) Department of Urology, Changshu Hospital Affiliated to Nanjing University of Chinese Medicine

Publisher

NLM (Medline)

Year of Publication

2020

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184.

Endoscopic lithotripsy with a SuperPulsed thulium-fiber laser for ureteral stones: A single-center experience.

Enikeev D., Grigoryan V., Fokin I., Morozov A., Taratkin M., Klimov R., Kozlov V., Gabdullina S., Glybochko P.

Embase

International Journal of Urology. 28(3) (pp 261-265), 2021. Date of Publication: March 2021.

[Article]

AN: 2007470688

Objectives: To estimate the efficacy and safety of SuperPulsed thulium-fiber laser ureteral lithotripsy and to identify optimal laser settings.

Method(s): Patients with solitary stones were prospectively included. Lithotripsy was performed with a SuperPulsed thulium-fiber laser (NTO IRE-Polus, Fryazino, Russia) using a rigid ureteroscope 7.5 Ch (Richard Wolf, Knittlingen, Germany). We analyzed the efficacy of lithotripsy by measuring total energy required for stone disintegration, "laser-on" time, ablation speed, ablation efficacy, and energy consumption. Stone retropulsion and visibility were assessed using a three-point Likert scale. Complications were assessed using the Clavien-Dindo classification system.

Result(s): A total of 149 patients were included. The mean stone density was 985 +/- 360 Hounsfield units, the median (interquartile range) stone volume was 179 (94-357) mm³. The median (interquartile range) total energy was 1 (0.4-2) kJ, and laser-on time 1.2 (0.5-2.7) min. The median (interquartile range) stone ablation speed was 140 (80-279) mm³/min, energy for ablation of 1 mm³ was 5.6 (3-9.9) J/mm³ and energy consumption was 0.9 (0.6-1) J/min. A correlation was found between retropulsion and the energy used ($r = 0.5$, $P < 0.001$).

Multivariable analysis showed energy to be a predictor of increased retropulsion (odds ratio 65.7, 95% confidence interval 1.6-2774.1; $P = 0.028$). No predictors for worse visibility were identified.

Conclusion(s): The SuperPulsed thulium-fiber laser provides effective and safe lithotripsy during ureteroscopy regardless of stone density. Fiber diameter and laser frequency do not influence visibility or safety. Optimal laser settings are 0.5 J x 30 Hz for fragmentation and 0.15 J x 100 Hz for dusting.

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PMC Identifier

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Status

Embase

Institution

(Enikeev, Grigoryan, Fokin, Morozov, Taratkin, Klimov, Glybochko) Institute for Urology and Reproductive Health, Sechenov University, Moscow, Russian Federation (Kozlov) Department of Public Health and Healthcare, Sechenov University, Moscow, Russian Federation (Gabdullina) Institute of Linguistics and Intercultural Communication, Sechenov University, Moscow, Russian Federation

Publisher

Blackwell Publishing

Year of Publication

2021

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185.

Outcomes of thulium fibre laser for treatment of urinary tract stones: results of a systematic review.

Kronenberg P., Hameed B.Z., Somani B.

Embase

Current opinion in urology. 31(2) (pp 80-86), 2021. Date of Publication: 01 Mar 2021.

[Article]

AN: 634070491

PURPOSE OF REVIEW: Lasers have become a fundamental aspect of stone treatment. Although Holmium:Yttrium-Aluminum-garnet (Ho:YAG) laser is the current gold-standard in endoscopic laser lithotripsy, there is a lot of buzz around the new thulium fibre laser (TFL). We decided to evaluate the latest data to help create an objective and evidence-based opinion about this new technology and associated clinical outcomes. RECENT FINDINGS: Sixty full-text articles and peer-reviewed abstract presentations were included in the qualitative synthesis of this systematic review performed over the last 2 years. Current super pulsed TFL machines are capable of achieving peak powers of 500W and emit very small pulse energies of 0.025 Joules going up to 6 Joules, and capable of frequency over 2000 Hz. This makes the TFL ablate twice as fast for fragmentation, 4 times as fast for dusting, more stone dust of finer size and less retropulsion compared to the Ho:YAG laser. Because of the smaller laser fibres with the TFL, future miniaturization of instruments is also possible. SUMMARY: Based on the review, the TFL is a potential game-changer for kidney stone disease and has a promising role in the future.

However larger multicentric prospective clinical studies with long-term follow-up are needed to establish the safety and efficacy of the TFL in endourology.

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33470684 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=33470684>]

Institution

(Kronenberg) Hospital CUF Descobertas, Lisbon, Portugal (Hameed) Kasturba Medical College

Manipal, Manipal Academy of Higher Education, Manipal, Karnataka, India

(Somani) University Hospital Southampton NHS Foundation Trust, Southampton, United

Kingdom

Publisher

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186.

Ureteroscopic stone removal in the distal ureter. Why change?.

Rodrigues Netto Jr. N., De Almeida Claro J., Esteves S.C., Andrade E.F.M.

Embase

Journal of Urology. 157(6) (pp 2081-2084), 1997. Date of Publication: June 1997.

[Article]

AN: 27208646

Purpose: We compared our experience with ureteroscopic stone basket manipulation under fluoroscopic guidance to ultrasound ureterolithotripsy for distal ureteral stone removal.

Material(s) and Method(s): Retrospectively, we analyzed the medical records of 981 patients with ureteral calculi between January 1994 and December 1995, of whom 483 (49%) were treated for

stones in the lower ureter and constituted our study group. The decision of when to perform lithotripsy (group 2) versus a basket procedure (group 1) was based on a prospective nonrandomized study and both groups were compared historically. All 322 patients in group 1 (mean age 49 years, range 14 to 86) primarily underwent ureteroscopic stone basket manipulation using the 4-wire Segura* basket. If the calculus could not be removed with the basket and another procedure was necessary, the case was considered a failure. The 161 patients in group 2 (mean age 37 years, range 14 to 74) underwent initially ultrasound ureterolithotripsy for stone fragmentation followed or not by removal of the fragments with the basket. Stone size did not differ significantly between groups 1 (mean 0.9 cm., range 0.6 to 1.7) and 2 (mean 0.8 cm., range 0.7 to 2.0). Ureteroscopy was performed in both groups with epidural anesthesia and on an outpatient basis in the majority of cases.

Result(s): The stone-free rate after 1 procedure was 98.1 and 95.6% in groups 1 and 2, respectively. For group 2 versus group 1 the operative time was longer (mean 50, range 25 to 90 versus mean 19 minutes, range 11 to 40, respectively, $p < 0.001$), the complication rate was greater (16.1 versus 4.3%, respectively, $p < 0.001$) and average hospital stay was longer (2.1 versus 0.15 day, respectively, $p < 0.001$).

Conclusion(s): Ureteroscopic stone treatment with basket manipulation under fluoroscopic guidance or ultrasound ureterolithotripsy provided a high stone-free rate. However, stone removal with the basket manipulation technique should be considered the first choice for treatment of small distal ureteral calculi based on the minimal morbidity, and short operative and recovery times.

PMC Identifier

9146584 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=9146584>]

Status

Embase

Institution

(Rodrigues Netto Jr., De Almeida Claro, Esteves, Andrade) Division of Urology, Hosp. Beneficencia Portuguesa S. P., Faculdade Cie. Medicas da Univ. E., Campinas, Sao Paulo, Brazil

Publisher

Elsevier Inc.

Year of Publication

1997

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187.

In-vitro and in-vivo new evidence for Flexor Vue™ deflecting endoscopic system use: optimization of the stone free rate (SFR) after flexible ureteroscopy and Ho:YAG laser lithotripsy. Saita A., Villa L., Persico F., Lughezzani G., Prezioso D., Casale P.

Embase

Urolithiasis. 49(3) (pp 239-245), 2021. Date of Publication: June 2021.

[Article]

AN: 2006846429

To test in-vitro and in-vivo the Flexor Vue™ deflecting endoscopic system (FVDES) as a new technology able to improve the removal of residual intrarenal fragments. This is an observational prospective "proof of concept" study performed in patients with renal calculi treated with flexible ureteroscopy and Ho:YAG laser lithotripsy (f-URS) in Humanitas Research Hospital (Rozzano, Italy). We assessed feasibility, efficacy and safety of FVDES as an in-vivo tool for removing residual fragments after f-URS. The stone-free rate (SFR) at 30 days post-operatively was evaluated using CT. An in-vitro model was developed to evaluate the FVDES when used for this purpose. Eleven patients (M/F ratio: 7/4, mean age 63.5 +/- 8.3) were treated. The stones were located in the lower calyces and the renal pelvis in 3 and 8 patients, respectively. Mean stone size was 18 +/- 3.2 mm. The procedure with FVDES was feasible and effective in all the patients. Mean operative time was 82 +/- 13.7 min and median hospitalization was of 1.5 days. The SFR after 90 days was 81% (9/11). We reported no relevant complications (Clavien-Dindo > 2); one patient had fever and was treated with antibiotics. The experimental in-vitro model demonstrated the efficacy of FVDES, allowing the removal of about 90% of fragments. Our study showed that FVDES is effective when used as a tool for retrieval of residual fragments at the end of f-URS. This technology could ensure a complete cleaning of the intrarenal collecting system and represent a safe alternative to basketing.

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PMC Identifier

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Status

In-Process

Author NameID

Persico, Francesco; ORCID: <http://orcid.org/0000-0003-0000-5517>

Institution

(Saita, Persico, Lughezzani, Casale) Department of Urology, Humanitas Clinical and Research Center - IRCCS, Rozzano, Milan, Italy (Villa) Division of Experimental Oncology/Unit of Urology URI, Ospedale San Raffaele IRCCS, Milan, Italy

(Persico, Prezioso) Department of Neurosciences, Sciences of Reproduction, and Odontostomatology, University of Naples Federico II, Naples, Italy

(Lughezzani) Department of Biomedical Sciences, Humanitas University, Rozzano, Milan, Italy

Publisher

Springer Science and Business Media Deutschland GmbH

Year of Publication

2021

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188.

Ureteropyeloscopic removal or ureteral calculi.

Randall Seeger A., Rittenberg M.H., Bagley D.H.

Embase

Journal of Urology. 139(6) (pp 1180-1183), 1988. Date of Publication: 1988.

[Article]

AN: 18151256

Ureteroscopy has been used for the treatment of calculi throughout the ureter. The results of ureteroscopic stone removal were reviewed in 100 patients. Similar results were compared in 30 patients undergoing ureterolithotomy and 32 treated by basket manipulation. Success of ureteroscopic removal was related to the location of the calculus: 50 per cent in the proximal, 80

per cent in the mid and 99 per cent in the distal ureter. Hospital stay, costs and narcotic analgesic use were significantly less for ureteroscopic stone removal than for open survival lithotomy. The success rate for ureteroscopic removal of distal calculi (99 per cent) was higher than for blind basketing procedures (59 per cent). Ureteroscopy should be considered the technique of choice for the removal of distal ureteral calculi. It is an acceptable alternative for treatment of calculi throughout the urinary tract.

PMC Identifier

2897476 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=2897476>]

Status

Embase

Institution

(Randall Seeger, Rittenberg, Bagley) Department of Urology, Jefferson Medical College of Thomas Jefferson University, Philadelphia, PA United States

Year of Publication

1988

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189.

The application of retrograde intrarenal surgery to remove a single large kidney stone during pregnancy.

Jongjitaree K., Taweemonkongsap T., Leewansangtong S., Srinualnad S., Chotikawanich E.

Embase

Research and Reports in Urology. 12 (pp 351-355), 2020. Date of Publication: 2020.

[Article]

AN: 2005020946

Purpose: To report the application and outcome of retrograde intrarenal surgery (RIRS) to remove a large kidney stone during pregnancy. Patient and Methods: A 30-year-old woman

presented with an infected kidney stone (3 cm in size) at 4 weeks of pregnancy. We decided to remove the stone due to the possibility of obstruction and infection and chose to carry out this procedure by RIRS. In order to avoid complications associated with anesthetic, the surgery was carried out after the infection had cleared and when the patient had entered the second trimester of pregnancy. First, we used an ureteral access sheath and semi-rigid ureteroscopy to evaluate the ureteral lumen. We confirmed that the ureteral access sheath had been positioned appropriately by direct visualization with a flexible ureterorenoscope. The procedure was then carried out with a radiation-free protocol and without fluoroscopy. Ho-YAG laser lithotripsy was used to fragment the stones, and these fragments were then removed in a stone basket. The patient required three sessions of RIRS to remove the stone in its entirety; during this time, the patient was 18-29 weeks into her pregnancy. During each session, we removed approximately 30% of the stone. The patient developed fever after the first operation but responded fully to antibiotics. There were no perioperative complications, and the patient only remained in hospital for 3 days. The male infant was delivered by caesarian section at 37 weeks of pregnancy without any health complications. Results and

Conclusion(s): We successfully removed a large kidney stone from a pregnant patient using an ureteral access sheath and RIRS without fluoroscopy. There were no complications indicating that this procedure can be carried out safely during pregnancy.

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Status

Embase

Institution

(Jongjitaree, Taweemonkongsap, Leewansangtong, Srinualnad, Chotikawanich) Division of Urology, Department of Surgery, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand

Publisher

Dove Medical Press Ltd

Year of Publication

2020

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190.

Laser fibre, rather than the stone, may harm the scope: retrospective monocentric analysis of 26 pre- and intraoperative factors of flexible ureteroscope (fURS) damage.

Ozimek T., Cordes J., Gilbert N., Hupe M.C., Wiessmeyer J.R., Schneider M.H., Merseburger A.S., Kramer M.W.

Embase

World journal of urology. 38(8) (pp 2035-2040), 2020. Date of Publication: 01 Aug 2020.

[Article]

AN: 629714111

PURPOSE: The increasing number of flexible ureteroscopy procedures, the fragility of devices and their repair costs are a burden for urological departments worldwide. The objective was to investigate the impact of 26 pre- and intraoperative factors on reusable flexible ureteroscope (fURS) damage.

METHOD(S): All procedures were conducted with reusable fURS: Karl Storz Flex-X2 or Olympus URF-V. Statistical analysis was performed in RStudio (1.0.136) with Chi-square test and Mann-Whitney U tests (MWU).

RESULT(S): In total, 416 flexible ureteroscopies, performed between September 2013 and June 2017, were analysed. 283 (68.03%) of these were for kidney stone surgery, and 133 (31.97%) for diagnostic purposes. In total, 39 (9.38%) devices were postoperatively deemed defective. The application of reusable laser fibre through fURS was more common in cases with documented defects [17/39 (43.59%) vs. 102/377 (27.06%), $p=0.047$]. Other factors such as application of nitinol basket, biopsy via fURS, insertion of access sheath (UAS), as well as stone burden [median kidney stone maximal diameter: 6 mm (min 2.0; max 30.0) vs. 6 mm (min 1.0 vs. max 30.0)] showed no influence on fURS damage rate ($p>0.05$). The infundibulopelvic angle (IPA) was steeper in cases with fURS damage as compared to cases without damage [median 44.0degree (min 20.0; max 81.0) vs. 55.0 (min 7.0; max 122.0), $p<0.001$].

CONCLUSION(S): Application of laser fibre via fURS can be considered as a risk factor of fURS damage. Stone burden, as well as the usage of not-sharp ended devices as nitinol baskets or forceps, is primarily not responsible for fURS damage.

PMC Identifier

31659464 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=31659464>]

Institution

(Ozimek, Cordes, Gilbert, Hupe, Wiessmeyer, Schneider, Merseburger, Kramer) Department of Urology, University Hospital Schleswig-Holstein, Campus Luebeck, Ratzeburger Allee 160, Lubeck 23538, Germany

Publisher

NLM (Medline)

Year of Publication

2020

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191.

Retrograde intrarenal surgery using a 1.94 m superpulsed thulium fiber laser.

Klimov R.E., Lekarev V.Y., Tsarichenko D.G., Dymov A.M., Akopyan G.N., Chinenov D.V., Korolev D.O., Ali S.H., Gerasimov A.N., Rapoport L.M., Glybochko P.V.

Embase

Urologiia (Moscow, Russia : 1999). (1) (pp 28-32), 2021. Date of Publication: 01 Mar 2021.

[Article]

AN: 634749618

INTRODUCTION: surgical treatment of urinary stone disease plays an important role in urological practice. Stone fragmentation can be performed using various lithotripters, from which Holmium fiber laser (Ho: YAG) has currently taken the main place. According to the current literature, a superpulsed thulium fiber laser with a wavelength of 1.94 m and a maximum power output of 40 W showed in vitro higher efficiency compared to Ho: YAG, while having the same safety profile. The use of a thulium fiber laser with a pulse energy of 0.025-6 J and a high repetition rate (up to 1600 Hz) allows to most effectively perform stone dusting during retrograde intrarenal surgery (RIRS). AIM: to improve the performance of RIRS using the 1.94m superpulsed thulium fiber laser. MATERIALS AND METHODS: a total of 152 patients with renal stones who were treated during the period from February 2018 to July 2019 were included in the study. The analysis of the

laser settings, their effect on retropulsion and visibility when performing RIRS using a superpulsed thulium fiber laser with a wavelength of 1.94 m and a maximum power output of 40 W, a peak power of 500 W, as well as an assessment of the stone-free rate the first postoperative day and 3 months after the procedure was done.

RESULT(S): The most frequently used settings were as following: 0.5 J, 30 Hz, 15 W (No. 1), 0.15 J, 200 Hz, 30 W (No. 2), 0.8 J, 31.25 Hz, 25 W (No. 3), 0.8 J, 37.5 Hz, 30 W (No. 4). The statistical analysis of the influence of the settings on the quality of endoscopic imaging and retropulsion was carried out. In addition, the features of each settings were analyzed. The stone-free rate on the first postoperative day was evaluated using low-dose CT.

CONCLUSION(S): A superpulsed thulium fiber laser with a wavelength of 1.94 m and a maximum power of 500 W has shown high efficiency in clinical practice when performing RIRS, since it allows to have good endoscopic imaging, minimal retropulsion, and to perform stone dusting, which had a positive effect on the stone-free rate. Optimization of the settings of thulium fiber lithotripsy may improve the results of surgical treatment of urinary stone disease.

PMC Identifier

33818931 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=33818931>]

Institution

(Klimov, Lekarev, Tsarichenko, Dymov, Akopyan, Chinenov, Korolev, Ali, Gerasimov, Rapoport, Glybochko) FGAOU VO I.M. Sechenov First Moscow State Medical University, Moscow, Russian Federation (Klimov, Lekarev, Tsarichenko, Dymov, Akopyan, Chinenov, Korolev, Ali, Gerasimov, Rapoport, Glybochko) Department of Medical Informatics and Statistics of FGAOU VO I.M. Sechenov First Moscow State Medical University, Moscow, Russian Federation

Publisher

NLM (Medline)

Year of Publication

2021

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192.

Re: Bare naked baskets: Ureteroscope deflection and flow characteristics with intact and disassembled ureteroscopic nitinol stone baskets [3].

Landman J., Clayman R.V.

Embase

Journal of Urology. 169(1) (pp 292-293), 2003. Date of Publication: 01 Jan 2003.

[Letter]

AN: 35461622

PMC Identifier

12478170 [<https://www.ncbi.nlm.nih.gov/pubmed/?term=12478170>]

Status

Embase

Institution

(Landman) Division of Urology, Washington Univ. School of Medicine, 4960 Children's Place, St. Louis, MO 63110, United States (Clayman) Department of Urology, University of California, Irvine, 101 The City Drive, Orange, CA 92868, United States

Publisher

Lippincott Williams and Wilkins

Year of Publication

2003

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193.

The Feasibility of Pop-Dusting Using High-Power Laser (2 J x 50 Hz) in Retrograde Intrarenal Surgery for Renal Stones: Retrospective Single-Center Experience.

Chung J.H., Baek M., Park S.S., Han D.H.

Embase

Journal of Endourology. 35(3) (pp 279-284), 2021. Date of Publication: March 2021.

[Article]

AN: 634504608

Objective: Recently, retrograde intrarenal surgery (RIRS) using laser lithotripsy has become popular. However, the optimal laser energy setting for pop-dusting has not been established. In this study, we report our experiences of RIRS using the high-power (up to 100 W) pop-dusting (HPPD) technique.

Method(s): This study retrospectively assessed 82 cases with RIRS using HPPD. Patients who underwent abdominal CT or mercaptoacetyl triglycine (MAG3) diuretic renal scan at 3 months postoperatively were included in this study. Patient and stone characteristics and perioperative and postoperative outcomes were evaluated.

Result(s): The average number of renal stones was 3.67 ± 4.11 , and the average length of the largest stones was 13.30 ± 6.41 mm. The mean Hounsfield units was 959.99 ± 384.73 . The operation time was 58.10 ± 26.67 minutes. The mean HPPD time was 11.93 ± 9.48 minutes, with settings of 1.97 ± 0.25 J and 48.78 ± 3.29 Hz. The stone-free rate was 89%. The mean hospital stay was 1.68 ± 1.29 days. Pelvicaliceal and ureter injuries were observed in 9.8% and 32.9% of the study population, respectively. However, there was no transfusion, subcapsular hematoma, persistent urinary leakage, ureteral or infundibular stricture, or renal functional deterioration. There was transient postoperative fever in 12.2% of the study population.

Conclusion(s): HPPD could be performed safely during RIRS for renal stones without significant complications such as collecting system injury or bleeding. High-power laser mode (up to 100 W) can be a safe and effective choice for pop-dusting during RIRS, especially for large and hard stones.

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PMC Identifier

33081518 [<https://www.ncbi.nlm.nih.gov/pubmed/?term=33081518>]

Status

Embase

Institution

(Chung, Baek, Park, Han) Department of Urology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, South Korea

Publisher

Mary Ann Liebert Inc.

Year of Publication

2021

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Link to the External Link Resolver:

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194.

Laser Lithotripsy: The Importance of Peak Power and Pulse Modulation.

Ventimiglia E., Villa L., Doizi S., Briganti A., Proietti S., Giusti G., Montorsi F., Montanari E., Traxer O., Salonia A.

Embase

European Urology Focus. 7(1) (pp 22-25), 2021. Date of Publication: January 2021.

[Review]

AN: 2010866557

Despite the worldwide spread of Ho:YAG lasers in urology departments, the physical principles behind their functioning may still seem obscure to many urologists. Moreover, a new laser source, the thulium fiber laser (TFL), was recently approved for stone lithotripsy. Here we describe the concepts of peak power and pulse modulation for laser lithotripsy, analyzing both Ho:YAG lasers and TFLs. Different pulse modalities are available for Ho:YAG lasers-long and short pulses and Moses technology-each with a different pulse shape and peak power. Lower peak power and a more rectangular pulse shape provide higher ablation efficiency and lower stone retropulsion. These characteristics are perfectly embodied by TFL, which shows the most effective ablation efficiency in laboratory studies. A long pulse is the most effective modality for Ho:YAG lasers. Moses technology, despite its promising rationale, is not superior to long-pulse mode. Clinical studies are needed in order to confirm these laboratory data.

Patient Summary: Laser lithotripsy is one of the main options for the treatment of urinary stones. The peak power and pulse modulation influence the choice of the optimal laser mode for the treatment of urinary stones. Thulium fiber lasers have shown the most favorable dusting profile in terms of both peak power and pulse modality in laboratory studies, but clinical evidence is still lacking. Peak power and pulse modulation influence choice of the optimal laser mode for the treatment of urinary stones. Thulium fiber lasers show the best profile in terms of both peak power and pulse modulation, although clinical studies are still awaited.

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PMC Identifier

33531287 [<https://www.ncbi.nlm.nih.gov/pubmed/?term=33531287>]

Status

Embase

Author NameID

Ventimiglia, Eugenio; ORCID: <https://orcid.org/0000-0003-3654-1629>

Institution

(Ventimiglia, Villa, Briganti, Montorsi, Salonia) Division of Experimental Oncology/Unit of Urology, Urological Research Institute, IRCCS Ospedale San Raffaele, Milan, Italy (Doizi, Traxer) Groupe de Recherche Clinique sur la Lithiase Urinaire, Hopital Tenon, Sorbonne Universite, Paris, France

(Doizi, Traxer) Service d'Urologie, Assistance-Publique Hopitaux de Paris, Hopital Tenon, Sorbonne Universite, Paris, France

(Proietti, Giusti) Department of Urology, Ospedale San Raffaele Sede di San Raffaele Turro, Milan, Italy

(Montanari) Urology Unit, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy

Publisher

Elsevier B.V.

Year of Publication

2021

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195.

Treatment procedures for urolithiasis.

Purpurowicz Z.

Embase

Polish Annals of Medicine. 17(1) (pp 123-128), 2010. Date of Publication: 2010.

[Article]

AN: 366088410

Introduction: Urolithiasis remains a great medical challenge. The last two decades of the 20th century witnessed a rapid development in minimally invasive surgery methods for urolithotomy. The beginning of the 21st century is marked with a further perfecting of these methods. Aim. The aim of this work was to present modern methods for evacuating uroliths from kidneys, ureters, bladder and urethra. The choice of the most adequate method is discussed, taking into account location and size of concrement and a patient's condition. Discussion. Up till the 1980s, uroliths located in kidneys and ureters could have been removed only surgically. In some cases, concrements were extracted from the inferior ureter by the Zeiss-loop procedure or with a Dormia basket. At the beginning of the 1980s, three new minimally invasive surgery methods of lithotomy were introduced: extracorporeal shock wave lithotripsy, percutaneous nephrolithotripsy and ureteroscopic lithotripsy. Modern treatment of urolithiasis is based on the rational establishment of recommendations for one of these methods or their combination. A proper treatment of urolithiasis is ensured by performing it in a center equipped with adequate medical equipment and devices, and employing urologists with clinical experiences and technical skills. Despite technological advancement, surgical treatment is not complications free. The fewest complications definitely occur in evacuating smaller uroliths as well as in treating urolithiasis uncomplicated by infection and urine retention. Conclusions. Early diagnosis of urolithiasis and the application of minimally invasive surgery methods to remove concrements ensure retaining a proper kidney function.

Status

Embase

Institution

(Purpurowicz) Department of Urology, Municipal Hospital, ul. Niepodleglosci 44, 10-200 Olsztyn, Poland

Publisher

Urban and Partner

Year of Publication

2010

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196.

Candida glabrata fungemia in a diabetic patient with neurogenic bladder: Successful treatment with micafungin.

Haruyama N., Masutani K., Tsuruya K., Sugiwaka S., Toyonaga J., Yao T., Goto K., Tokumoto M., Hirakata H., Iida M.

Embase

Clinical Nephrology. 66(3) (pp 214-217), 2006. Date of Publication: September 2006.

[Article]

AN: 44382866

A 69-year-old man was transferred to our hospital because of fever and acute renal failure. 5 weeks prior to admission, he was admitted to another hospital and treated with several antibiotics including vancomycin, but fever did not subside and renal dysfunction showed rapid progression. On admission, laboratory findings revealed pyuria, inflammatory changes, acute renal failure, and disseminated intravascular coagulation (DIC). Computed tomography showed left ureteral stone and hydronephrosis. Gallium scintigraphy showed avid uptake in the left kidney. Serum concentration of vancomycin was 57.4 mug/ml. *Candida glabrata* was isolated from blood, sputum and urine. Under the diagnosis of fungemia and left pyelonephritis, he was treated with micafungin (150 mg/day), gabexate mesilate and insertion of a double-ended pigtail catheter. The above treatment produced regression of systemic inflammation, DIC and acute renal failure. At the last follow-up 3 weeks after discharge, ureteroscopy showed that the ureter stone had already passed but a soft white-yellowish bezoar was detected in the ureter. In this case, neurogenic bladder, poorly controlled diabetes, and long-term antibiotic treatment probably enhanced the development of *C. glabrata* infection. Antifungal treatment with micafungin is useful in patients with non-albicans *Candida* infection because of the frequency of infections caused by this fungus [Schulz and Bernhardt 1997]. In contrast to other sites of infection, approximately 50% of urinary isolates of *Candida* are non-albicans *Candida* species, including *C. glabrata* [Sobel et al. 2000]. *C. glabrata* infections are often resistant to azole antifungals [Hitchcock et al. 1993]. Consequently, *C. glabrata* fungemia is associated with a high mortality rate in compromised, at-risk hospitalized patients [Gumbo et al. 1999, Krcmery et al. 1999, Malani et al. 2005]. We report here a case of severe acute pyelonephritis and fungemia due to *C. glabrata* infection,

successfully treated with micafungin and pigtail ureteral stent insertion. © 2006 Dustri-Verlag Dr. K. Feistle.

PMC Identifier

16995345 [<https://www.ncbi.nlm.nih.gov/pubmed/?term=16995345>]

Status

Embase

Institution

(Haruyama, Masutani, Tsuruya, Sugiwaka, Toyonaga, Yao, Tokumoto, Iida) Department of Medicine and Clinical Science, Graduate School of Medical Sciences, Kyushu University Hospital, Maidashi 3-1-1, Higashi-ku, Fukuoka 812-8582, Japan (Goto) Department of Urology, Graduate School of Medical Sciences, Kyushu University, Maidashi 3-1-1, Higashi-ku, Fukuoka 812-8582, Japan

(Hirakata) Kidney Care Unit, Kyushu University Hospital, Maidashi 3-1-1, Higashi-ku, Fukuoka 812-8582, Japan

Publisher

Dustri-Verlag Dr. Karl Feistle

Year of Publication

2006

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197.

In Vitro Dusting Performance of a New Solid State Thulium Laser Compared to Holmium Laser Lithotripsy.

Petzold R., Miernik A., Suarez-Ibarrola R.

Embase

Journal of Endourology. 35(2) (pp 221-225), 2021. Date of Publication: 01 Feb 2021.

[Article]

AN: 634304005

Purpose: To examine the dusting performance of a novel solid state Thulium laser device compared to a standard holmium:yttrium-aluminum-garnet (Ho:YAG) device.

Method(s): This study compares a Dornier Medilas H Solvo 35 with an evaluation model of a pulsed solid state thulium:yttrium-aluminum-garnet (Tm:YAG) laser (Dornier MedTech Laser GmbH, Wessling, Germany). The in vitro model consisted of a mold with irrigated water at 37degreeC. For 2-9 minutes, laser fibers were guided by an xy-plotter in spirals over BegoStones. Stone mass was measured before and after laser application. Comparisons to Ho:YAG and further Tm:YAG investigations were performed.

Result(s): Identical settings with similar pulse durations yielded a significant 14% advantage for Ho:YAG in slow fiber speeds and a tendency toward 15% higher efficiency of Tm:YAG in fast fiber speeds. Increased pulse duration in Tm:YAG led significantly to 32%-54% higher ablation rates in comparison to Tm:YAG in both setups. Ablated mass loss range is 102-1107 mg for slow fiber speeds and 22-528 mg for fast speeds. Mass loss is proportional to pulse energy, frequency, and pulse duration, whereas pulse energy defines the penetration depth into the model stones. Frequency characterizes the ablation homogeneity and possible working speeds.

Conclusion(s): Tm:YAG is significantly more efficient when longer pulse durations are used. Identical settings revealed a strong connection to fiber movement speeds. In addition, the Tm:YAG device enables a broader range of settings with the possibility of minimal pulse energy of 100 mJ for low retropulsion and fine dusting with possible frequencies <=200 Hz.

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PMC Identifier

32799650 [<https://www.ncbi.nlm.nih.gov/pubmed/?term=32799650>]

Status

Embase

Institution

(Petzold, Miernik, Suarez-Ibarrola) Department of Urology, Faculty of Medicine, University of Freiburg - Medical Centre, Freiburg, Germany

Publisher

Mary Ann Liebert Inc.

Year of Publication

2021

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198.

In Vitro Evaluation of Stone Fragment Evacuation by Suction.

Schneider D., Abedi G., Larson K., Ayad M., Yoon R., Patel R.M., Landman J., Clayman R.V.

Embase

Journal of Endourology. 35(2) (pp 187-191), 2021. Date of Publication: 01 Feb 2021.

[Article]

AN: 634304003

Introduction: Contemporary, flexible stone baskets are unable to extract submillimeter stone fragments at the time of ureteroscopic laser lithotripsy. In this in vitro study, the feasibility of suctioning submillimeter fragments with a standard Luer Lock syringe through the working channel of a flexible ureteroscope was assessed.

Material(s) and Method(s): Phantom stones made from industrial plaster were mechanically fragmented into ≤ 1 and ≤ 0.5 -mm groups. Both stone groups were divided into five preweighed trial samples. Each stone group was then mixed in a beaker filled with normal saline. A standard 10-mL Luer Lock syringe was connected to a fiber-optic ureteroscope with a 1.2-mm working channel. The syringe was then used to suction stone fragments from the beaker. The suctioned stone fragments and the stone fragments remaining in the beaker after removing the overlying solution were separated, centrifuged with supernatant removed, and dried in an incubator set at 33°C for 1 week. Dried weights were recorded.

Result(s): Mean total weights for ≤ 0.5 and ≤ 1.0 -mm stone groups at baseline were 0.807 and 0.806 g, respectively. The mean percentages of stone fragments suctioned through the ureteroscope for ≤ 0.5 and ≤ 1.0 -mm groups were 86% and 86%, respectively ($p = 0.973$). During suctioning, 64% of stones in the ≤ 0.5 -mm group were trapped in either the working channel of the ureteroscope or within the Luer Lock syringe compared with 78% of stones in the ≤ 1 -mm group ($p = 0.001$) requiring cessation of the procedure to clear the channel.

Conclusion(s): It is feasible to suction submillimeter stone fragments by connecting a Luer Lock syringe to the working channel of a flexible ureteroscope. The limiting factor for removing stone fragments appears to be the small working channel of flexible ureteroscopes as trapping of fragments during suctioning is common and requires time-consuming removal of the endoscope and clearing of the channel.

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PMC Identifier

32791862 [<https://www.ncbi.nlm.nih.gov/pubmed/?term=32791862>]

Status

Embase

Institution

(Schneider, Abedi, Larson, Ayad, Yoon, Patel, Landman, Clayman) Department of Urology,
University of California, Orange, CA, United States

Publisher

Mary Ann Liebert Inc.

Year of Publication

2021

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[Click here for full text options](#)

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199.

Laser lithotripsy: Settings for surgeons.

Farag M., Bolton D.

Embase

International Journal of Urology. Conference: 18th Urological Association of Asia Congress, UAA
2020. Seoul South Korea. 27(SUPPL 1) (pp 74), 2020. Date of Publication: October 2020.

[Conference Abstract]

AN: 634271658

Background Laser lithotripsy is a procedure to break apart renal and ureteric calculi so that they may be removed with a basket or are small enough to pass out of the urinary system. The latest laser lithotripter technologies have two broad but poorly defined modes for laser lithotripsy, 'fragmentation' of calculi versus 'dusting' of calculi. Objectives We compared the size of the stones and outcomes with the settings used on the laser lithotripter. We examined the total

Joules used on each patient and whether it correlated with the surgeon, stone size, stone location and/or stone composition. We also reviewed recent studies that have attempted to prospectively evaluate dusting head-to-head with fragmenting in terms of safety and stone free rates. Materials and methods We looked at 400 patients undergoing laser lithotripsy across 3 hospitals in Melbourne, Australia. Preliminary findings suggest that surgeon preference was a significant factor, more so than stone size. Furthermore, no correlations were found between stone size/and composition with settings used. Results and conclusion 'Dusting' is the novel of the two settings, the literature agrees on the safety of this technique, however no standard definitions of 'dusting' currently exist; a consensus is needed in order to standardize comparative studies in terms of efficacy.

Status

CONFERENCE ABSTRACT

Institution

(Farag, Bolton) Department of Urology, Austin Health, Australia

Publisher

Blackwell Publishing

Year of Publication

2020

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200.

The Dretler stone cone: A device to prevent ureteral stone migration - The initial clinical experience.

Desai M.R., Patel S.B., Desai M.M., Kukreja R., Sabnis R.B., Desai R.M., Patel S.H.

Embase

Journal of Urology. 167(5) (pp 1985-1988), 2002. Date of Publication: 2002.

[Article]

AN: 34309643

Purpose: Retrograde stone migration during ureteroscopic lithotripsy occurs in 5% to 40% of proximal and distal ureteral stone cases. This migration increases morbidity and the need for auxiliary procedures. The Dretler stone cone (Medsource, Norwell, Massachusetts) is a novel device to prevent proximal stone migration and facilitate fragment extraction during ureteroscopic lithotripsy. We assessed the safety and efficacy of the Dretler stone cone in the clinical setting and compared it prospectively with a conventional flat wire basket during ureteroscopy for ureteral calculi.

Material(s) and Method(s): To our knowledge we report the initial clinical use of the Dretler stone cone in 50 consecutive patients with ureteral calculi undergoing ureteroscopic extraction. Calculi were situated above the sacroiliac joint in 24 cases, over the sacroiliac joint in 15 and below the sacroiliac joint in 11. Pneumatic lithotripsy was done in 42 cases. In the remaining 8 cases ureteroscopic (3) or fluoroscopic (5) intact stone extraction was performed. The later 23 cases using the Dretler stone cone were prospectively compared with 20 of ureteroscopic intracorporeal lithotripsy using a standard flat wire basket.

Result(s): The Dretler stone cone was successfully placed in all 50 cases. In 41 patients it was placed via cystoscopy under fluoroscopic guidance, while 9 impacted stones required ureteroscopic placement. Six patients in whom the Dretler stone cone was used had residual fragments less than 3 mm. No patient required auxiliary procedures. In the prospective trial no patients in Dretler stone cone group had residual fragments greater than 3 mm. or required auxiliary procedures. However, in the flat wire basket group residual stones greater than 3 mm. were present in 6 cases (30%, $p < 0.001$), while auxiliary procedures were required in 4 (20%, $p < 0.01$).

Conclusion(s): The Dretler stone cone represents a new generation of basketry that minimizes proximal ureteral stone migration and allows safe extraction of fragments during ureteroscopic lithotripsy. In our experience it is associated with a lower incidence of significant residual fragments and fewer auxiliary procedures than conventional flat wire baskets.

PMC Identifier

11956424 [<https://www.ncbi.nlm.nih.gov/pubmed/?term=11956424>]

Status

Embase

Institution

(Desai, Patel, Desai, Kukreja, Sabnis, Desai, Patel) Department of Urology, Muljibhai Patel Urological Hospital, Nadiad, India (Desai) Department of Urology, Muljibhai Patel Urological Hospital, Dr. V. V. Desai Rd., Nadiad 387001, Gujarat, India

Publisher

Lippincott Williams and Wilkins

Year of Publication

2002

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201.

Treatment of reno-ureteral stones in people with disabilities: 10 years of experience by the center for Disabled Advanced Medical Assistance (DAMA).

Morelli M., Macchione N., Piacentini I., Itri E., Bernardini P., Sampogna G., Del Nero A., Montanari E.

Embase

European Urology Open Science. Conference: The Italian Society of Urology 93rd National Congress 2020. Rome Italy. 20(Supplement 2) (pp S73-S74), 2020. Date of Publication: October 2020.

[Conference Abstract]

AN: 2007730866

Introduction: Disabled patients may be affected by an increased risk of urinary stones due to immobilization, recurrent urinary tract infections (UTIs), enteral nutrition via percutaneous endoscopic gastrostomy (PEG) etc. Because of frailty, these patients need a minimally invasive treatment, associated with high stone-free rate (SFR). Our study presents our experience with the treatment of urinary stones by our tertiary referral center for Disabled Advanced Medical Assistance (DAMA).

Material(s) and Method(s): We performed a retrospective analysis of our DAMA patients, who underwent surgery for reno-ureteral stones from January 2009 to October 2019 by a single high-volume center. Pre-op stone burden was estimated by computed tomography (CT). We used a 6/7.5 Fr semirigid ureteroscope, or a 9.5-Fr digital flexible ureteroscope with a 12/14-Fr ureteral sheath. Percutaneous nephrolithotomy (PCNL) was performed with a 20-Fr nephrostomy sheath and a 16-Fr nephroscope. Lithotripsy was performed with Holmium laser. Lapaxy was performed

with a 2.4 Fr tipless nitinol basket. SFR was defined as the absence of >4 mm residual fragments with the CT performed a month after surgery. Post-operative complications were reported according to the Clavien-Dindo (CD) classification system. We collected and analyzed pre-, intra- and post-operative data.

Result(s): We considered 27 procedures in 19 patients (Table 1). The median age at surgery and BMI were, respectively, 50 years and 20 Kg/m². Considering stone location and dimensions, we performed: 10 (37%) semirigid ureteroscopy, 9 (33.3%) retrograde intra-renal surgery (RIRS), 8 (29.6%) PCNL. We registered post-operative complications in 19/27 cases: CD grade I-II 59.2%, CD grade III-IV 7.4% and CD grade V 3.7%. The latter involved a patient died for septic shock after RIRS. Postop urine and/or blood cultures were positive in 17/27 cases. The SFR after the 1st and 2nd procedure was, respectively, 68.4% and 87.5%.

Conclusion(s): Our DAMA series proved a high rate of post-op complications in disabled patients, specially infective ones, registering, even, death after one RIRS. Because of the increased risk of urinary stones and the frailty of these patients, urologists should monitor disabled patients limiting the predisposing factors for urolithiasis, specially by controlling UTIs, and performing an abdominal ultrasound periodically in order to diagnose stones precociously and treat them with a minimally invasive approach.

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Status

CONFERENCE ABSTRACT

Institution

(Morelli, Macchione, Piacentini, Itri, Bernardini, Sampogna, Del Nero, Montanari) Milano

Publisher

Elsevier B.V.

Year of Publication

2020

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Flexible ureteroscopy for lower pole renal stones: novel superpulse thulium (TM) fiber laser lithotripsy.

Rapoport L.M., Gazimiev M.A., Korolev D.O., Tsarichenko D.G., Svetikova Y.U.A., Enikeev M.E., Akopyan G.N., Chinenov D.V., Taratkin M.S., Enikeev D.V.

Embase

Urologiia (Moscow, Russia : 1999). (6) (pp 89-92), 2020. Date of Publication: 01 Dec 2020.

[Article]

AN: 633989822

INTRODUCTION: The SuperPulse Thulium (Tm) fiber laser (wavelength of 1.94 m) has been recently introduced as a directed-energy source for urology. Preclinical studies have shown a significant potential of the SuperPulse Tm fiber laser (SP TFL) for lithotripsy. However, clinical reports of using SP TFL to treat urolithiasis are still few and limited. Of special interest are challenging cases, e.g., lower pole stones, when extreme deflection of the instrument is required.

OBJECTIVE(S): To evaluate the effectiveness of the SuperPulse Tm fiber laser in the management of lower pole small calyceal stones during flexible ureteroscopy (F-URS).

METHOD(S): s. The SuperPulse Tm fiber laser device (Urolase 2, IRE Polus, Fryazino, Russia) has been cleared for clinical use by the Ministry of Health of Russian Federation. Study protocol has been approved by the Ethical Review Committee. Between January 2018 and February 2019, 130 patients with kidney stones have undergone Thulium fiber laser lithotripsy during F-URS. We retrospectively analyzed 15 of this patients with a single radiopaque lower pole calculus that were included in the present study. Stone size, stone density, lithotripsy time (from the first to last footswitch press) and "lasering" (laser emission) time were measured. The SP TFL was used for stone disintegration with different settings in dusting and fragmentation modes (0.1 - 4J, 7-300Hz, 6-40W) via a fiber with a 200-µm core diameter. Low dose CT scanning was performed on POD 90 to assess SFR.

RESULT(S): Stone size ranged from 4 to 17 mm and stone density varied from 350 to 1459 HU. The average lithotripsy time was 12 min (3-30 min). The average "lasering" time was 1.3 min (0.4-2.5 min) and the mean hospital stay was 1.1+/-0.3 days. In all cases we reached the lower pole stone containing calyx with a laser fiber. The complication rates were evaluated by using the Clavien-Dindo grading system and did not exceed GII (6.6%). SFR on POD 90 was achieved in 86.6% of cases.

CONCLUSION(S): F-URS with SuperPulse Tm fiber laser is safe and effective option in the management of lower pole small calyceal stones. The possibility of using small laser fibers gives better instrument deflection which make possible to reach lower pole calyceal stones even with acute lower pole infundibulopelvic angle (IPA).

PMC Identifier

33427418 [<https://www.ncbi.nlm.nih.gov/pubmed/?term=33427418>]

Institution

(Rapoport, Gazimiev, Korolev, Tsarichenko, Svetikova, Enikeev, Akopyan, Chinenov, Taratkin, Enikeev) Institute for Urology and Reproductive Health, Sechenov University, Moscow, Russian Federation

Publisher

NLM (Medline)

Year of Publication

2020

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[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

203.

Asymptomatic obstructive ureterolithiasis due to a periureteral venous ring.

Rabley A., Singh D., Rawlings T., Bird V., Yeung L.

Embase

Journal of Endourology Case Reports. 6(4) (pp 505-508), 2020. Date of Publication: 2020.

[Article]

AN: 633812266

Background: Periureteral venous rings are a rare congenital anomaly involving the inferior vena cava (IVC) and the right ureter, where the ureter courses through a venous ring made by the duplication of the IVC during embryogenesis. This anatomic anomaly is also referred to as a transcaval ureter. Although most patients are asymptomatic and radiographic findings are incidental, some patients can be symptomatic. We present the first reported case of asymptomatic obstructive ureterolithiasis at the level of a periureteral venous ring that was effectively treated with endoscopic management. Case Presentation: A 47-year-old woman was found to have right hydroureteronephrosis on MRI. Further CT imaging showed an obstructing

ureteral stone at the level of a periureteral venous ring. After initial decompression with ureteral stenting, she underwent ureteroscopy that revealed the ureteral stone at the level of the venous anomaly. The stone was fragmented and removed with laser lithotripsy and stone basket manipulation. After a period of ureteral stenting and removal, she had improved hydroureteronephrosis, no symptoms of ureteral obstruction, and stable renal function. Given these findings, she elected for surveillance with imaging in lieu of any reconstructive procedure to transpose the ureter around the venous anomaly.

Conclusion(s): We present the first reported case of obstructive ureterolithiasis at the level of a periureteral venous ring. Our experience suggests that, with preoperative ureteral stenting, obstructing ureteral stones in the setting of an IVC anomaly can be managed with retrograde flexible ureteroscopy. Conservative laser settings and minimal torqueing of the ureteroscope are advised given adjacent vascular anomaly. Cases wherein the affected ureteral segment is too constricted or tortuous to allow for stone passage or for ureteroscopy may require management by percutaneous antegrade intervention. Surgical reconstruction of the ureter should also be considered.

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Status

Embase

Institution

(Rabley, Rawlings, Bird, Yeung) Department of Urology, University of Florida College of Medicine, 1600 SW Archer Road, N202B, Gainesville, FL 32610, United States (Singh)
University of Florida College of Medicine, Gainesville, FL, United States

Publisher

Mary Ann Liebert Inc.

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2020

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[SFX](#)

The effect of repeated full immersion simulation training in ureterorenoscopy on mental workload of novice operators.

Abe T., Dar F., Amnattrakul P., Aydin A., Raison N., Shinohara N., Khan M.S., Ahmed K., Dasgupta P.

Embase

BMC medical education. 19(1) (pp 318), 2019. Date of Publication: 22 Aug 2019.

[Article]

AN: 629160720

BACKGROUND: Difficult surgical procedures may result in a higher mental workload, leading to increased fatigue and subsequent errors. This study was aimed to investigate the effect of repeated simulation training in ureterorenoscopy in a high-fidelity setting on the performance and mental workload of novice operators.

METHOD(S): Medical students voluntarily participated in the present simulation study. After a didactic and video-based lecture, they underwent simulation training involving a renal stone case, including a rigid cystoscope component (task 1, performing a WHO checklist, assembling a scope, and insertion of a guide-wire and an access sheath after examining the bladder) and a flexible ureterorenoscope component (task 2, retrieving a stone located in the upper calyx using a basket after inspecting the upper, middle, and lower calyx). Training was performed in a mock operating theater. Technical skills were assessed by one author (an experienced urologist) onsite using an Objective Structured Assessment of Technical Skills (OSATS) score at each training session. The mental workload was subjectively evaluated by the National Aeronautics and Space Administration Task Load Index (NASA-TLX) questionnaire after each training session.

RESULT(S): Seventeen students completed a minimum of 6 training sessions (male: female=10:7, median age of 22) over a median of 21 days (range, 10-32). In both tasks 1 and 2, the OSATS score improved over the 6 sessions with evidence of plateauing (MANOVA model, task 1: $p < 0.0001$, task 2: $p < 0.0001$). In contrast, the NASA-TLX score persistently decreased without plateauing (task 1: $p = 0.0005$, task 2: $p = 0.0028$).

CONCLUSION(S): Under repeated simulation training in ureterorenoscopy in a high-fidelity setting, participants showed a continual decrease of the mental workload, while the improvement of technical skills reached a plateau over the 6 sessions. Our study showed the important benefit of simulation training to reduce the mental workload by repeated scenario training before actual clinical practice.

PMC Identifier

31438934 [<https://www.ncbi.nlm.nih.gov/pubmed/?term=31438934>]

Institution

(Abe) MRC Centre for Transplantation, King's College London, Guy's Hospital SE1 1UL, United Kingdom (Abe) Department of Urology, Hokkaido University Graduate School of Medicine, North-15, West-7, North Ward, Sapporo, 060-8638, Japan. takakaka@rf6.so-net.ne.jp
(Dar, Amnattrakul, Aydin, Raison, Khan, Ahmed, Dasgupta) MRC Centre for Transplantation, King's College London, Guy's Hospital SE1 1UL, United Kingdom
(Shinohara) Department of Urology, Hokkaido University Graduate School of Medicine, North-15, West-7, North Ward, Sapporo, 060-8638, Japan
Publisher
NLM (Medline)
Year of Publication
2019

Link to the Ovid Full Text or citation:

[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

205.

Prevention of stone retropulsion during ureteroscopy: Limitations in resources invites revival of old techniques.

Fathelbab T.K., Abdelhamid A.M., Anwar A.Z.M., Galal E.M., El-Hawy M.M., Abdelgawad A.H., Tawfiek E.R.

Embase

Arab Journal of Urology. 18(4) (pp 252-256), 2020. Date of Publication: December 2020.

[Article]

AN: 2005858118

Objective: To compare a modified technique using the Dormia basket vs Stone Cone for stone entrapment to avoid proximal stone migration during ureteroscopic pneumatic lithotripsy of ureteric stones.

Patients and Methods: Our study included all patients with ureteric stones of <15 mm who underwent ureteroscopic pneumatic lithotripsy from January 2015 to September 2018. The study

had two arms that were conducted over two consecutive periods; the first included 72 patients in whom we used the Stone Cone (Group 1) and the second included 86 patients in whom we started to use a Dormia basket with a modification (Group 2) to guard against proximal stone migration.

Result(s): Both groups were comparable for gender, age, and stone characteristics. Lower ureteric stones were the most prevalent as they represented 62.5% and 60.5% in groups 1 and 2, respectively; while upper ureteric stones were respectively found in 16.7% and 17.4%. Chemical stone analysis revealed that calcium oxalate stones were most predominant accounting for 51.3% and 51.1% in groups 1 and 2, respectively. Most of the stones were radio-opaque stones representing 57% and 58.1% in groups 1 and 2, respectively. There was a significant difference in operative time, with a mean (SD) operative time was 50.9 (11.2) in Group 1 vs 58.3 (12.4) min in Group 2 ($P < 0.001$). The success rate, defined as no retropulsion of stone fragments, was 97.7% in Group 2 vs 91.7% in Group 1 ($P < 0.01$). Complications were minor and comparable between the groups. There was no difference in hospital stay between the groups, but the cost assessment favoured Group 2.

Conclusion(s): We found that our modified-basket stone entrapment technique compared favourably with the Stone Cone to guard against stone retropulsion during ureteroscopic pneumatic lithotripsy. Our modification to the basket was found to be feasible, efficient, safe, reproducible and cost-effective in preventing proximal stone migration. This procedure is particularly suitable in cost-limited environments.

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Status

Embase

Institution

(Fathelbab, Abdelhamid, Anwar, Galal, El-Hawy, Abdelgawad, Tawfiek) School of Medicine, Minia University, Minia, Egypt

Publisher

Taylor and Francis Ltd.

Year of Publication

2020

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[Click here for full text options](#)

Link to the External Link Resolver:

206.

Frequency threshold for ablation during holmium laser lithotripsy: How high can you go?.

Aldoukhi A.H., Black K.M., Hall T.L., Roberts W.W., Ghani K.R.

Embase

Journal of Endourology. 34(10) (pp 1075-1081), 2020. Date of Publication: 01 Oct 2020.

[Article]

AN: 633232792

Purpose: We performed in vitro studies to assess the relationship of pulse frequency on stone ablation during contact laser lithotripsy and determine if there is a threshold after which its effect on lithotripsy is limited.

Method(s): BegoStones were fragmented using a Ho:YAG laser (P120 Moses) and a 230 lm fiber at 0.5 J on long pulse (LP) and Moses distance (MD) modes in contact with the stone. The relationship between the number of pulses (1-40 Hz) on stone crater volume was assessed using three-dimensional confocal microscopy and nonlinear-segmented regression. To simulate a painting technique, we assessed fragmentation (mg/second) at 20, 40, and 60 Hz, with the fiber moving at a speed of 1 and 3 mm/second, respectively. High-speed imaging was used to record ablation.

Result(s): When the laser fiber was fixed, after 13.0 (LP) and 15.4 (MD) pulses, greater pulse frequency did not lead to a significant increase in stone crater volume. Fragmentation was greatest at higher frequencies and faster fiber speed. Increasing the frequency from 20 to 60 Hz at 3 mm/second increased fragmentation by 82% and 61% for LP and MD modes, respectively. Using high-speed data, if the laser fiber is moving at 1 mm/second, a hypothetical frequency threshold for ablation was calculated to be 52 and 61.6 Hz for LP and MD modes, respectively.

Conclusion(s): Increasing the fiber speed increases stone ablation when using high frequency settings. When the fiber is fixed there is a threshold after which increasing the pulse frequency leads to minimal gain in ablation. The exact value for threshold when the fiber is moving needs further study. Our study serves to provide insight for parameter selection and safety of laser lithotripsy for dusting technique.

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PMC Identifier

32483996 [<https://www.ncbi.nlm.nih.gov/pubmed/?term=32483996>]

Status

Embase

Institution

(Aldoukhi, Black, Roberts, Ghani) Departments of Urology, University of Michigan, Ann Arbor, MI, United States (Hall, Roberts) Departments of Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States

Publisher

Mary Ann Liebert Inc.

Year of Publication

2020

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[SFX](#)

207.

Initial experience of domestic disposable digital flexible ureteroscope in the treatment of upper urinary tract stones. - <-.>

Xiao B., Jin S., Ji C., Hu W., Su B., Li J.

Embase

Chinese Journal of Urology. 41(8) (pp 609-612), 2020. Date of Publication: 15 Aug 2020.

[Article]

AN: 2007960566

Objective: To introduce the preliminary experience of domestic disposable digital flexible ureteroscope (ZebraScope™) in the treatment of upper urinary calculi.

Method(s): The clinical data of 16 patients with upper urinary calculi treated by ZebraScope™ in our hospital from February to March 2020 were retrospectively analyzed. The scope is composed of a handle and shaft, the image can be transferred through the transmission line at the end of the handle. There were 10 males and 6 females. The mean age was 42.1 years (26-63 years). 12 cases of upper ureteral calculi and 4 cases of renal calculi included. Mean diameter was 1.3cm

(0.8-2.1cm). Ureteral stents were preoperatively placed in 4 patients and no pre-stent were in 12 patients. Two patients had a history of endoscopic lithotripsy. The ureteral sheath was used in 4 patients with F12/14, 10 patients with F11/13, and 2 patients with F10/12. Eight patients were treated with a stone basket. Intra-operative lithotripsy was performed using 200um optical fiber combined with holmium laser, and 6Fr ureteral stent was routinely indwelling for 2-4 weeks. The operation time, postoperative complications, hospital-in time, stone clearance rate and other related parameters were summarized and analyzed.

Result(s): Of the 16 patients, 14 succeed and 2 patients failed and secondary operation was applied due to poor ureteral condition. The mean operative time was 55.6 minutes (32-115 minutes). The average laser emission time was 25.2 minutes (10-65 minutes). There was no image degradation and scope damage during the operation. All the patients recovered well after the operation, and no postoperative complications such as fever and pain occurred. Two patients received external physical vibration lithotripsy therapy. The average hospital-in time was 1.2 days (1-3 days). One month after the operation, the calculi clearance rate was 87.5% (14/16).

Conclusion(s): Our preliminary study found that ZebraScope™ could be safe and effective in the treatment of upper urinary calculi less than 2 cm. Further verification is required in larger renal stones.

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Status

Embase

Institution

(Xiao, Jin, Ji, Hu, Su, Li) Department of Urology, Tsinghua University Affiliated Beijing Tsinghua Changgung Hospital, Beijing 102218, China

Publisher

Chinese Medical Association

Year of Publication

2020

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[Click here for full text options](#)

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[SFX](#)

208.

A single center prospective randomized controlled trial of two single use flexible ureteroscopes- lithovue (Boston Scientific,USA) and Pusen PU3022A (Zhuhai Pusen, China).

Patil A., Agrawal S., Singh A., Ganpule A., Sabnis R., Desai M.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e1047), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632059042

INTRODUCTION AND OBJECTIVE: Single-use flexible ureteroscopes scopes have benefit of decreasing infection transmission, avoiding sterilization need and no maintenance cost. Primary objective was to compare in-vivo performance and surgical outcomes with two single-use ureteroscopes: LithoVue and Pusen with secondary objective being to compare in-vitro performance.

METHOD(S): 50 patients with <2cm renal stones, planned for RIRS were prospectively randomized :Group 1 (25 patients) for LithoVue and group 2 (25 patients) for Pusen. Pre-, intra- and postoperative parameters were evaluated. In-vitro parameters included maximal tip deflection and irrigation flow rate with empty working channel, 200mm laser fiber and 1.9Fr basket. Vision of both scopes without any accessory, with basket and with laser fiber was evaluated by an endourologist (not part of surgical team), blinding to type of scope. We checked stone clearance by Xray KUB at POD1 and CT KUB at POD 30. We used Students' t-test for quantitative and chisquare for qualitative statistical analysis **RESULTS:** Preoperative parameters were comparable in both groups. Intra-operative parameters-need for ureteral dilatation, ureteralaccess- sheath size, accessibility and maneuverability were comparable in both groups. Lower-pole access was possible in all cases of Lithovue, slightly difficult in 3 cases of Pusen (statistically insignificant). Intraoperative vision was hazy in 4 cases of Lithovue during lasing and in 3 cases of Pusen with accessory and eight cases during lasing (statistically insignificant). Blinded endourologist reported more cases with hazy vision in Pusen arm (statistically insignificant). In vitro maximal tip deflection and irrigation flow rate with or without accessory were comparable in both scopes. One device malfunction in Lithovue arm. Complete stone clearance achieved in all cases.

CONCLUSION(S): Both LithoVue and Pusen ureteroscopes have similar in-vivo and in-vitro performance. Larger clinical trials are needed to confirm efficacy of these two single use scopes. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Patil, Agrawal, Singh, Ganpule, Sabnis, Desai) NadiadIndia

Publisher

Lippincott Williams and Wilkins

Year of Publication

2020

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[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

209.

Trapped Flexible Ureteroscope in Ureteral Access Sheath during Retrograde Intrarenal Surgery:
An Unexpected Problem.

Thakur A., Devana S.K., Sharma A.P., Mavuduru R.S., Bora G.S., Parmar K.

Embase

Journal of Endourology Case Reports. 6(3) (pp 235-237), 2020. Date of Publication: September 2020.

[Article]

AN: 633026787

Background: Instrument-related complications occur occasionally with the use of flexible ureteroscopes. In this study, we present a unique problem related to instrument malfunction of flexible ureteroscope during retrograde intrarenal surgery. Case Presentation: A 60-year-old male patient with a 1.2 cm left upper ureteral stone initially underwent semirigid ureteroscopic laser lithotripsy and during the procedure the stone got retropulsed into middle calix of the kidney. Subsequently, a 9.5F (internal diameter) ureteral access sheath was placed and using URF P6R flexible ureteroscope (Olympus) the stone was completely dusted with holmium laser. At the end of the procedure, the operating surgeon was unable to remove the ureteroscope out of the

ureteral access sheath as it was getting stuck inside. On careful inspection under fluoroscopy, it was noticed that there was a partial break in the outer surface of the flexible ureteroscope at the level of the junction of the distal flexible part of the ureteroscope with the shaft. Since multiple attempts to retrieve the ureteroscope into the access sheath failed, a decision was made to pull the ureteroscope and ureteral access sheath as a whole over a 0.035 terumo guidewire. Gentle traction was applied on the entire assembly and the instrument was withdrawn out of ureter over the guidewire under fluoroscopic guidance. A lateral angulation of the distal flexible portion with the shaft of the flexible ureteroscope caused by breakage of the fiber-optic cables led to this problem intraoperatively.

Conclusion(s): Breakage of fiber-optic cables caused by excessive manipulation of flexible ureteroscope during retrograde intrarenal surgery can lead to entrapment of the ureteroscope within the ureteral access sheath. This problem might be solved by gently withdrawing the whole assembly out of the ureter over a guidewire.

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Institution

(Thakur, Devana, Sharma, Mavuduru, Bora, Parmar) Department of Urology, Post Graduate Institute of Medical Education and Research, Chandigarh, India

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One-surgeon basketing technique for stone extraction during flexible ureteroscopy for urolithiasis:
A comparison between novice and expert surgeons.

Anan G., Komatsu K., Hatakeyama S., Iwamura H., Kohada Y., Mikami J., Ito J., Kaiho Y.,
Shimbo M., Endo F., Yoneyama T., Hashimoto Y., Ohyama C., Hattori K., Sato M.

Embase

International Journal of Urology. 27(12) (pp 1072-1077), 2020. Date of Publication: December
2020.

[Article]

AN: 2005910755

Objective: To determine the safety and efficacy of the one-surgeon basketing technique for stone
extraction during flexible ureteroscopy when carried out by novice surgeons under instructor
guidance.

Method(s): We retrospectively compared perioperative results, complications and the "stone-free"
rate (defined as ≤ 2 mm fragments on kidney-ureter-bladder imaging 1 month after flexible
ureteroscopy) between experienced (group A, n = 50) and novice (group B, n = 50) surgeons
using the one-surgeon basketing technique.

Result(s): Baseline patients' characteristics were similar between the two groups. There were no
significant differences between groups A and B in operative time (mean 76 min vs 85 min, P =
0.46), stone-free rate (98% vs 92%, P = 0.36), postoperative fever events (4% vs 4%, P = 1.00)
and postoperative hospital stay (24 h vs 24 h, P = 1.00). Clavien-Dindo grade IIIa complications
(ureter injury) were only observed in two cases (4%) in group B.

Conclusion(s): The one-surgeon basketing technique for the extraction of stone fragments during
flexible ureteroscopy might be safely and effectively carried out by surgeons with no prior
experience under proper guidance.

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Institution

(Anan, Kohada, Mikami, Ito, Kaiho, Sato) Department of Urology, Tohoku Medical and
Pharmaceutical University, Sendai, Japan (Anan, Komatsu, Shimbo, Endo, Hattori) Department
of Urology, St. Luke's International Hospital, Tokyo, Japan

(Anan, Hatakeyama, Iwamura, Yoneyama, Hashimoto, Ohyama) Department of Urology, Hirosaki
University Graduate School of Medicine, Hirosaki, Japan

Publisher

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211.

Successful treatment of seminal vesicle calculi and prostatic utricle calculi by transurethral seminal vesiculoscopy.

Song L., Han H., Lei H., Cui Y., Feng S., Zhang X., Tian L.

Embase

Andrologia. 52(11) (no pagination), 2020. Article Number: e13804. Date of Publication: December 2020.

[Article]

AN: 2005973919

To investigate the outcomes of transurethral seminal vesiculoscopy (TSV) for the treatment of seminal vesicle calculi (SVC), prostatic utricle calculi (PUC) and combination of them, a retrospective review on 27 patients with SVC and/or PUC who complained of intractable haemospermia was conducted. Patient demographics, disease duration, operation time, stone location and complications were recorded. The calculi in the seminal vesicle and/or prostatic utricle were removed by holmium laser lithotripsy and/or basket extraction. The stone composition was determined in 19 of 27 patients using Infrared spectroscopy. The average age and disease duration of patients were 39.4 years and 23.1 months respectively. The mean operative time was 78.5 min. We detected SVC, SVC and PUC, and PUC in 59.3% (16/27), 33.3% (9/27) and 7.4% (2/27) patients respectively. The stones were mainly composed of calcium oxalate dehydrate (COD), carbonate apatite (CA), COD and calcium oxalate monohydrate (COM), CA and magnesium ammonium phosphate, CA and COM, and COD and uric acid in 42.1% (8/19), 21.1% (4/19), 15.8% (3/19), 15.8% (3/19), 5.3% (1/19) and 5.3% (1/19) cases respectively. No

intraoperative and post-operative complications were noted. These results suggested that SVC and PUC can be diagnosed and treated using TSVs.

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Embase

Author NameID

Han, Hu; ORCID: <http://orcid.org/0000-0002-3326-8615>

Institution

(Song, Han, Lei, Cui, Feng, Zhang, Tian) Department of Urology, Institute of Urology, Beijing Chao-Yang Hospital, Capital Medical University, Beijing, China

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Year of Publication

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212.

Integrated Real-Time Digital Measurement during Ureteroscopic Procedures for Nephrolithiasis: A Workflow Feasibility Study.

Koo K., Aro T., Becker R.E.N., Lim S., Winoker J.S., Petrisor D., Stoianovici D., Matlaga B.R.

Embase

Journal of Endourology. 34(9) (pp 900-904), 2020. Date of Publication: 01 Sep 2020.

[Article]

AN: 633057517

Introduction: Accurate estimation of stone fragment size during ureteroscopic lithotripsy procedures facilitates operative efficiency and predicts the safety of fragment extraction or spontaneous passage. Using a novel stone measurement software application, this study assesses the feasibility of performing integrated real-time digital stone measurement during ureteroscopy.

Method(s): This workflow feasibility study was conducted in two phases. First, in the ex vivo simulation, mock stone fragments were placed in a renal collecting system training model. A basket extraction task was performed using a digital ureteroscope, with and without digital stone measurement. The time required to perform the tasks was recorded and compared. Second, in the in vivo workflow trial, adult patients undergoing ureteroscopic stone procedures were prospectively enrolled. Intraoperative measurements of stone fragments were performed to determine the time required to complete the measurements. Technical failures and perioperative complications were recorded.

Result(s): In the ex vivo simulation, 20 mock stones mimicking varied fragmentation conditions were tested in the training model. The mean completion time of the basketing task without vs with digital stone measurement was 16.5 seconds (range 10.2-33.7) vs 38.9 seconds (range 27.2-60.0). Mean additional time required to measure stones was 22.3 seconds (range 8.4-42.7). In the in vivo workflow trial, nine patients undergoing ureteroscopy were enrolled. A median of five fragments (range 3-10) were measured in each patient. Mean completion time for each measurement was 10.1 seconds (range 8.2-12.8). Mean total time required to perform digital measurement per procedure was 50.8 seconds (range 25.9-99.0). No technical failures or clinical complications were observed.

Conclusion(s): Integrating real-time digital stone measurement during ureteroscopy is safe and feasible. The findings support clinical trials of digital stone measurement to enhance intraoperative decision-making during ureteroscopy.

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Embase

Institution

(Koo, Aro, Becker, Lim, Winoker, Petrisor, Stoianovici, Matlaga) Department of Urology, Johns Hopkins University School of Medicine, Baltimore, MD, United States (Aro, Lim, Petrisor, Stoianovici) Robotics Laboratory, Johns Hopkins University School of Medicine, Baltimore, MD, United States

Publisher

Mary Ann Liebert Inc.

Year of Publication
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213.

Superpulsed Thulium Fiber Laser for Stone Dusting: In Search of a Perfect Ablation Regimen-A Prospective Single-Center Study.

Enikeev D., Taratkin M., Klimov R., Inoyatov J., Azilgareeva C., Ali S., Korolev D., Corrales M., Traxer O., Glybochko P.

Embase

Journal of Endourology. 34(11) (pp 1175-1179), 2020. Date of Publication: 01 Nov 2020.

[Review]

AN: 633473237

Objective: To compare the efficacy of the standard and higher frequency regimens for superpulsed thulium fiber laser (SP TFL) retrograde intrarenal surgery (RIRS).

Material(s) and Method(s): A prospective study of patients with renal calculi of 10-30 mm was performed. For RIRS, we used the SP TFL (NTO IRE-Polus, Russia) and a 9.5F flexible ureteroscope with 270degree deflection and 3.6F working channel. Retropulsion and visibility were assessed based on the surgeon's feedback using three-point Likert scales. The stone-free rate was assessed at 3 months with CT.

Result(s): A total of 40 patients were included in the study with a mean age of 56 years, mean stone density of 880 +/- 381 HU, mean stone size of 16.5 +/- 6.8 mm, and median stone volume of 883 (interquartile range 606-1664) mm³. Both ablation efficacy and speed were higher in the 200-Hz mode (2.7 J/mm³ vs 3.8 J/mm³ and 5.5 mm³/second vs 8.0 mm³/second, respectively); moreover, the higher frequency correlated with increased ablation speed ($r = -0.21$, $p = 0.019$). However, both increased energy and frequency did not lead to increase of laser-on time or intraoperative complication rates.

Conclusion(s): SP TFL is able to effectively disintegrate stones during RIRS with minimal complication rates. The use of higher frequency regimens showed higher efficacy and ablation speed and was not associated with increased complication rates.

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Embase

Institution

(Enikeev, Taratkin, Klimov, Inoyatov, Ali, Korolev, Glybochko) Institute of Urology and Reproductive Health, Sechenov University, Moscow, Russian Federation (Azilgareeva) Sechenov University, Moscow, Russian Federation

(Corrales, Traxer) Grc #20 Lithias Urinaire, Sorbonne University, Hopital Tenon, Paris, France

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214.

Clinical efficacy and safety analysis of retrograde intrarenal stone surgery for treatment of upper urinary calculi.

Zhu C., Cheng F., Rao T., Yu W., Zhang X., Ruan Y., Yuan R., Xia Y., Wu C.

Embase

Chinese Journal of Urology. 41(1) (pp 41-45), 2020. Date of Publication: 15 Jan 2020.

[Article]

AN: 2006016189

Objective: To evaluate efficacy and safety of retrograde intrarenal stone surgery for treatment of upper urinary calculi.

Method(s): The clinical data of 640 patients with upper urinary tract calculi treated by retrograde intrarenal stone surgery (RIRS) in Renmin Hospital of Wuhan University from April 2016 to January 2019 were retrospectively analyzed. There were 424 males and 216 females. The average age was (46.2 ± 12.8) years old, ranging 18 to 76 years old. The maximum diameter of the stone is (1.4 ± 0.7) cm, ranging 0.6-3.2 cm. There were 126 cases with inferior calculi and 514 cases with non-lurgical calculi. There were 196 cases with unilateral ureteral calculi, 118 unilateral ureteral calculi cases with renal calculi, 236 cases with unilateral renal stones, and 90 cases with double kidney stones. 104 cases were placed with double J tube before operation and 496 cases were not placed before operation. There were 8 cases of horseshoe kidney, 30 cases of isolated kidney with renal insufficiency, 4 cases of pelvic ectopic kidney with dysplasia, 6 cases of congenital ureteral malformation and 2 cases of sponge kidney. Preoperative average hemoglobin was (133.2 ± 5.6) g/L, ranging 126-188 g/L. And average serum creatinine was (84.4 ± 12.2) μ mol/L, ranging 74-242 μ mol/L before operation. All patients were treated with general anesthesia under the lithotomy position. The ureteroscopy combined with holmium laser lithotripsy was performed. The 200 μ m fiber was used, which the parameters were set as 12-45 W (0.5-1.5 J/10-30 Hz). The stone baskets were used to take stones according to actual conditions. The operation was performed by doctors of the same qualifications.

Result(s): All patients underwent successful operation. The mean operation time was (45.6 ± 14.6) min. The average postoperative hospitalization was (4.8 ± 1.5) d. The postoperative serious complication rate was 0.9%, including (2 cases of sepsis and 1 case of subcapsular hematoma). Of the 640 patients, 596 were admitted to the hospital for a double J tube and 44 were lost of follow-up. 552 patients met the stone removal criteria, 44 patients did not meet the stone removal criteria for other treatments, such as extracorporeal shock wave lithotripsy, ureteroscopy or observed regularly. The stone-free rate (SFR) was 92.6% (552/596) after 1-3 months. On the first postoperative day, serum creatinine was (76.0 ± 10.6) (58-156) μ mol/L, and postoperative hemoglobin was (126.4 ± 9.6) (120-176) g/L. There was no significant difference in preoperative and postoperative hemoglobin ($t=2.02$, $P=0.064$). Preoperative and postoperative creatinine ($t=64.76$, $P<0.05$) was statistically significant. Meanwhile, the stone size ($\chi^2=29.569$, $P<0.05$) and position ($\chi^2=44.949$, $P<0.05$) versus SFR the impact was statistically significant. Multivariate regression analysis showed that stone size was not an independent risk factor for stone clearance ($P=0.639$). The stone position was an independent risk factor for stone clearance ($P=0.013$).

Conclusion(s): RIRS is a reliable treatment for small and medium calculi patients of the upper urinary tract. The curative effect of stone removal is clear, the complications are few, the safety is

high. However, there are certain limitations to the efficacy in the treatment of large stones and lower calculi. Lower calculi is the independent risk factor for the treatment of efficacy.

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Embase

Institution

(Zhu, Cheng, Rao, Yu, Zhang, Ruan, Yuan, Xia, Wu) Department of Urology, Renmin Hospital of Wuhan University, Wuhan 430060, China

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Chinese Medical Association (E-mail: bxblbl@163.com)

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215.

The importance of stone retrieval in the modern management of urolithiasis.

Khela A., Ravindranaadan M., Jones A., Asghar A., Mahmalji W.

Embase

Journal of Endoluminal Endourology. 3(1) (pp e39-e46), 2020. Date of Publication: 2020.

[Article]

AN: 2004620340

Background and Objectives World urolithiasis is increasing with a 70% increase in hospital admissions between 2000 and 2015. Stone analysis can allow for the identification of metabolic conditions and stone retrieval may decrease the need for follow-up imaging, reducing costs and patient radiation. This study aimed to see if introducing the UroPro® Stone catcher into our practise would increase stone retrieval thus increasing stone analysis rates and reducing the need for follow-up imaging. Methods Between November 2018 and July 2019 patients receiving

ESWL or being conservatively managed for a ureteric stone were discharged with a Paramount Medical solutions UroPro® Stone Catcher. Both groups of patients were asked to complete a patient survey regarding the product. Results There were 27 patients recruited. 14 from SWL and 13 from acute admissions. 22 responses were received in total: 10 from acute admissions and 12 from ESWL. 5 patients were uncontactable. 30% (n=3) of the acute patients passed and caught a stone negating the need for further imaging. 30% (n=3) did not pass their stone and required either emergency or elective intervention. 1 patient passed his stone into the toilet whilst another had the stone in their bladder when they were taken to theatre. 20% (n=2) patients but did not catch their stone requiring follow-up imaging which revealed the stone had passed. In the ESWL group 16% (n=2) caught a fragment, the rest found they only passed dust. Stone analysis was performed in all 5 patients who returned a fragment. A total of 73% (n=16) of patients reported over 75% compliance with the stone catcher. 59% (n=13) reported that the stone catcher was easy to use whilst 27% (n=6) found it hard. When given a choice of sieving methods. Only 6 patients (27%) would opt to use the stone catcher with over half, 64% (n=14), preferring more traditional methods of sieving urine over the stone catcher. Conclusion The UroPro® stone catcher did increase the number of stones caught and sent for analysis. However, many patients preferred the older 'sieving' methods. Stone catchers retail at 5.50, therefore 'sieving' remains more cost-effective. Stone retrieval in any form remains advantageous as confirming stone passage saves the patient 0.5 to 2.8 mSv of radiation from follow-up imaging, the NHS circa 100 per unnecessary follow-up computed tomography (CT) scan and aids metabolic analysis. Over time both factors may be substantial. Therefore, emphasizing the benefits and importance to patients to sieve their urine regardless of the techniques is paramount in the modern management of urolithiasis.

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Institution

(Khela, Ravindranaadan, Jones, Asghar, Mahmalji) Hereford County Hospital, Hereford, United Kingdom

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216.

Broken basket conundrum.

Sockkalingam V.S.V., Palathullil D.G., Radhakrishnan V., Palathullil G.A.

Embase

African Journal of Urology. 26(1) (no pagination), 2020. Article Number: 31. Date of Publication: 01 Dec 2020.

[Article]

AN: 2006787348

Background: Broken basket during retrograde intrarenal surgery (RIRS) is a known complication. The literature regarding this common complication is limited. We report a case of broken basket and explain the technique by which we retrieved the broken basket fragment that was entrapped around the calculus. We also analyze at the prevention strategies and better management strategies. Case presentation: A 62-year-old male underwent RIRS for a 2-cm right renal lower calyceal calculus. A tipless nitinol stone basket got broken and distal part got entrapped around the calculus when basketing was attempted. We proceeded with stone fragmentation by RIRS. After complete stone fragmentation, another tipless nitinol stone basket was used to grab the broken tip of distal basket fragment which was lying in the renal pelvis. The broken basket fragment could be retrieved out in toto.

Conclusion(s): Basketing large lower calyceal calculus should be attempted with caution. Partial or complete fragmentation of large calculus is preferable before basketing attempt. If the calculus is entrapped rather than forceful pulling, cutting the basket proximally near to the handle, followed by stone fragmentation, could minimize complications. Locating the broken tip of the basket fragment and grasping it makes the retrieval easier and safer.

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Institution

(Sockkalingam, Palathullil, Radhakrishnan, Palathullil) VPS Lakeshore Hospital, Kochi, India

Publisher

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217.

The Effect of Holmium Laser Fiber Bending Radius on Power Delivery during Flexible Ureteroscopy.

Heckscher D., Zeng J., Samolis P., Sander M.Y., Wason S.E., Wang D.S.

Embase

Journal of Endourology. 34(6) (pp 682-686), 2020. Date of Publication: June 2020.

[Article]

AN: 632899224

Introduction: Flexible ureteroscopy is a mainstay of upper urinary tract stone treatment. Holmium laser lithotripsy is a particularly common and notable technique for the dusting and fragmenting of renal stones. During ureteroscopy, optical fibers are subject to sharp bends in pursuit of stones, particularly those at the lower pole. Following from principles of fiber optics, subjecting these fibers to sharp bending angle has the potential to reduce the efficiency of power transmission at the fiber tip. Due to the potential implications this hypothesis could have on endourological practice and research, we aimed to explore the potential impact of fiber bending on end-fiber power output.

Material(s) and Method(s): Using a highly sensitive oscilloscope and a urological holmium laser, we assessed the end-fiber power output under a variety of bending conditions. To ensure maximal confidence in our results, the maximal bending conditions explored substantially exceeded any condition, which could occur during ureteroscopic surgery.

Result(s): We found evidence that bending radius alone has a clinically insignificant impact on the light power transmission in the fiber. At certain bending conditions, we observed a clinically

unimportant but statistically significant reduction in power transmission. This was verified using two commonly used delivery fiber types exposed to 8-second bursts for each bending condition.

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Status

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Institution

(Heckscher) Department of Urology, Boston University School of Medicine, 725 Albany Street, Boston, MA 02118, United States (Zeng, Samolis, Sander) Department of Electrical and Computer Engineering, BU Photonics Center, Boston University, Boston, MA, United States (Sander) Division of Materials Science and Engineering, Boston University, Boston, MA, United States

(Wason, Wang) Department of Urology, Boston Medical Center, Boston University School of Medicine, Boston, MA, United States

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218.

Sheathless and fluoroscopy-free retrograde intrarenal surgery: An attractive way of renal stone management in high-volume stone centers.

Mahmood S.N., Toffeq H., Fakhralddin S.

Embase

Asian Journal of Urology. 7(3) (pp 309-317), 2020. Date of Publication: July 2020.

[Article]

AN: 2002958859

Objective: To evaluate the efficacy and safety of sheathless and fluoroscopy-free flexible ureterorenoscopic laser lithotripsy (FURSL) for treating renal stones.

Method(s): Between May 2015 and May 2017, 135 patients with renal stones treated with sheathless and fluoroscopy-free FURSL were prospectively evaluated. Our technique involved a semi-rigid ureteroscopic assessment of the ureter, and the guidewire was left in situ to railroad the flexible ureteroscope. A holmium laser was used to fragment and dust the stones; fragments were neither grasped nor collected.

Result(s): The study population consisted of 135 patients including 85 males (62.96%) and 50 females (37.04%) with a mean age of 40.65 years (range: 3-70 years) were evaluated. The mean stone size was 17.23 mm (range: 8-41 mm). Complete stone-free status was achieved in 122 (90.37%) patients and clinically insignificant residual fragments (CIRF) in two (1.48%), while residual stones were still present in 11 (8.15%) patients. Postoperative complications occurred in 23 (17.4%) cases and were mostly minor, including fever in 17 (12.6%), pyelonephritis in four (3.0%), subcapsular hematoma in one (0.7%) and steinstrasse in one (0.7%). These complications were Clavien I-II, GI in 17 (12.6%) patients, GII in five (3.7%), and Clavien IIIb in one (0.7%). No major complications were observed. Stone size ≥ 2 cm, operative time ≥ 30 min, and lasing time ≥ 20 min were significantly associated with a higher rate of complications and lower stone-free rates upon univariate analysis ($p < 0.05$).

Conclusion(s): Sheathless and fluoroscopy-free FURSL are effective and safe for renal stone management, especially for stones under 2 cm in diameter. This process is a feasible option for avoiding sheath complications, which can protect surgeons from the negative effects of radiation.

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Institution

(Mahmood) University of Sulaimani College of Medicine, Kurdistan, Iraq (Toffeq, Fakhralddin)

Sulaimania General Teaching Hospital, Sulaimania, Iraq

Publisher

Editorial Office of Asian Journal of Urology (E-mail: ajurology@smmu.edu.cn)

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219.

Preliminary outcome comparison of flexible uretero-renoscopic lasertripsy versus pcnl in the treatment of staghorn calculi.

Koo V., Ahmed M., Deshpande A., Kodera A.

Embase

Journal of Endoluminal Endourology. 3(2) (pp e31-e36), 2020. Date of Publication: 2020.

[Article]

AN: 2004784944

Percutaneous nephrolithotomy (PCNL) is a well-established treatment for staghorn stones. Given the improvement in technology and techniques of flexible ureterorenoscopic lasertripsy (FURS), we retrospectively compared its treatment outcome against PCNL for staghorn stones at our institution. Materials and Methods All patients with partial and complete staghorn stones treated by FURS or PCNL between December 2014 and December 2017 were included. Outcome measures included the duration of the procedure, length of stay, retreatment rate, auxiliary rate, complications, and clinical success rates (stone or dust-free status). Results Out of 22 staghorns, 10 (1 complete, 9 partial) had FURS and 12 (2 complete and 10 partial) had PCNL.

Comparatively, the FURS group were older (mean 70.1 vs. 57.1 years, U-test $p < 0.001$) with higher mean ASA scores (mean 2.3 vs. 1.5, U-test, $p = 0.04$), with a similar body-mass index (mean 29.1 vs. 27.3), maximum stone size (29.7 vs. 34.6mm) and Hounsfield unit (836 vs. 891HU). FURS was quicker to clinical success (102.4min vs. 159.5min, U-test $p < 0.001$) and had shorter hospital stay (1.1d vs. 3.5d, U-test $p < 0.001$). Higher primary procedure success [80% vs. 36%, 95% CI = (-3.0%, 74.5%)], higher overall success [90% vs. 73%, 95% CI = (-22%, 51%)], similar retreatment rate (10%), and higher auxiliary treatment rate (100% vs. 18%) were observed. 1 patient from FURS had a small intraparenchymal aspect of staghorn inaccessible to a laser. There were no complications in the FURS group. In the PCNL group, one developed a pseudoaneurysm requiring embolization, and 1 had failed PCNL access (excluded from the statistical calculation). Conclusion Our preliminary data suggest that FURS is efficacious and safe for staghorn stones treatment, and comparable to PCNL. In this context, we highlight FURS potential role as first-line management of staghorn stones.

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Status

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Institution

(Koo, Ahmed, Deshpande, Koderá) Department of Urology, Alexandra Hospital, Worcestershire
Acute Hospitals NHS Trust, United Kingdom

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220.

Semirigid Ureteroscopy: Step by Step.

Giusti G., Proietti S., Rodriguez-Socarras M.E., Saitta G., Bellinzoni P., Gaboardi F.

Embase

Journal of Endourology. 34(S1) (pp S13-S16), 2020. Date of Publication: May 2020.

[Article]

AN: 632025574

This article aims to demonstrate a step-by-step technique of semirigid ureteroscopy (URS) for the treatment of ureteral stones, urothelial tumors, and ureteral stenosis. Operating room setup, camera settings, access to the bladder, and negotiation of the ureteral orifice, lasertripsy, basketing of the stone fragments, endoscopic treatment of ureteral tumors and ureteral stenosis, flexible URS at the end of semirigid URS, and Double-J stent placement are described step by step.

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Institution

(Giusti, Proietti, Rodriguez-Socarras, Saitta, Bellinzoni, Gaboardi) Department of Urology, San Raffaele Hospital, Ville Turro Division, Milan 20127, Italy

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221.

Comparison of non-contrast tomography to urinary calculi with endoscopy uses as a gold standard.

Abdulameer A.M., Munshid B.A., Al-Hamdani H.A., Aldaghir O.M.

Embase

International Journal of Pharmaceutical Research. 12(3) (pp 801-806), 2020. Date of Publication: July-September 2020.

[Article]

AN: 2004196929

Objectives: Aimed this study to estimate the sensitivity of non-contrast axial tomography with ureteroscopy in order to reveal the size and number of the actual ureteral calculation. Imaging methods focused on screening for patients with abdominal X-ray (KUB), ultrasound (US), and non-contrast computerized tomography (CT). Sensitivity range has been reported at a concentration of 58-62% (KUB), 45% (US), and 95- 100% (CT). However, these results were not correlated with the results obtained laparoscopic ally.

Method(s): This study was conducted by stone-makers, who have differential and integral calculations, and who suffer from deficiencies in conservative management that require ureteroscopy (URS). At the time of ureteroscopy it was recorded in relation to the length of the ureter by pushing the guiding wire towards the top electrode of the stone and then the tip of the guiding wire was pulled towards the bottom electrode of the stone. The difference in length was then measured at the outer end of the ureter and some stones were fully recovered by the basket formed in the dormitory and measured externally. All CT scan were reviewed by a urologist who explained the endoscopic results. Who reported the location, number, size and shape of each calculus.

Result(s): Fifty patients with ureteral stone were studied in this study. The time average range from (CT scan to URS) was 19 days. It was a middle stone site location was 16.8% in the upper ureter, 29.7% in the mid ureter and 53.5% in the lower ureter. The mean number of calculi identified per patient in the upper ureter for endoscopy was 64.7% for one stone, 35.3% for 2 stones. in the mid ureter 26.7% one stone, 73.3% for 2 stones. for the lower ureter 55.6% for 1 stone, 33.3% for 2 stones, 11.1% for 3 stones. while the mean number in CT for upper ureter 64.7% for 1 stone, 35.3% for 2 stones, for the mid ureter 80% one stone and 20% 2 stones, for the lower ureter it was 72.2% one stone, 27.8% 2 stones. The mean length in the total kidney calculation (sum of the longest stone diameters) for each ureter was 13 mm and 11 mm for fluoroscopy and CT, respectively ($p = 0.06$) for the upper ureter, while for the average ureter was 14 mm and 12 mm, respectively, either the proportions The lower milker is 12 mm and 11 mm, respectively.

Conclusion(s): A CT scan had results by checking the number of ureteral calculations in various anatomical forms, and it was possible to discover some stones that may be small and unable to distinguish between lying close to each other and that CT scans also reach to reduce the size of the length of the ureter of the ureter.

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Status

Embase

Institution

(Abdulameer, Munshid, Al-Hamdani) Department of Surgery, College of Medicine, Al-Muthanna University, India (Aldaghir) Department of Maxillofacial Surgery, College of Dentistry Al-Muthanna University, India

Publisher

Advanced Scientific Research

Year of Publication

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222.

The left ureterocele and stone of calyceal diverticulum in the patient with bilateral incomplete duplex kidneys managed by flexible ureteroscopy: A case report and literature review.

Pan Y., Chen G., Zhu Y., Chen H.

Embase

BMC Urology. 20(1) (no pagination), 2020. Article Number: 35. Date of Publication: 30 Mar 2020.
[Article]

AN: 631379632

Background: Duplex kidneys are one of the most common renal congenital abnormalities, mostly asymptomatic and of no clinical significance. There are little reports about the left ureterocele and stone of calyceal diverticulum in patients with bilateral incomplete duplex kidneys managed by flexible ureteroscopy. Case presentation: A 69-year-old Chinese woman was presented with left waist pain for 1 month. A preoperative computed tomography (CT) scan and intravenous pyelogram revealed the left ureterocele which located in the left ureterovesical junction, and stone of calyceal diverticulum which located in the upper kidney of left incomplete duplex kidneys. The ureterocele was confirmed in view of ureteroscopy and the holmium laser was used for the resection of ureterocele. It took us a lot of efforts to find out the stone because of diverticular neck stenosis. Fortunately, when diverticular neck stenosis was incised internally by holmium laser, the stone was discovered clearly and removed using the holmium laser and nitinol stone basket through flexible ureteroscopy. A double-J ureteral stent was inserted and remained in place for 1 month. The symptom disappeared postoperatively and no complications were developed during the placement of the stent. There were no stone residents observed on CT scan before removing the ureteral stent 1 month later.

Conclusion(s): Flexible ureteroscopy with holmium laser is feasible to manage the ureterocele and calyceal diverticulum stones in patients with bilateral incomplete duplex kidneys in one operation.

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PMC Identifier

32228555 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=32228555>]

Status

Embase

Institution

(Pan, Chen, Chen, Zhu, Chen) Department of Urology, First Affiliated Hospital of Chongqing Medical University, No. 1 Road Youyi, Yuzhong District, Chongqing, China

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BioMed Central Ltd. (E-mail: info@biomedcentral.com)

Year of Publication

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223.

Transrectal Ureteroscopic Stone Management in a Patient with Ureterosigmoidostomy.

De Fazio A.M., Borofsky M.S.

Embase

Journal of Endourology Case Reports. 6(1) (pp 10-12), 2020. Date of Publication: March 2020.

[Article]

AN: 631285815

Background: Published case reports on the management of ureteral stones in patients with prior ureterosigmoidostomy have described the challenges of direct retrograde access to the ureter using standard endourologic instruments. In light of these challenges, reported effective techniques have involved either (1) direct retrograde access utilizing sigmoid endoscopy with air insufflation or (2) percutaneous antegrade access. We report the first experience of effective retrograde ureteroscopy utilizing traditional endourologic instruments in a patient without

percutaneous access. Case Presentation: The patient is a 70-year-old man born with bladder exstrophy who underwent end colostomy and ureterosigmoidostomy as a child. He presented with a symptomatic 6 mm stone at the right ureterosigmoid junction. A trial of spontaneous passage failed because of persistent pain. Treatment options were limited by the patient's recent history of coronary stent placement, requiring uninterrupted antiplatelet therapy with clopidogrel. As such, we attempted retrograde ureteroscopy through a transrectal approach. Anticipating some difficulty in the identification of the ureteral orifices, we administered methylene blue at the time of induction. After placing the patient in lithotomy position, we advanced a flexible cystoscope to the rectosigmoid junction where we identified a ureteral orifice. Guidewire access was obtained and we confirmed right-sided laterality with fluoroscopic imaging. A semirigid ureteroscope was passed to the ureterosigmoid junction where the stone was encountered and retrieved intact using a basket. A 6 x 26 Double-J stent was placed with a string to facilitate removal 5 days later. The postoperative course was unremarkable.

Conclusion(s): Despite the previously reported challenges of the approach, retrograde ureteroscopy without percutaneous access represents a viable treatment option for ureteral stones in patients with ureterosigmoidostomy.

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Status

Embase

Institution

(De Fazio, Borofsky) Department of Urology, University of Minnesota, Minneapolis, MN, United States

Publisher

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224.

Frontiers of stone management.

Hiller S.C., Ghani K.R.

Embase

Current Opinion in Urology. 30(1) (pp 17-23), 2020. Date of Publication: 01 Jan 2020.

[Review]

AN: 630450863

Purpose of reviewThe surgical tool-box for urinary stone disease is growing. In this review, we discuss recent developments in the surgical management of urolithiasis, with emphasis on tailoring the management to the individual patient, and attention to the quality of care. **Recent findings**Shockwave lithotripsy remains a popular noninvasive treatment option for patients, with new data emerging on how to improve treatment outcomes as well as its limitations. Next-generation holmium lasers are expanding the role of dusting techniques for ureteroscopy but further studies are needed to assess safety and clinical outcomes. Advances in miniaturization and patient positioning are propelling percutaneous renal stone surgery toward endoscopic combined intrarenal and simultaneous bilateral surgery for patients with complex stone disease. **Summary**Stone management will be increasingly personalized to the unique qualities of the patient, stone, desired outcome, and available expertise and technology. Future studies assessing the quality of stone surgery should incorporate objective metrics to better delineate the success and cost of the different techniques available.

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PMC Identifier

31725002 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=31725002>]

Status

Embase

Institution

(Hiller, Ghani) Department of Urology, University of Michigan, 1500 E Medical Center Dr, TC 3875 SPC 5330, Ann Arbor, MI 48109, United States

Publisher

Lippincott Williams and Wilkins (E-mail: agents@lww.com)

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225.

Preclinical comparison of superpulse thulium fiber laser and a holmium:YAG laser for lithotripsy. Andreeva V., Vinarov A., Yaroslavsky I., Kovalenko A., Vybornov A., Rapoport L., Enikeev D., Sorokin N., Dymov A., Tsarichenko D., Glybochko P., Fried N., Traxer O., Altshuler G., Gapontsev V.

Embase

World journal of urology. 38(2) (pp 497-503), 2020. Date of Publication: 01 Feb 2020.

[Article]

AN: 627678067

PURPOSE: A superpulse (500 W peak power) thulium fiber laser operating at a 1940 nm wavelength, suitable for lithotripsy, has recently been developed. The goal of this study was to compare stone fragmentation and dusting performance of the prototype superpulse thulium fiber laser with leading commercially available, high-power holmium:YAG lithotripters (wavelength 2100 nm) in a controlled in vitro environment.

METHOD(S): Two experimental setups were designed for investigating stone ablation rates and retropulsion effects, respectively. In addition, the ablation setup enabled water temperature measurements during stone fragmentation in the laser-stone interaction zone. Human uric acid (UA) and calcium oxalate monohydrate (COM) stones were used for ablation experiments, whereas standard BegoStone phantoms were utilized in retropulsion experiments. The laser settings were matched in terms of pulse energy, pulse repetition rate, and average power.

RESULT(S): At equivalent settings, thulium fiber laser ablation rates were higher than those for holmium:YAG laser in both dusting mode (threefold for COM stones and 2.5-fold for UA stones) and fragmentation mode (twofold for UA stones). For single-pulse retropulsion experiments, the threshold for onset of stone retropulsion was two to four times higher for thulium fiber laser. The holmium:YAG laser generated significantly stronger retropulsion effects at equal pulse energies. The water temperature elevation near the laser-illuminated volume did not differ between the two lasers.

CONCLUSION(S): Distinctive features of the thulium fiber laser (optimal wavelength and long pulse duration) resulted in faster stone ablation and lower retropulsion in comparison to the holmium:YAG laser.

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Author NameID

Yaroslavsky, Ilya; ORCID: <http://orcid.org/0000-0002-7272-8231>

Institution

(Andreeva, Kovalenko) One Vvedenskogo Sq, Moscow Region, Fryazino 141120, Russian Federation (Vinarov, Rapoport, Enikeev, Sorokin, Dymov, Tsarichenko, Glybochko) Institute for Urology and Reproductive Health, Sechenov University, 19 Bolshaya Pirogovskaya Ul, Moscow, Russian Federation

(Yaroslavsky, Vybornov, Altshuler) IPG Medical, MA, 377 Simarano Dr, Marlborough 01752, United States

(Fried) Department of Physics and Optical Science, University of North Carolina Charlotte, 9201 University City Boulevard, Charlotte 28223, United States

(Traxer) University Pierre et Marie Curie Paris VI, 4 Place Jussieu, Paris 75005, France

(Gapontsev) IPG Photonics, MA, 50 Old Webster Rd, Oxford 01540, United States

Publisher

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226.

Comparative investigation of reusable and single-use flexible endoscopes for urological interventions.

Eisel M., Strittmatter F., Strobl S., Freymuller C., Pongratz T., Sroka R.

Embase

Scientific reports. 10(1) (pp 5701), 2020. Date of Publication: 30 Mar 2020.

[Article]

AN: 631414266

In order to evaluate the technical adaptability of a type of disposable endoscope compared to reusable flexible endoscopes, in vitro and in vivo studies were conducted. A disposable digital ureteroscope ("chip on tip") and two reusable endoscopes were investigated with respect to spatial resolution, geometric distortion in air and water the maximum. Additionally, the clinical performance of the disposable device was tested during clinical procedures (n=20). The disposable endoscope showed an optical resolution of 6.72 lines/mm at 10mm distance, similar to the other devices. In comparison, the disposable endoscope showed a barrel-shaped image distortion in air of -24.2%, which is in the middle range, but was best under water (-8.6%). The bendability of 297degree (275microm fiber) and 316degree (empty channel, 1.5F basket) and the maximum irrigation (1m: 58.1ml/min, 2m: 91.9ml/min) were convincing. Clinically the maneuverability was very good in (13/20), good or satisfactory in (7/20). Visibility was evaluated as very good in (11/20), just in (1/20) either satisfactory or sufficient. The consistency of visibility was not affected in (19/20). In all cases there were no adverse events. The technical examination and clinical application of the disposable endoscope are of equal quality compared to reusable devices. Disposable endoscopes can be an alternative to reusable devices, but economic aspects such as reduction of repair costs, sterilization effort and additional waste must be taken into account.

PMC Identifier

32231344 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=32231344>]

Author NameID

Eisel, Maximilian; ORCID: <http://orcid.org/0000-0002-7321-7302>

Institution

(Eisel, Strobl, Freymuller, Pongratz, Sroka) Laser-Forschungslabor, LIFE-Zentrum, University Hospital of Munich, Munich, Germany (Eisel, Strittmatter, Strobl, Freymuller, Pongratz, Sroka) Department of Urology, University Hospital of Munich, Munich, Germany

Publisher

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227.

The Impact of Ureteral Access Sheath Use on the Development of Abnormal Postoperative Upper Tract Imaging after Ureteroscopy.

Cooper J.L., Francois N., Sourial M.W., Miyagi H., Rose J.R., Shields J., Sharma N., Domino P., Otto B., Box G.N., Bird V.G., Posid T., Knudsen B.E.

Embase

The Journal of urology. 204(5) (pp 976-981), 2020. Date of Publication: 01 Nov 2020.

[Article]

AN: 631918273

PURPOSE: Ureteral access sheaths are commonly used during ureteroscopy to facilitate stone removal, improve visibility and maintain low intrarenal pressures. However, the use of a ureteral access sheath can cause ureteral wall ischemia and ureteral tears, potentially increasing the risk of postoperative ureteral stricture and obstruction. We studied the impact of ureteral access sheath use on postoperative imaging studies. Secondary objectives included studying the impact of other intraoperative parameters on postoperative imaging studies. **MATERIALS AND METHODS:** A retrospective chart review was conducted of cases that underwent ureteroscopy for nephroureterolithiasis across 2 high volume institutions between January 2012 and September 2016. Patient demographics, cumulative stone size, operative time, use of ureteral access sheath, laser lithotripsy, basket extraction, preoperative ureteral stent and postoperative ureteral stent placement were extracted from the electronic medical record. Findings of followup renal ultrasound, kidney-ureter-bladder x-ray and/or computerized tomography at approximately 8 weeks after surgery were recorded.

RESULT(S): A total of 1,332 ureteroscopies were performed with 1,060 cases (79.6%) returning for routine upper tract imaging after ureteroscopy. Postoperative hydronephrosis was noted following 127 cases (12.0%). Factors predicting presence of hydronephrosis after ureteroscopy include lower body mass index ($p=0.0016$), greater cumulative stone size ($p=0.0003$), increased operative time ($p < 0.0001$), preoperative ureteral stent (OR 1.49, $p=0.0299$) and postoperative

ureteral stent placement (OR 6.43, p=0.0031). Postoperative hydronephrosis was not associated with use of ureteral access sheath, age, laser lithotripsy or basket extraction.

CONCLUSION(S): Use of ureteral access sheath did not have a significant impact on development of postoperative hydronephrosis, suggesting ureteral access sheath is safe for use during ureteroscopy. Ureteral strictures remain rare following ureteroscopy, seen in only 1.0% of our cohort. With an observed prevalence of hydronephrosis of 12.0% on followup imaging at 8 weeks, routine upper tract imaging after ureteroscopy remains a valuable prognostic tool.

PMC Identifier

32459602 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=32459602>]

Institution

(Cooper, Francois, Sourial, Rose, Box, Posid, Knudsen) Department of Urology, Ohio State University Medical Center, Columbus, OH, United States (Miyagi) College of Medicine, Ohio State University Medical Center, Columbus, OH, United States

(Shields, Sharma, Domino, Otto, Bird) Department of Urology, University of Florida, Gainesville, FL, United States

Publisher

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228.

Ureteroscopy in ureteric stone management: the need for laser lithotripsy and ancillary equipment.

Hassan A.I., Al-Hammodi B.M., Ramzi R.M.

Embase

Urologiia (Moscow, Russia : 1999). (4) (pp 18-20), 2020. Date of Publication: 01 Sep 2020.

[Article]

AN: 632817001

Over the past several decades, there has been a significant increase in the prevalence of nephrolithiasis in the general population. Ureteroscopy has become the treatment of choice for a growing number of urologic conditions; ureteroscopy is still relatively new procedure and continue to undergo significant advancement. The recent technical development of small caliber semi rigid and flexible deflectable ureteroscopes and the development of diminutive intra-corporeal lithotripsy probes have made the retrograde access to urinary calculi throughout the entire ureter a more feasible and low-risk technique. The study aims to identify the need for use of laser lithotripsy and/or other ureteroscopic ancillary equipment (ureteric stent, ureteric catheter, forceps and dormia basket) in patient undergoing ureteroscopy for ureteric stone management. A prospective observational study from 2013 to 2015. The study conducted in urosurgical theater in Al-Jumhoori Teaching Hospital. 200 patient with ureteric stone in the study treated by ureteroscopy. The mean age of the patient is 36 years. Ureteroscopy had done in the right side in 98 patients, left side in 83 patients, and bilateral ureteroscopy in 19 patients. Ureteric stones found in upper ureter in 86 patients, middle ureteric stone seen in 40 patients, and lower ureteric stone founded in 108 patients, whereas 16 patients had stones at more than one location. Ureteric catheter used in 33 patients, and had been removed after 48-72 hours, while Double J stent had been used in 175 patients and had been removed after 2 to 8 weeks.

PMC Identifier

32897009 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=32897009>]

Institution

(Hassan, Al-Hammodi, Ramzi) Department of Surgery, College of Medicine, University of Mosul, Mosul, Iraq (Hassan, Al-Hammodi, Ramzi) Aljamhoori Teaching Hospital, Mosul Health Directorate, Ministry of Health/Environment, Mosul, Iraq

Publisher

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2020

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229.

Comparison of stone dusting efficiency when using different energy settings of Holmium: YAG laser for flexible ureteroscopic lithotripsy in the treatment of upper urinary tract calculi.

Chen S., Fu N., Cui W., Zhao Z., Luo X.

Embase

Urology journal. (pp 4955), 2019. Date of Publication: 13 May 2019.

[Article]

AN: 627875138

PURPOSE: The aim of this study is to evaluate the impact of different pulse energy settings on dusting efficiency in flexible ureteroscopic lithotripsy (fURSL) for the treatment of upper urinary tract calculi. **MATERIALS AND METHODS:** Data of 88 consecutive patients who underwent fURSL for upper urinary tract calculi by a single surgeon in our department From August 2017 to August 2018 were reviewed retrospectively. Lumenis Power Suite 100W lithotripter with a 200 ?m laser fiber was used to comminute stones. According to energy settings, patients were divided into three groups- low energy group (LE: 0.3-0.6J), middle energy group (ME: 0.7-1.0J), high energy group (HE: 1.1-1.5J). Frequency was set at 30Hz in all patients. ANOVA and Chi square tests were applied to compare the difference of the mean lithotripsy and operation time, early stone-free rate (eSFR), overall stone-free rate (oSFR) and complication rate.

RESULT(S): A total of 32, 36 and 20 patients were included in the LE, ME and HE groups, respectively. There was no difference in the age, gender distribution or in any other stone characteristics among the three groups. The mean lithotripsy time of LE, ME, HE was 10.9+/-7.6, 16.1+/-7.0, 23.0+/-15.0 min respectively. The mean operation time of the three groups was 16.9+/-7.7, 22.3+/-7.1, 29.2+/-14.9 min respectively. There were significant differences on the mean lithotripsy time ($P=0.002$) and the mean operation time ($P=0.001$) among the three groups. The stone-free rate was 31.8% and 87.5% respectively in eSFR and oSFR. No statistical significance was detected among the three groups in terms of the eSFR ($P=0.89$), oSFR ($P=0.86$), and complication rate ($P=0.97$).

CONCLUSION(S): In fURSL with dusting, low energy (0.3-0.6J) is more efficient than middle (0.7-1.0J) and high energy (1.1-1.5J). As energy increased, dusting efficiency decreased dramatically. Consequently, we recommend low pulse energy (0.3-0.6J) as the optimal dusting strategy for fURSL.

PMC Identifier

31087322 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=31087322>]

Institution

(Chen) Department of Urology, Affiliated Hospital of Zunyi Medical College, P.R.C., Zunyi, Guizhou, China (Fu, Cui, Zhao, Luo) Department of Urology, Affiliated Hospital of Zunyi Medical College, P.R.C, Zunyi, Guizhou, China

Publisher

NLM (Medline)

Year of Publication

2019

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230.

Mini-percutaneous nephrolithotomy technique of percutaneous nephrolithotomy with thulium fiber laser.

Niu S., Carrera R., Molina W.

Embase

Journal of Endourology. Conference: 35th Annual Meeting of the Society for Engineering and Urology. Washington, DC United States. 34(10) (pp 1100-1101), 2020. Date of Publication: October 2020.

[Conference Abstract]

AN: 633717307

Introduction: Although percutaneous nephrolithotomy (PCNL) is usually safe and well tolerated, it is still associated with a notable set of complications. The complications rates for PCNL range from 20% to 83%.¹ More urologists are adopting the mini-PCNL technique to decrease morbidity associated with conventional PCNL while preserving high stone-free rates when compared with ureteroscopy.² To our knowledge, this is one of the first mini-PCNLs performed in North America with the thulium fiber laser, which features more optimal intrinsic characteristics than the current

gold standard for laser lithotripsy.³ We aim to determine whether this novel combination can serve as an effective strategy for treatment of moderate-sized renal stones.

Material(s) and Method(s): After Institutional Review Board approval, we retrospectively reviewed two patients with stones between 1.5 and 3.0 cm who were referred to our department for evaluation. Both elected treatment with mini-PCNL. Access was obtained intraoperatively. The thulium fiber laser was used in both cases and the settings were adjusted to determine the optimal settings for stone treatment. We have selected one of the cases to highlight our technique for using the thulium SuperPulse laser for treatment of medium-sized renal calculi using the mini-PCNL technique.

Result(s): Adequate access is achieved using supine decubitus position with the side of treatment positioned at the edge of the table. The ipsilateral flank is elevated to create 15° of rotation to expose the puncture area, demarcated by the inferior edge of the 12th rib, the iliac crest, and the posterior axillary line. The ipsilateral arm is protected and placed across the thorax to avoid stretching of the brachial plexus. Access was obtained using a 15F/16F rigid access sheath. The thulium laser was capable of exceptional ablation rate and real dusting with dust particles <1mm. A 365-mm fiber was used with total laser time *28 minutes and 49 kJ of total laser energy. Dusting of the initial large stone was ideal with 1 J and 30 Hz, and dusting of smaller fragments was optimal with 0.3 J and 50 Hz. Neither patient had a postoperative complication, and both were considered stone free based on imaging at follow-up. This is a descriptive video of our technique that has been performed on a total of two patients. Owing to the rarity of this procedure, no statistical analysis was calculated.

Conclusion(s): The mini-PCNL technique is a safe and effective strategy for treatment of stones with sizes that fall in the middle ground between conventional PCNL and flexible ureteroscopy. Thulium fiber laser has the potential to change the landscape of stone treatment owing to its more optimal wavelength with a higher water absorption, lower pulse energy, and higher pulse frequency, all of which can increase the efficiency of laser lithotripsy by providing less stone retropulsion and smaller stone fragments on dusting settings, thereby decreasing operative time. A combination of the mini-PCNL technique with thulium fiber laser could lead to improved stone-free rates with potentially less perioperative complications. Further studies with larger cohorts are needed to further assess the generalizability of our outcomes with this novel combination of technique and technology.

Status

CONFERENCE ABSTRACT

Institution

(Niu, Carrera, Molina) Department of Urology, University of Kansas Medical Center, Kansas City, KS, United States

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231.

Novel technique for residual stones removal: Second-look flexible nephroscopy in gas (CO₂) medium.

Korolev D., Rapoport L., Tsarichenko D., Enikeev M., Taratkin M., Enikeev D., Glybochko P.

Embase

European Urology Open Science. Conference: 7th Meeting of the EAU Section of Uro-Technology in conjunction with the German Working Groups of Endourology, Laparoscopy and Robotic Assisted Surgery. Leipzig Germany. 19(Supplement 1) (pp e15), 2020. Date of Publication: January 2020.

[Conference Abstract]

AN: 2004592480

Introduction & Objectives: The problem of residual stones is still relevant, especially in group of patients who has undergone PCNL for complex forms of stone disease. Flexible second-look nephroscopy in liquid irrigation medium significantly increases the cost of percutaneous surgery and also may increase complication rate associated with high intrarenal pressure especially for infected stones. The aim of the study was to evaluate safety and efficacy of second-look flexible nephroscopy in gas (CO₂) medium for patients with residual stones after previous PCNL.

Material(s) and Method(s): There were a total of 22 patients, mean age was 51±14 years. 13 patients had staghorn stones and other 9 patients had large multiple stones with stone size 23.7±2.4 (20-28) mm. Conventional PCNL was performed with standard technique using a 30 Fr Amplatz sheath and ultrasound lithotripsy. The mean residual stone size and stone density were 8.3±2.7 (5-17) mm and 1019±245 (485-1483) HU respectively. Second-look flexible

nephroscopy in gas (CO₂) medium using existing nephrostomy tract was performed on postoperative day 3-4. For nephroscopy we used flexible digital and fibre optic cystoscopes. Irrigation was applied as gas (CO₂) medium which was pumped by laparoscopic insufflator. The insufflator settings for all operations were 12 mm.Hg nominal pressure and gas flow rate - 1.5 L/min. A standard 10ft/ 3m insufflation hose with CO₂ filter was used. To assess the impact of gas (CO₂) medium we control acid-base balance (ABB). Blood pH was measured immediately before the operation, during it and 3 hours after its completion as well. Stone removal was performed by nitinol baskets. In one case we performed Holmium YAG Laser Lithotripsy for 17 mm residual stone after pre-filling pelvicaliceal system (PCS) with saline. In 2 cases we failed to blow PCS with gas (CO₂) medium because of the latter high rigidity and we had to continue nephroscopy with saline.

Result(s): The mean second-look flexible nephroscopy time was 42.7+/-14.4 min. No postoperative complications were experienced. No stone migration was evolved. Blood pH during the operation and 3 hours after did not go beyond the limits of acceptable values (7,35-7,45) and remained normal in all patients. Stone-free rate was 86.3 % at 1,5-mo follow-up (low dose CT).

Conclusion(s): Second-look flexible nephroscopy in gas (CO₂) medium is an effective and safe method for residual kidney stones removing. Benefits of this technique are as follows: Relative cheapness due to lower cost of gas (CO₂), and low migration rate that reduces operating time. Low pelvic pressure allows to eliminate the risk of pyelovenous reflux and subsequent septic complications. Limitations of the technique are related with PCS rigidity, making difficult to adequately fill it with gas and also and inability to use laser energy in gas (CO₂) medium.

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Status

CONFERENCE ABSTRACT

Institution

(Korolev, Rapoport, Tsarichenko, Enikeev, Taratkin, Enikeev, Glybochko) Sechenov University, Dept. of Urology and Reproductive Health, Moscow, Russian Federation

Publisher

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232.

Rirs for kidney stones with novel superpulse thulium (TM) fiber laser: First clinical experience. Korolev D., Klimov R., Tsarichenko D., Enikeev M., Dymov A., Ali S., Akopyan G., Lekarev V., Taratkin M., Rapoport L., Enikeev D., Glybochko P.

Embase

European Urology Open Science. Conference: 7th Meeting of the EAU Section of Uro-Technology in conjunction with the German Working Groups of Endourology, Laparoscopy and Robotic Assisted Surgery. Leipzig Germany. 19(Supplement 1) (pp e14), 2020. Date of Publication: January 2020.

[Conference Abstract]

AN: 2004592459

Introduction & Objectives: The SuperPulse Thulium (Tm) fiber laser (IRE Polus, Russia) (wavelength of 1.94 μm) is a next generation laser technology. Recently, in vitro studies have shown a significant potential of the SuperPulse Tm fiber laser for lithotripsy. But the lack of clinical data does not allow to reliably assess the effectiveness and safety of this new technology. This study aimed to assess the efficacy and safety of RIRS with Tm fiber laser lithotripsy for kidney stones.

Material(s) and Method(s): The SuperPulse Tm fiber laser device has been cleared for clinical use by the Ministry of Health of Russian Federation and the protocol has been approved by the institutional Ethical Review committee. Between January 2018 and February 2019, 130 patients with kidney stones have undergone Thulium fiber laser lithotripsy during RIRS. Stone size, its density, lithotripsy time (from the first to last pedal press) and "lasering" (laser emission) time were measured. The SuperPulse Tm fiber laser was used for stone disintegration with different settings in dusting and fragmentation modes (0.1 - 4J, 7-300Hz, 6-40W) via a fiber with a 200- μm core diameter. Low dose CT scanning was performed on POD 90 to assess SFR.

Result(s): Stone size ranged from 4 to 36 mm and stone density varied from 250 to 1610 HU. The average lithotripsy time was 25.9 min (3-70 min). The average "lasering" time was 5.4 min (0.4-26.5 min) and the mean hospital stay was 1.1 $\pm$ 0.3 days. The complication rates were evaluated by using the Clavien-Dindo grading system and did not exceed GII. The overall postoperative complication rate was 7.6% (GI 6.1%; GII 1.5%). SFR on POD 90 was achieved in 88,4% of cases.

Conclusion(s): RIRS with SuperPulse Tm fiber laser is a safe and effective option for kidney stones management. Wide range of setting's modalities allows to disintegrate stones with variant diameters (up to 36 mm) and density in both fragmentation and dusting modes during one session.

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Status

CONFERENCE ABSTRACT

Institution

(Korolev, Klimov, Tsarichenko, Enikeev, Dymov, Ali, Akopyan, Lekarev, Taratkin, Rapoport, Enikeev, Glybochko) Sechenov University, Dept. of Urology and Reproductive Health, Moscow, Russian Federation

Publisher

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Year of Publication

2020

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233.

Informing the management of asymptomatic nephrolithiasis: Markov decision analysis for the 1cm renal stone.

Djang R., Pais V.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e21-e22), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632062486

INTRODUCTION AND OBJECTIVE: The management of incidentally discovered, asymptomatic renal stones is controversial. Options include watchful waiting (WW) or pre-emptive surgical treatments. Shock wave lithotripsy (SWL), ureteroscopy with basket extraction of fragments (URS-B), and ureteroscopy with laser "dusting" (URS-D) are options which come with different levels of invasiveness, stone free rates (SFR), and postoperative quality of life (QOL). We performed decision analysis to assess optimal quality adjusted life-years (QALY) associated with each option **METHODS:** A Markov Model was constructed with TreeAge Pro software (Fig 1) representing potential outcomes for a single 1cm renal stone with each possible intervention. The cohort was followed for 1 month cycles over three years. Toll-penalties for ureteral stents and undergoing surgery were incorporated into each subtree when indicated. Probabilities, utilities, and toll-penalties were derived from existing literature and clinical extrapolation if no published data was available. One-way sensitivity analyses were performed to determine probabilities and utilities that may alter preferred options **RESULTS:** WW was the preferred intervention, preserving 2.82 QALYs over three years. Remaining options had similar but decreasing QALYs: URS-B at 2.78, SWL at 2.72, and URS-D at 2.67 QALYs. Oneway sensitivity analysis was performed for the range of expected stone free probabilities per intervention and for range of disutility related to ureteral stents (Fig 2). URS-D was preferred when SFR with URS-B dropped below 37% (Figure 2). SWL was preferred over URS-B when the SFR with URS-B dropped below 62%. As stents became progressively less bothersome, WW is preferred, followed by URS-B, SWL, and URS-D

CONCLUSION(S): When accounting for SFR and utilities of associated health states over a three year period, WW is a preferred strategy for asymptomatic renal stones. However, these results are sensitive to both actual stone free rate and individual stent tolerance, emphasizing the importance of shared decision making (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Djang, Pais) LebanonNHUnited States

Publisher

Lippincott Williams and Wilkins

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234.

Initial human experience with a novel stone aspiration device used during ureteroscopic lithotripsy for renal stones.

Eisner B., Agrawal S., Desai M., Preminger G., Haleblan G., Sur R.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e211), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632062225

INTRODUCTION AND OBJECTIVE: Recent evidence suggests that basket extraction of stone fragments after ureteroscopic lithotripsy is time-consuming and may result in poorer-than-expected stone free rates. Herein we report the first-in-human experience using a novel stone aspiration device designed to more efficiently and effectively remove stone fragments after ureteroscopic lithotripsy.

METHOD(S): A randomized, controlled trial was performed comparing two techniques during ureteroscopy with laser lithotripsy-Group 1 basket retrieval; Group 2 fragment aspiration with a novel suction device (K-VAC; Kalera Medical, San Diego, CA). Inclusion criteria: renal stones 5-15 mm. All procedures utilized a 12/14 Fr ureteral access sheath and ureteral stent.

Primary Outcome: stone free rate (defined as no stone fragments) post-operative day 30 on non-contrast abdomen/pelvis CT imaging.

RESULT(S): A total of 20 subjects were randomized to the basket arm of the study (10 patients) or to the K-VAC arm (10 patients). There were no differences in patient demographics or pre-operative stone volume. At 1 month follow up CT imaging, 75% of Group1 were stone free compared to 100% of Group 2. Proportion stone volume removed (mean) was significantly higher in the K-VAC group (Group 1 = 61.2% vs Group 2 = 85.2%, $p=0.04$). Adverse events included urinary tract infection in Group 1 and self-resolving ileus in Group 2.

CONCLUSION(S): Use of the K-VAC suction device demonstrated superior stone free rates and more efficient stone removal compared to basketing during ureteroscopy with lithotripsy. Larger clinical trials are planned to confirm the efficacy of this innovative device. (Table Presented).

Status

CONFERENCE ABSTRACT

Institution

(Eisner, Haleblan) BostonMAUnited States (Agrawal, Desai) NadiadIndia

(Preminger) DurhamNCUnited States

(Sur) San DiegoCAUnited States

Publisher

Lippincott Williams and Wilkins

Year of Publication

2020

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235.

Surgical site influences cost effectiveness of ureteroscopy in a large healthcare system.

Khaleel S., Portis A., Anderson J., Borofsky M.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association.

Washington, DC United States. 203(Supplement 4) (pp e63-e64), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632062218

INTRODUCTION AND OBJECTIVE: Ureteroscopy(URS) has become the most common surgical management for urolithiasis. Disposable instruments (DI's) used during URS may vary, which in turn affects overall procedure cost. To date, the influence of surgeon and hospital site on the total DI cost (DIC) of URS has not been formally studied. We sought to assess whether surgeon and site were independently associated with DIC in a large multi-hospital system.

METHOD(S): Our institutional electronic medical record (Epic Systems, Madison, WI) was retrospectively searched for procedures billed for CPT codes 52356/52353 (URS with/without stent placement), performed from 8/2018 - 08/2019. We developed a computer program in Perl programming language to analyze raw EMR data. Our outcomes of interest were mean case length, number of DI's, and hospital-incurred total DIC. DI's were classified as laser fiber, wires, ureteral stent, stone basket, ureteral access sheath, ureteral dilator, dual lumen catheter, or other "miscellaneous" items with DIC $\geq$ \$50. We selected for surgeons who performed at least 20 procedures at more than one site. Sites were deemed high- or low-volume (HV, LV) sites if their annual volume was above or below median site volume in the system. Multivariate regression was used identify predictive factors, and analysis of variance (ANOVA) was used to assess variation across different sites and surgeons.

RESULT(S): We identified 368 cases performed by 8 surgeons across 6 sites (3 HV sites, 3 LV sites). Median site volume was 100 cases. Most cases (304, 75.2%) were performed at HV sites. Mean case DIC, case length, and number DI's used varied significantly across sites (ANOVA $p = 0.000$ for all three variables). Overall mean DIC was \$975 (\$388.8 - \$1863), mean number of DI's used was 5.48 (3-9), and mean total case length was 78.7 minutes (28 - 187.8). On multivariate regression, only surgical site was a significant predictor of DIC ($p = 0.000$), when adjusting for surgeon and high/low volume status (Figure 1). Site and surgeon were both significant predictors of number of DI's used ($p=0.000$), and case length ($p = <0.01$).

CONCLUSION(S): Procedural costs related to URS may vary between hospitals even when performed by the same surgeon. Further investigation into hospital practices with low DIC's is warranted in an effort to potentially identify opportunities for cost savings. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Khaleel, Portis, Anderson, Borofsky) MinneapolisMNUnted States

Publisher

Lippincott Williams and Wilkins

Year of Publication

2020

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236.

Size distribution of fragments by Moses™ technology holmium laser lithotripsy: A prospective analysis of 110 cases.

Reddy N.M., Tak G., Patil A., Singh A., Ganpule A., Sabnis R., Desai M.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e62), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632062182

INTRODUCTION AND OBJECTIVE: Basket extraction of all possible stone fragments has been shown in recent studies to increase stone clearance and recurrence in patients undergoing laser lithotripsy of renal calculi. However, data are lacking on distribution of size of fragments created with different laser settings, stone density and composition that may impact the ability to basket such fragments. Dust (< 1mm) and small fragments (1-3 mm) may be too small to be efficiently basketed compared to larger fragments (> 3mm). In this study we report size distribution of fragments created with various energy settings during holmium laser lithotripsy.

METHOD(S): 110 patients with renal calculi underwent Mini- PCNL using ClearPetra sheath(Well Lead Medical Co., China) with controllable irrigation and suction system that minimizes fragment dispersion and maximizes fragment aspiration. Moses Holmium laser (Lumenis INC, Israel) was used with various combinations of energy settings for lithotripsy. Single energy setting was used in 57 cases and multiple settings in 53 cases . All fragments were collected in strainer incorporated in aspiration system and separated, weighed into dust (<1mm), small (1-3 mm) and large (>3 mm) fragments for each energy setting. Factors influencing creation of baskettable (> 3mm) fragments was assessed using multivariable regression analysis. Sensitivity analysis according to stone composition and stone clearance was also performed.

RESULT(S): Mean stone diameter was 17.5+/-8.9 mm and stone density was 1198 HU271. Laser settings ranged from various combinations of frequency (10-80 Hz) and power (0.2-2 J).

Complete stone clearance at 48 hours was achieved in 76% cases. 80 % patients completed one month follow-up and had 100% stone clearance on CT KUB. Proportion of fragment size < 1mm was 45.8+/-17.1% (9-81%), 1-3 mm was 28.8+/-11.8% (3-53%), and > 3 mm was 24.9+/-16.4% (0-64%) for entire cohort. Using multivariable regression analysis frequency, energy and power

were all predictive for proportion of creating > 3 mm fragments ($P<0.05$). Average efficiency of fragmentation was 5.5 mm³ /sec and was not associated with any factor on multivariable regression.

CONCLUSION(S): Despite varying laser energy settings, across various stone compositions, majority of fragments created are either < 1mm or 1-3 mm that may be difficult to basket. Only 25% fragments were >3 mm that would basket easily. These findings suggest basketing techniques alone may be insufficient to achieve complete stone clearance and may influence stone extraction strategies going forward.

Status

CONFERENCE ABSTRACT

Institution

(Reddy, Tak, Patil, Singh, Ganpule, Sabnis, Desai) NadiadIndia (Desai) Los AngelesCAUnited States

Publisher

Lippincott Williams and Wilkins

Year of Publication

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237.

Do pre-operative alpha-blockers increase the success of ureteral access sheath placement?.

Biebel M., Merheb S., Boyko A., Hill S., Wason S., Wang D., Katz M., Babayan R.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e208), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632062139

INTRODUCTION AND OBJECTIVE: Urologists routinely place ureteral access sheaths (UAS) prior to ureteroscopy and laser lithotripsy to expedite basket extraction and improve drainage. Alphablockers have been shown to relax ureteral wall smooth muscle. A prior study has suggested that pre-operative tamsulosin improves placement success of larger 16 French access sheaths. This study aims to determine if pre-operative alpha-blockers facilitate standard 12/14 French UAS placement prior to retrograde ureteroscopy.

METHOD(S): A retrospective analysis of 527 patients from a single institution from January 2016 to December 2018 who underwent ureteroscopy and laser lithotripsy for renal and/or ureteral stones were analyzed. Demographic data, presence of pre-operative stents, UAS usage (12/14 French), UAS placement failure, need for ureteral dilation, pre-operative alpha blocker usage and duration, and unplanned ED or clinic visits within 30 days post-operatively were recorded. Chi square analysis was performed to determine the correlation between alpha-blocker use and success of UAS placement. Patients who had uncomplicated UAS placement were compared to those requiring ureteral dilation and those failing UAS placement.

RESULT(S): Of the 527 patients reviewed, an access sheath was placed in 424 patients. Of the successful UAS placement group, 219 patients (51.7%) were on pre-operative alpha-blockers and 205 patients (48.3%) were not. Nine of 424 UAS patients (2.1%) required ureteral dilation (via balloon dilator, sequential dilation, or second wire "rail-roading") to allow the UAS to be placed (none pre-stented). Seven of these nine patients (77.8%) did not take pre-operative alpha-blockers ($p=0.074$). UAS placement was attempted, but not successful in eight patients (1.5%) of the total 527 patients (none pre-stented). Six out of eight (75%) of the failed UAS patients did not take any pre-operative alpha-blockers ($p=0.135$).

CONCLUSION(S): Approximately half of the patients who had successful UAS placement were on alpha-blockers pre-operatively, and half were not. In the groups who failed UAS placement or required dilation prior to UAS placement, there was a slightly higher proportion of patients not on pre-operative alpha-blockers, but no statistical significance was determined. Overall, pre-operative alpha-blockers were not shown to affect standard UAS placement. Investigation of a larger cohort of complicated or failed UAS placements and further prospective studies are needed to confirm these findings.

Status

CONFERENCE ABSTRACT

Institution

(Biebel, Merheb, Boyko, Wason, Wang, Katz, Babayan) BostonMAUnited States (Hill)

NashvilleTNUnited States

Publisher

Lippincott Williams and Wilkins

Year of Publication
2020

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238.

Super-mini PCNL (SMP) Vs standard PCNL for the management of renal calculi < 2 cm : A randomized controlled study.

Chawla A., Mohan A., Kapadia A., Gudetti R., Mohammed Z.B., Hegde P.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e60), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632062129

INTRODUCTION AND OBJECTIVE: RIRS is useful in the management of small renal calculi (<2cm), however in developing countries PCNL provides alternative which is economical and provides stone clearance in single stage. Miniaturized PCNL are associated with lesser complications compared to standard PCNL. But concerns in the miniaturized PCNL remains about stone clearance. To address this concern, the current mini- PCNL that is Super-mini PCNL (SMP) was designed for effective stone clearance with fragments removal by irrigation/ suction and fragment extraction by smaller stone removal forceps and with added advantage to prevent excessive intrarenal pressure and improved visualization. There is lacunae of data comparing the results of this Super mini PCNL procedure with standard PCNL. In the present study, the primary objective is to compare the efficacy (stone-free rate) between SMP and standard PCNL. The secondary objectives are to compare the safety (blood loss, complications), operative time, length of hospital stay and post-operative pain score and analgesic requirement.

METHOD(S): 150 patients presenting with renal calculi < 2 cm were randomized to a standard or a Super-mini PCNL group between September 2018 and April 2019. Randomization was based on centralized computer-generated numbers. In SMP, sheath is of 14-Fr size with internal working channel of 12.5 Fr and an oblique channel to which suction was attached. This oblique part consists of a pressure vent through which pressure can be adjusted by either partially or completely occluding the pressure vent with the surgeon's thumb. Irrigation into pelvi-calyceal system is through a 6 Fr ureteric catheter (with multiple holes at the proximal 5 cm) placed in the ureter. With active suction, the dust and tiny stone fragments would pass through the oblique channel into the collecting bottle of suction. The larger fragments were extracted using a 3Fr grasper. In standard PCNL, 24-28 Fr amplatz sheath and 20.8 / 26 Fr nephroscope were used to manage the calculus. Variables studied were stone free rates, operating time, intraoperative and postoperative complications (according to the Clavien-Dindo classification system), postoperative pain score, analgesic requirement and hospital stay. Statistical analysis was performed using a t-test for continuous variables with normal distribution and a Mann-Whitney U-test for variables without normal distribution. For categorical variables, the chi-squared test or Fisher's exact test was applied. A P value <0.05 was considered to indicate statistical significance.

RESULT(S): Comparison of intra-operative and postoperative variables in the two study groups.

CONCLUSION(S): Super-mini PCNL offers equal stone clearance rate compared to standard PCNL, however it is more safe when compared to standard PCNL in-terms of complications. Even though SMP has more operative time compared to standard PCNL, it has significantly less intra-operative and post-operative bleeding with less post-operative pain score and thereby less hospital stay and lesser Clavien Dindo complications.

Status

CONFERENCE ABSTRACT

Institution

(Chawla, Mohan, Kapadia, Gudetti, Mohammed, Hegde) ManipalIndia

Publisher

Lippincott Williams and Wilkins

Year of Publication

2020

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239.

Indications for stent omission after ureteroscopic lithotripsy: A prospective trial from the registry for stones of the kidney and ureter (Resku).

Fisher R., Cobb K., Friedlander D., Bayne D., Bechis S., Chang H., Chi T., Duty B., Harper J., Metzler I., Sorensen M., Stoller M., Tzou D., Sur R.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e206), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632062084

INTRODUCTION AND OBJECTIVE: Ureteral stent complications including pain, infection and discomfort are a significant source of emergency room visits in the post-operative period. Per AUA Guidelines, placement of a ureteral stent following ureteroscopy (URS) is at the urologist's discretion. The risk/benefit calculation for routine use of ureteral stents following uncomplicated URS is controversial. We performed a multi-institutional study to investigate if ureteral stent omission is safe following URS compared to routine stenting.

METHOD(S): From November 2018 to June 2019, a stent omission protocol was instituted at 5 academic centers for patients undergoing URS with laser lithotripsy and/or basketing by 6 fellowship trained endourologists. Inclusion criteria included: age ≥ 18 years, solitary ureteral stone ≤ 10 mm, total renal stone burden ≤ 15 mm with largest stone ≤ 10 cm. Patients were excluded for solitary kidney or if a ureteral access sheath was used without pre-stenting. Data was collected prospectively via ReSKU (The Registry for Stones of the Kidney and Ureter) and was retrospectively reviewed. Analyzed outcomes included event rates of patient phone calls, unplanned emergency department or clinic visits, and unplanned operation. Bivariate differences in categorical and continuous variables between stented and unstented groups were examined using the Pearson's chi-squared and the student's t-test, respectively.

RESULT(S): A total of 344 URS procedures were performed and 134/344 (39.0%) patients met inclusion criteria for ureteral stent omission. Of these candidates, 90 subjects (67%) had their stents omitted, while 44 (33%) deviated from the stent-less protocol. Deviation from the stent protocol did not vary by institution (20% vs. 37.5% vs. 60% vs. 50% vs. 40%; $P > 0.05$). The total event rate (phone call, ED, OR, or clinic) was 19.1% for subjects with a stent versus 20.0% for

subjects with a stent omitted ($P>0.05$); with the majority (30.7%) of these events being phone calls.

CONCLUSION(S): In a multi-center prospectively collected study involving 344 individuals undergoing URS for nephrolithiasis, there was a similar proportion of stented and unstented subjects who called, presented to the ED or clinic, or required a return trip to the operating room following uncomplicated ureteroscopy for stone disease. Our findings suggest that ureteral stents can be safely omitted in properly selected adult patients.

Status

CONFERENCE ABSTRACT

Institution

(Fisher, Friedlander, Bechis, Sur) San DiegoCAUnited States (Cobb) NorfolkVAUnited States

(Bayne, Chi, Stoller) San FranciscoCAUnited States

(Chang) Santa ClaraCAUnited States

(Duty) PortlandORUnited States

(Harper, Metzler, Sorensen) SeattleWAUnited States

(Tzou) TucsonAZUnited States

Publisher

Lippincott Williams and Wilkins

Year of Publication

2020

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240.

Predictors of stone free rate following aggressive ureteroscopy.

Johnson B., Canvasser N., Steinberg R., Antonelli J., Pearle M.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e25-e26), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632061932

INTRODUCTION AND OBJECTIVE: Ureteroscopy (URS) and aggressive stone basketing for upper tract stones yields stone free rates (SFR) of only ~50% by computed tomography (CT). We used a prospective cohort of patients who underwent URS at a high-volume stone center and were imaged with CT at 6-8 weeks to identify factors predictive of a stone free state. Our cohort of patients with residual stone fragments is extremely inclusive because CT was used to determine SFR.

METHOD(S): We prospectively evaluated 168 patients (210 renal units) undergoing URS for renal and ureteral calculi between Dec 2015 and Feb 2017 by one of two fellowship-trained endourologists. A CT was obtained routinely at 6-8 weeks post-operatively. Patient demographics, stone characteristics and operative parameters were assessed prospectively. A univariable binary regression model was used to determine odds ratio of SFR. Statistically significant variables in the univariable regression were entered in a multivariable model to determine the independent contribution of each factor.

RESULT(S): Of the 210 renal units in 168 patients, 115 units (55%) were stone free on post-operative CT. Median age of the cohort was 59 (IQR 50-66) years. Bilateral procedures were performed in 84/ 210 (40%) of cases. A mean of 44 +/- 37 ureteroscope passes were made up and down the ureter for each renal unit, and mean operative time was 118 +/- 50 min. Mean aggregate stone size was 16 +/- 13 mm and there was a median of 2 stones per kidney (IQR 1-4). Univariable regression analysis demonstrated lower SFRs with increasing age, stone number, aggregate stone size, upper pole calyx location, lower pole calyx location, primarily calcium oxalate dihydrate (CaOxD) stone composition, and shorter operative time. Following multivariable analysis, only increasing stone number and CaOxD primary composition predicated lower stone free rate (OR 0.74, 95% CI 0.623 - 0.878, p = 0.001 and OR 0.229, 95% CI 0.059 - 0.878, p = 0.032, for stone number and CaOxD, respectively). See table.

CONCLUSION(S): Greater number of stones and primarily CaOxD stone composition predict lower SFR after ureteroscopy and stone basketing, possibly because softer stones may generate smaller and more difficult-to-retrieve stone fragments and more stones may lead to missed stones/fragments. Extra diligence or an alternative treatment modality in treating these patients may be warranted. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Johnson, Steinberg, Antonelli, Pearle) DallasTXUnited States (Canvasser) DavisCAUnited States

Publisher

Lippincott Williams and Wilkins

Year of Publication

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241.

Analysis of disposable equipment utilization on the cost of ureteroscopy: impact of technique and training.

Parikh K., Pak R.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e330-e331), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632063152

INTRODUCTION AND OBJECTIVE: Ureteroscopy (URS) for the management of kidney and ureteral stones utilizes a variety of disposables which can account for a significant portion of the cost of care. We sought to perform a utilization analysis to determine factors which impact the cost of performing URS.

METHOD(S): In a single-institution, retrospective study, an analysis of disposable utilization was performed on all kidney and ureteral stone cases managed with URS and laser lithotripsy between July 1, 2016 and June 30, 2017. These cases were performed by six different surgeons, two of whom are fellowship trained in endourology. Disposable equipment was broken down into the following categories: baskets, ureteral dilators and balloons, laser fibers, access sheaths,

stents, ureteral catheters, wires, and miscellaneous. Miscellaneous items included gloves, drapes, gowns, syringes, foleys, needles, bowls, and other items under \$40. Disposable flexible ureteroscopes were excluded from this cost analysis.

RESULT(S): Among the 269 cases included in the analysis, the average cost of disposables used per case was \$976.96. Endourology Society fellowship trained physicians performed 127 (47.2%) of these cases. Average cost of disposables per case performed by a fellowship trained urologist was \$968.54 compared to \$984.48 for non-fellowship trained urologists. Figure 1 displays the breakdown of the disposables contributing to overall costs per case. Figure 2 displays the individual surgeon costs based on technique and training. Surgeon A, with fellowship training, and a preferred technique of dusting was the most cost effective overall with an average savings of \$124.02 per case. These savings were realized in the low utilization of baskets and sheaths. Although Surgeon F was similar to Surgeon A in technique, the costs were skewed by expensive laser fiber usage.

CONCLUSION(S): Technique and training can impact utilization of disposables determining the costs of ureteroscopy. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Parikh, Pak) JacksonvilleFLUnited States

Publisher

Lippincott Williams and Wilkins

Year of Publication

2020

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242.

Efficacy of super-pulse thulium fiber laser in endoscopic management of lower ureteric stones in Indian population: A single center study.

Mistry T., Pahwa M., Tyagi V.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e329), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632063128

INTRODUCTION AND OBJECTIVE: Super-Pulse Thulium fiber laser is a novel intracorporeal lithotripter used for management of urinary tract stones. It has several advantages over Holmium-YAG laser including small fibers, lower energy per pulse (up to 0.025 J), and higher maximal pulse repetition rate (up to 2000 Hz). The present study was undertaken to evaluate the efficacy of Super-Pulse Thulium fiber laser in management of lower ureteric stones in Indian population.

METHOD(S): Total 44 patients (age 18 to 60) with lower ureteric stones were included in the study. All patients had undergone semi-rigid ureteroscopy. Super-Pulse Thulium fiber laser with 200µm fiber was utilized. Settings for fragmentation were kept at 2-6J, 5-10Hz, for dusting at 0.2 J to 1J, 10-30Hz & for fine dusting at 0.025 to 0.1 J, 100-300Hz. Clearance of the stone, fragmentation time, stone retropulsion & complications were observed.

RESULT(S): Out of total 44 patients, the mean age was 40 years (range 19-60). 24 were males & 20 were females. The mean size of the stones was 8.3mm (range 6 to 11mm). The mean HU density of the stones was 842.27 (range 470-1210). The mean fragmentation time was 14min (9min to 23min). Complete clearance was achieved in all cases. There were four cases of sepsis which were managed with intravenous antibiotics without any sequel. No intra-operative complication was noted. There was no incidence of stone retropulsion.

CONCLUSION(S): Super-Pulse Thulium fiber laser lithotripsy is promising in endoscopic management of lower ureteric stones. A large randomized controlled study would be required for its extrapolation. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Mistry, Pahwa, Tyagi) New Delhi India

Publisher

Lippincott Williams and Wilkins

Year of Publication

2020

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243.

The superpulse thulium fiber laser in the management of giant distal ureter stone.

Martov A., Ergakov D., Baykov N., Guseynov M., Andronov A., Dutov S.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e390), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632062989

INTRODUCTION AND OBJECTIVE: Intracorporeal ureteroscopic management is currently standard approach when the stones are multiple, impacted, located in the distal ureter and they are larger than 1 cm in size. Holmium:YAG laser is used for the procedure. New Superpulse Thulium Fiber Laser (SPTFL) may offer an advantageous alternative. The aim of this video is to highlight how very large distal ureteral stone could be managed with the emerging SPTFL technology.

METHOD(S): A 57 y.o. male suffering from left colic was admitted to our hospital. CT scan revealed two distal ureteral calculi 2.75 x 1.16cm and 7.54 mm with a density 1300 HU. They were X-Ray positive and appeared as one on the plain X-ray film. The rigid ureteroscopy approach has been chosen. After the introduction of the scope into the orifice we could pass a safety wire into the kidney. A 400 mcm laser fiber has been used. The initial laser settings were 1J, 10Hz for fragmentation and 0.15J, 200 Hz for dusting, eventually switching to 1J, 20Hz and 0.2J, 200Hz, respectively. No heating of the irrigation water at outflow has been detected. The rigid forceps have been used to remove large fragments. The hand pump-assisted gravity irrigation system has been used. As the continuity of the ureteral lumen was established, basket has been used as an anti-migration device. No perforation occurred. The operation was followed with JJ-stenting for 2 weeks.

RESULT(S): The stone management time was 29 min, while the total operation time was 37 min. The follow up examination after stent removal revealed no residuals and no renal pelvis dilation. This case can be placed in a more general context of our clinical experience with SPTFL. Up to now, we have treated 182 patients with total of 194 stones with all possible locations with size up to 29 mm. On average, 1- month SFR based on the CT scan is 98.5 %. No perforation or bleeding occurred in this group of patients. In 12 cases, short-term fever (C-DII) was observed. CONCLUSION(S): The new SPTFL laser is a valuable tool for intracorporeal stone management. It offers high efficacy/risks ratio and should be included in modern urologist's armamentarium.

Status

CONFERENCE ABSTRACT

Institution

(Martov, Ergakov, Baykov, Guseynov, Andronov, Dutov) Moscow Russian Federation

Publisher

Lippincott Williams and Wilkins

Year of Publication

2020

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244.

"virtualbasket" ureteroscopic holmium laser lithotripsy: Intraoperative and early postoperative outcomes.

Bozzini G., Besana U., Calori A., Antonelli D., Chisena S.A., Maltagliati M., Marcangeli P., Autieri G., Sighinolfi C., Rocco B., Buizza C.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association.

Washington, DC United States. 203(Supplement 4) (pp e464), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632059198

INTRODUCTION AND OBJECTIVE: "VirtualBasket" technique is a result in pulse modulation during holmium laser lithotripsy in which the laser emits part of the energy to create an initial bubble, and the remaining energy is discharged once the bubble is formed so that it can pass through the already formed vapor channel. The aim of this study is to outline the outcomes of the Virtual Basket technology in ureteral and renal stones.

METHOD(S): A prospective trial was conducted for patients undergoing holmium laser lithotripsy for ureteral and renal stones. Patients were randomly assigned to have holmium laser lithotripsy with or without Virtual Basket technology in ureteric or renal cases (4 groups). All procedures were performed by four experienced urologists. Quanta Cyber Ho 100W generator with 365 μ m was used for all cases in the ureter and 272 μ m was used for all cases in the renal pelvis. Demographic data, stone parameters, perioperative complications and success rates were compared. The degree of stone retropulsion was graded on a Likert scale from zero-no retropulsion to 3-maximum retropulsion.

RESULT(S): A total of 160 patients were included in the study (40 per each group). All the groups were comparable in terms of age, and pre-operative stone size (ureter: 1.2 vs. 1.1 cm, $p>0.05$ renal pelvis 1.4 vs. 1.5 cm $p>0.05$). When compared with the Regular mode, Virtual Basket Technology was associated with significantly lower fragmentation time (ureter: 20.4 vs. 16.1 min, $p<0.05$; renal pelvis: 28.7 vs. 19.8 min, $p<0.05$) and total procedural time (49 vs. 35.7 min, $p<0.05$; 67.1 vs. 52.4 min, $p<0.05$). However, there were no significant differences in terms of total energy applied to the stones (9.9 vs. 10.7 KJ, $p>0.05$; 13.5 vs. 16.1 KJ, $p>0.05$). Virtual Basket technology was associated with significantly less retropulsion. There was no significant difference between both modes in terms of intraoperative complications. The success rate at the end of 1 month was comparable between both groups (92.3 vs. 88.3%, $p>0.05$; 82.7 vs. 85.9%, $p>0.05$).

CONCLUSION(S): Virtual Basket technology is associated with significantly lower fragmentation and procedural times. The reduced fragmentation time is a result of the significantly lower retropulsion of the stones during laser lithotripsy; thus improving stone fragmentation efficiency.

Status

CONFERENCE ABSTRACT

Institution

(Bozzini, Besana, Calori, Antonelli, Chisena, Maltagliati, Marcangeli, Autieri, Buizza) Busto Arsizio
VAItaly (Sighinolfi, Rocco) Modenaitaly

Publisher

Lippincott Williams and Wilkins

Year of Publication

2020

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245.

Robotic ileal neoureter and psoas hitch for iatrogenic complete ureteral avulsion: Our 2 cases experience.

Balzarini F., Pacchetti A., Caviglia A., Barabino E., Olivero A., Dotta F., Valcalda M., Camerini G., Terrone C.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e472), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632060174

INTRODUCTION AND OBJECTIVE: Complete ureteral avulsion during ureteroscopy (URS) is a rare but catastrophic complication. The paucity of literature on this complication and its management may lead urologists to trouble when they plan a repair procedure. A possible therapeutic option can be represented by ileal interposition. Less than 20 cases of totally intracorporeal robotic ileal neoureter are reported in literature. The aim of the video is to show how two cases of complete ureteral avulsion were managed at our centre with an intracorporeal robotic approach.

METHOD(S): Case A. 47 years old male patient underwent a right semirigid URS and laser treatment for a 8mm stone below ureteropelvic junction (UPJ). Complete right ureteral avulsion occurred during the attempt of retrieving a stone fragment with a basket. A nephrostomy tube was immediately placed to control the urinary leakage. After discussion with the patient about the possible solutions, a robot-assisted ileal ureter was chosen. Patient and trocar positioning: 60degree modified flank position; four 8-mm robotic trocars on the pararectal line, periumbilical

and two assistant robotic trocars (5 and 12mm), along the xiphopubic line. Da Vinci Xi robot docking. Case B. 68 years old male patient with 5mm stone at the level of the UPJ underwent flexible URS. Complete avulsion of the left ureter occurred during the procedure. A nephrostomy tube was immediately placed. After careful counseling, the indication of replacement of the ureter with the ileum was given. Patient and trocar positioning were the same as described above.

RESULT(S): Outcomes: nephrostomy removal after 7 days, catheter removal after 8 days, discharge after 10 days and stent removal after 30 days in both cases. One-month cystogram: reflux in the neoureter for case A (only at high bladder filling). Follow-up blood tests: normal renal function and pH. Urine culture: negative. 6-months CT scan: no hydronephrosis, minimal delayed right renal contrast media elimination for case A. Technical aspects: 3 robot dockings for case B compared to 1 docking for case A; mesenteric rotation for case A to achieve an isoperistaltic neoureter; presence of the sigmoid colon for case B.

CONCLUSION(S): In our experience, complete intracorporeal robotic ileal interposition is a feasible option for bridging full length ureteral defects, with low complication rates. These cases are so rare that it is very difficult to standardize the procedure. Patient's age, comorbidities, ipsilateral and contralateral kidney function, patient's expectations and surgeon experience can affect the treatment choice.

Status

CONFERENCE ABSTRACT

Institution

(Balzarini, Pacchetti, Caviglia, Barabino, Olivero, Dotta, Valcalda, Camerini, Terrone) GenoaItaly

Publisher

Lippincott Williams and Wilkins

Year of Publication

2020

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Flexible ureteroscopy for lower pole renal stones: Novel superpulse thulium (TM) fiber laser lithotripsy. First clinical results.

Korolev D., Klimov R., Tsarichenko D., Enikeev M., Dymov A., Ali S., Akopyan G., Lekarev V., Taratkin M., Rapoport L., Enikeev D., Glybochko P.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e713), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632061331

INTRODUCTION AND OBJECTIVE: The SuperPulse Thulium (Tm) fiber laser (wavelength of 1.94 μm) has been recently introduced as a directed-energy source for urology. Preclinical studies have shown a significant potential of the SuperPulse Tm fiber laser (SP TFL) for lithotripsy. However, clinical reports of using SP TFL to treat urolithiasis are still few and limited. Of special interest are challenging cases, e.g., lower pole stones, when extreme deflection of the instrument is required. To evaluate the effectiveness of the SuperPulse Tm fiber laser in the management of lower pole small calyceal stones during flexible ureteroscopy (F-URS).

METHOD(S): The SuperPulse Tm fiber laser device (Urolase 2, IRE Polus, Fryazino, Russia) has been cleared for clinical use by the Ministry of Health of Russian Federation. Study protocol has been approved by the Ethical Review Committee. Between January 2018 and February 2019, 130 patients with kidney stones have undergone Thulium fiber laser lithotripsy during F-URS. We retrospectively analyzed 15 of this patients with a single radiopaque lower pole calculus that were included in the present study. Stone size, stone density, lithotripsy time (from the first to last footswitch press) and "lasering" (laser emission) time were measured. The SP TFL was used for stone disintegration with different settings in dusting and fragmentation modes (0.1 - 4J, 7-300Hz, 6-40W) via a fiber with a 200-mm core diameter. Low dose CT scanning was performed on POD 90 to assess SFR.

RESULT(S): Stone size ranged from 4 to 17 mm and stone density varied from 350 to 1459 HU. The average lithotripsy time was 12 min (3-30 min). The average "lasering" time was 1.3 min (0.4-2.5 min) and the mean hospital stay was 1.1 $\pm$ 0.3 days. In all cases we reached the lower pole stone containing calyx with a laser fiber. The complication rates were evaluated by using the Clavien-Dindo grading system and did not exceed GII. The overall postoperative complication rate was 26.6% (GI 20%; GII 6.6%). SFR on POD 90 was achieved in 86.6% of cases.

CONCLUSION(S): F-URS with SuperPulse Tm fiber laser is safe and effective option in the management of lower pole small calyceal stones. The possibility of using small laser fibers gives

better instrument deflection which make possible to reach lower pole calyceal stones even with acute lower pole infundibulopelvic angle (IPA).

Status

CONFERENCE ABSTRACT

Institution

(Korolev, Klimov, Tsarichenko, Enikeev, Dymov, Ali, Akopyan, Lekarev, Taratkin, Rapoport, Enikeev, Glybochko) MoscowRussian Federation

Publisher

Lippincott Williams and Wilkins

Year of Publication

2020

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247.

Flexible ureteroscopy for kidney stones with novel superpulse thulium (TM) fiber laser-safety and efficacy clinical study.

Korolev D., Klimov R., Tsarichenko D., Enikeev M., Dymov A., Ali S., Akopyan G., Lekarev V., Taratkin M., Rapoport L., Enikeev D., Glybochko P.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e713), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632061317

INTRODUCTION AND OBJECTIVE: The SuperPulse Thulium (Tm) fiber laser (wavelength of 1.94 μm) has been recently introduced as a directed-energy source for urology. Preclinical studies have shown a significant potential of the SuperPulse Tm fiber laser (SP TFL) for

lithotripsy. However, clinical reports of using SP TFL to treat urolithiasis are still few and limited. This study aimed to assess the efficacy and safety of RIRS with Tm fiber laser lithotripsy for kidney stones.

METHOD(S): The SuperPulse Tm fiber laser device (Urolase 2, IRE Polus, Fryazino, Russia) has been cleared for clinical use by the Ministry of Health of Russian Federation. The study protocol has been approved by the Ethical Review Committee. Between January 2018 and February 2019, 130 patients with kidney stones have undergone SP TFL lithotripsy during RIRS. Stone size, stone density, lithotripsy time (from the first to the last footswitch press), and "lasering" (laser emission) time were measured. The SuperPulse Tm fiber laser was used for stone disintegration with different settings in dusting and fragmentation modes (0.1 - 4J, 7-300Hz, 6-40W) via a fiber with a 200- mm core diameter. Low dose CT scanning was performed on POD 90 to assess SFR.

RESULT(S): Stone size ranged from 4 to 36 mm and stone density varied from 250 to 1610 HU. The average lithotripsy time was 25.9 min (3-70 min). The average "lasering" time was 5.4 min (0.4-26.5 min) and the mean hospital stay was 1.1 +/- 0.3 days. The complication rates were evaluated using the Clavien-Dindo grading system and did not exceed GII. The overall postoperative complication rate was 7.6% (GI 6.1%; GII 1.5%). SFR on POD 90 was achieved in 88.4% of cases.

CONCLUSION(S): RIRS with SuperPulse Tm fiber laser is a safe and effective option for kidney stones management. Ability to control SP TFL settings in a wide range allows to disintegrate stones with varying diameters (up to 36 mm) and density in both fragmentation and dusting modes during a single treatment session.

Status

CONFERENCE ABSTRACT

Institution

(Korolev, Klimov, Tsarichenko, Enikeev, Dymov, Ali, Akopyan, Lekarev, Taratkin, Rapoport, Enikeev, Glybochko) MoscowRussian Federation

Publisher

Lippincott Williams and Wilkins

Year of Publication

2020

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248.

Ureteroscopic performance of thulium fiber laser (SOLTIVE Premium Super Pulsed Laser™) for the treatment of urolithiasis: Results of the first case series in the United States.

Carrera R., Randall J., Garcia-Gil M., Knudsen B., Chew B., Thompson J., Humphreys M., Molina W.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e712-e713), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632061315

INTRODUCTION AND OBJECTIVE: Ureteroscopy with laser lithotripsy is commonly used in the treatment of urolithiasis. Recent in vitro studies demonstrate efficacy of the Thulium Fiber Laser (SOLTIVE Premium Super Pulsed Laser™) during lithotripsy and a safety profile comparable to Ho:YAG systems. SOLTIVE has the advantages of smaller fiber compatibility and higher frequency dusting settings. In this study we report the first case series of ureterorenoscopy in the United States using the Thulium Fiber Laser for the treatment of upper urinary tract stones.

METHOD(S): After Institutional Review Board approval, a multicentric retrospective chart review of patients treated with the Thulium Fiber Laser from 10/8/19 to 10/24/19 was conducted. Basic demographic information, pre-operative, and peri-operative data were recorded.

RESULT(S): 25 patients were included with a median age of 53 years (range 27-82). 39 stones were treated including 12 within the ureter, 13 in the lower pole, 13 in mid or upper poles, and 1 staghorn calculus. Median diameter for the largest stone in each patient was 9 mm (range 4-50 mm) and median Hounsfield units were 900 (range 480-1750). Both the 150 and 200 nm fibers were used with a mean laser time of 12 minutes and mean total energy of 17.1 J. Dusting technique was commonly used with pulse frequencies up to 500 Hz (table 1). Median operative time was 52 minutes. Calcium oxalate dihydrate was the most common stone composition, followed by calcium phosphate and calcium oxalate monohydrate. Complications were limited to two endoscopic grade 1 ureteral injuries related to ureteral access sheath placement, one case of renal collecting system bleeding that was adequately managed with laser coagulation settings, and one case of postoperative sepsis. All but 3 patients were discharged on their day of surgery.

CONCLUSION(S): This initial case series in the United States of the Thulium Fiber Laser is promising for the treatment of urolithiasis. Sub-200 nm fibers and dusting settings up to 500 Hz were utilized successfully. No specific complications related to use of the laser were seen. Follow up with stone-free rates, larger multicentric case series, and randomized clinical trials are needed to demonstrate the efficacy of this laser. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Carrera, Randall, Thompson, Molina) Kansas CityKSUnited States (Garcia-Gil, Knudsen)

ColumbusOHUnited States

(Chew) VancouverCanada

(Humphreys) PhoenixAZUnited States

Publisher

Lippincott Williams and Wilkins

Year of Publication

2020

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249.

Comparison of stone-related events after ureteroscopy in patients with and without residual fragments.

Steinberg R.L., Johnson B.A., Garbens A., Sorokin I., Crivelli J., Akhtar A., Ganesan V., Antonelli J., Pearle M.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association.

Washington, DC United States. 203(Supplement 4) (pp e712), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632061301

INTRODUCTION AND OBJECTIVE: We previously showed that nearly half the patients left with residual fragments (RFs) after URS experience a subsequent stone-related event (SE). We aimed to determine if a stone free state after URS is associated with a fewer SEs than those left with residual fragments.

METHOD(S): After undergoing URS for renal and ureteral calculi between December 2015 and February 2017 167 patients (209 renal units, RUs) were prospectively enrolled. CT was obtained 6-8 weeks post-operatively. Patients were evaluated at subsequent office visits and/or contacted by phone to determine if a stone event attributable to the treated RU occurred. A stone event (SE) was defined as spontaneous stone passage, symptoms requiring emergency department (ED) visit, surgical intervention, or stone growth. Only patients with at least 12 months of follow-up were included for analysis. Kaplan Meier analysis, Chi-squared analysis, log rank test, and logistic regression were used to assess outcomes.

RESULT(S): Among the study group, 123 patients and 152 RUs met study criteria, including 57% (87 RUs) with residual fragments and 43% (65 RUs) who were rendered stone-free on post URS CT. Median overall follow-up was 29 months (IQR 22-34). The mean number of RFs per patient was 2.1 +/- 1.5 and mean largest fragment size was 3.7 +/- 2.0 mm. SE occurred in 47% (41/87) of RUs with RFs and 14% (9/ 65) of those that were stone free ($p<0.001$). Median time to SE was 33 months for those with RFs (CI 23-43) and 45 months in those who were stone free (CI 40-50). The stone event-free survival was 68% in those with RFs and 98% in those stone free at 24 months ($p<0.001$) (Figure 1). Multivariate regression demonstrated stone-free status as a predictor of a stone event (OR 4.98, $p<0.001$), although residual fragment size and number were not.

CONCLUSION(S): Attaining a stone-free state after URS with basket extraction reduces the rate of SEs in patients undergoing ureteroscopy. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Steinberg, Johnson, Garbens, Sorokin, Crivelli, Akhtar, Ganesan, Antonelli, Pearle)

DallasTXUnited States

Publisher

Lippincott Williams and Wilkins

Year of Publication

2020

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250.

Moses laser technology for fragmentation is not associated with subjective or objective outcomes in ureteroscopic laser lithotripsy with basket extraction.

Agarwal D.K., Large T., Stoughton C.L., Stephens C.A., Rivera M.E., Krambeck A.E.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e1044), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632060594

INTRODUCTION AND OBJECTIVE: The MOSES © (Lumenis Inc) laser system is a proprietary technology which augments the holmium laser pulse and reduces stone retropulsion during laser lithotripsy. To date, most studies demonstrating benefits with the MOSES system have used stone dusting techniques. We sought to determine if the MOSES laser system is beneficial during ureteroscopic stone fragmentation and basket extraction.

METHOD(S): We performed a prospective, double-blinded study in which patients undergoing ureteroscopic laser lithotripsy with basket extraction of kidney or ureteral stones were recruited. After meeting inclusion criteria, patients were randomized to either MOSES or non- MOSES settings. The MOSES 200 micron fiber was utilized for all cases, but the surgeon was unaware of the MOSES technology option was engaged or not. The laser was set on 0.8 J an 8 Hz which is our historic laser fragmentation settings. At the end of the case, the operating surgeon completed a survey regarding perceived stone motion, retropulsion, and fragmentation (on a scale of 1-10), as well as his/her opinion if MOSES was being utilized.

RESULT(S): A total of 31 patients were prospectively included, with 14 in the MOSES group. Median age of the cohort was 56 years (IQR 39-63), BMI 33.8 (29.7-40.7), and 58% were female. Median stone size was 8.3 mm (IQR 6-10) and hounsfield units were 918 (537-1126). There were no differences between baseline characteristics in the MOSES and non-MOSES groups.

Operative and surgeon data can be found in Table 1. There were no statistically significant differences in OR time, laser time/energy, or surgeon perceived subjective scores. The surgeon was able to accurately guess if MOSES was being utilized in 71% of cases. There were no operative complications. Postoperative imaging (KUB and renal US) performed at six weeks was available for 18 patients with 100% of non-MOSES and 55% of MOSES patients being stone free (p=0.08).

CONCLUSION(S): We identified no objective or subjective differences when MOSES technology is blindly utilized during ureteroscopic laser lithotripsy with basket extraction. However, in most cases the surgeon can appropriately determine when the system is being utilized. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Agarwal, Large, Stoughton, Stephens, Rivera, Krambeck) IndianapolisINUnited States

Publisher

Lippincott Williams and Wilkins

Year of Publication

2020

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251.

Association between ureteric stent dwell time and urinary tract infection.

Zhuo K., Wang N., Kenneth V., Lazzaro E., Justin V., Rasiah K., Wines M., Chalasani V., Chung A.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e1054), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632059561

INTRODUCTION AND OBJECTIVE: Urosepsis following ureteropyeloscopy laser lithotripsy can be associated with significant morbidity and sometimes even death. Urinary foreign bodies can be a risk factor for urinary tract infection (UTI). A number of patients undergoing ureteropyeloscopy laser lithotripsy have ureteric stents in situ. This study aims to investigate possible association between ureteric stent dwell time and the presence of UTI between staged procedures of endoscopic ureteric stone treatment (ureteropyeloscopy).

METHOD(S): A retrospective review of all adult patients who were treated under 7 urologists at a single institution (Royal North Shore Hospital) by ureteropyeloscopy laser lithotripsy or basket removal of upper tract urolithiasis, who already had been presented, was conducted from 01 January 2018 - 30 June 2019. Patient demographic data, pre-operative urine culture results, ureteric stent dwell time, intraoperative complications and post-operative complications were recorded. Data was analysed using IBM SPSS V24. Descriptive analyses were performed. Normally distributed data was analysed using independent t-tests and ANOVA; categorical variables were analysed using Chi-square and Fisher's exact tests. P-values < 0.05 were considered statistically significant.

RESULT(S): 172 patients (mean age 56.1 years, range 24.1- 93.9) were identified for this study. Of these patients, 23 patients (13.4%) underwent their secondary procedure with a stent dwell time of 1 month or less (Group A); whilst 149 patients (86.6%) underwent ureteropyeloscopy stone treatment with a stent dwell time greater than 1 month (Group B). Overall, 23.3% (40/172) patients booked for ureteropyeloscopy stone treatment had positive pre-operative urine culture results. Among Group A 4.3% patients had positive preoperative urine culture results whereas among Group B 26.2% patients had positive preoperative urine culture results. There was a statistically significant preoperative infection rate between the two groups ($p < 0.05$).

CONCLUSION(S): In conclusion, longer duration of stent dwell time prior to secondary ureteroscopic treatment for upper tract stones is significantly associated with increased rate of positive pre-operative urine culture. Preoperative UTIs are a known risk factor for serious peri-operative complications such as urosepsis and can lead to subsequent morbidity and even mortality. Therefore, patients who have been pre-stented and are waitlisted for subsequent ureteropyeloscopy laser lithotripsy should be appropriately triaged to schedule their secondary procedure within an appropriate timeframe to help avoid possible serious negative outcomes.

Status

CONFERENCE ABSTRACT

Institution

(Zhuo, Wang, Kenneth, Lazzaro, Justin, Rasiah, Wines, Chalasani, Chung) St Leonards Australia

Publisher

Lippincott Williams and Wilkins

Year of Publication

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252.

Stone size on endoscopic view as a predictor of successful stone retrieval during flexible ureteroscopy.

Randall J., Carrera R., Duchene D., Thurmon K., Neff D., Molina W., Fletcher P.

Embase

Journal of Urology. Conference: 2020 Annual Meeting of the American Urological Association. Washington, DC United States. 203(Supplement 4) (pp e1053-e1054), 2020. Date of Publication: April 2020.

[Conference Abstract]

AN: 632059502

INTRODUCTION AND OBJECTIVE: Basketing plays an important role during flexible ureteroscopy. However, this step can be time consuming, especially when fragments are too large to pass through the ureteral access sheath and need to be replaced for further lithotripsy. To date there are no objective parameters for predicting successful stone removal through an access sheath. In this study we aim to present the optimal endoscopic stone size that predicts successful basketing through the access sheath during flexible ureteroscopy.

METHOD(S): A tipless nitinol stone retrieval basket was placed through the ureteroscope's working channel and maintained at a distance of 5 mm from its tip. The ureteroscope (Flex-Xc, Karl Storz; Flex- X2s, Karl Storz; LithoVue, Boston Scientific; or URF-P6R, Olympus) was

advanced through access sheaths of different sizes (10-12 Fr, 11-13 Fr, 12-14 Fr, or 13-15 Fr) and an attempt was made to retrieve artificial stones of various sizes (2 mm³, 2.5 mm³, 3 mm³, 3.5 mm³, 4 mm³, or 5 mm³). Successful retrieval rates were documented, and both external and endoscopic views were recorded. Each stone's maximum diameter on endoscopic view was measured on screen using a digital caliper and compared to the total screen diameter or width. RESULT(S): Basketing of stones up to 2.5 mm³ was successful using all access sheaths. In those cases, the on-screen stone size divided by total screen size for each device was 0.38 (Flex-Xc), 0.30 (Flex-X2s), 0.32 (LithoVue), and 0.34 (URF-P6R). When 3 mm³ stones were used, only the 12-14 Fr and 13-15 Fr sheaths allowed for successful basketing. Stones that were 3.5 mm³ and larger did not successfully pass through any of the access sheaths. Karl Storz Flex-Xc presented the largest on-screen stone sizes: 0.38 (2.5 mm³) and 0.51 (3 mm³) relative to the total screen size.

CONCLUSION(S): Successful stone retrieval can be predicted by estimating the stone's size on the screen, and the choice of flexible ureteroscope or access sheath can influence this prediction. When maintaining the basket at 5 mm from the tip of the ureteroscope, stone fragments of approximately one third the size of the screen passed successfully in all cases. When a Flex-Xc is used, stones with a larger on-screen size, up to half of the screen, can pass successfully through 12-14 Fr and 13-15 Fr access sheaths. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Randall, Carrera, Duchene, Thurmon, Neff, Molina, Fletcher) Kansas CityKSUnited States

Publisher

Lippincott Williams and Wilkins

Year of Publication

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RIRS for lower pole small renal stones: Novel SuperPulse Thulium (Tm) fiber laser lithotripsy. First clinical results.

Korolev D., Klimov R., Tsarichenko D., Enikeev M., Dymov A., Ali S., Lekarev V., Akopyan G., Taratkin M., Rapoport L., Enikeev D., Glybochko P.

Embase

European Urology Open Science. Conference: 7th Meeting of the EAU Section of Uro-Technology in conjunction with the German Working Groups of Endourology, Laparoscopy and Robotic Assisted Surgery. Leipzig Germany. 19(Supplement 1) (pp e13), 2020. Date of Publication: January 2020.

[Conference Abstract]

AN: 2004592388

Introduction & Objectives: The SuperPulse Thulium (Tm) fiber laser (IRE Polus, Russia) (wavelength of 1.94 μm) is a next generation laser technology that has a significant potential for urinary stones treatment. But still a small number of clinical studies does not allow to fully reveal the capabilities of this laser in the management of renal stones. To evaluate the effectiveness of the SuperPulse Tm fiber laser in the management of lower pole small calyceal stones during flexible ureteroscopy (F-URS).

Material(s) and Method(s): The SuperPulse Tm fiber laser device has been cleared for clinical use by the Ministry of Health of Russian Federation and the protocol has been approved by the institutional Ethical Review committee. Between January 2018 and February 2019, 130 patients with kidney stones have undergone Thulium fiber laser lithotripsy during F-URS. We retrospectively analyzed 15 of this patients with a single radiopaque lower pole calculus which were included in the present study. Stone size, its density, lithotripsy time (from the first to last pedal press) and "lasering" (laser emission) time were measured. The SuperPulse Tm fiber laser was used for stone disintegration with different settings in dusting and fragmentation modes (0.1 - 4J, 7-300Hz, 6-40W) via a fiber with a 200- μm core diameter. Low dose CT scanning was performed on POD 90 to assess SFR.

Result(s): Stone size ranged from 4 to 17 mm and stone density varied from 350 to 1459 HU. The average lithotripsy time was 12 min (3-30 min). The average "lasering" time was 1.3min (0.4-2.5 min) and the mean hospital stay was 1.1 $\pm$ 0.3 days. In all cases we reached the lower pole stone containing calyx with a laser fiber. The complication rates were evaluated by using the Clavien-Dindo grading system and did not exceed GII. The overall postoperative complication rate was 26.6% (GI 20%; GII 6.6%). SFR on POD 90 was achieved in 86.6% of cases.

Conclusion(s): F-URS with SuperPulse Tm fiber laser is safe and effective option in the management of lower pole small calyceal stones. The possibility of using small laser fibers gives

better instrument deflection which make possible to reach lower pole calyceal stones even with acute lower pole infundibulopelvic angle (IPA).

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Status

CONFERENCE ABSTRACT

Institution

(Korolev, Klimov, Tsarichenko, Enikeev, Dymov, Ali, Lekarev, Akopyan, Taratkin, Rapoport, Enikeev, Glybochko) Sechenov University, Dept. of Urology and Reproductive Health, Moscow, Russian Federation

Publisher

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254.

Association between ureteric stent dwell time and urinary tract infection.

Zhuo K., Wang N., Vaux K., Lazzaro E., Vass J., Rasiah K., Wines M., Chalasani V., Chung A.

Embase

European Urology Open Science. Conference: EAU20 Virtual Congress and Theme Week.

Virtual, Online. 19(Supplement 2) (pp e1203), 2020. Date of Publication: July 2020.

[Conference Abstract]

AN: 2006105603

Introduction & Objectives: Urosepsis following ureteropyeloscopy laser lithotripsy can be associated with significant morbidity and sometimes even death. Urinary foreign bodies can be a risk factor for urinary tract infection (UTI). A number of patients undergoing ureteropyeloscopy laser lithotripsy have ureteric stents in situ. This study aims to investigate possible association

between ureteric stent dwell time and the presence of UTI between staged procedures of endoscopic ureteric stone treatment (ureteropyeloscopy).

Material(s) and Method(s): A retrospective review of all adult patients who were treated under 7 urologists at a single institution (Royal North Shore Hospital) by ureteropyeloscopy laser lithotripsy or basket removal of upper tract urolithiasis, who already had been presented, was conducted from 01 January 2018 - 30 June 2019. Patient demographic data, pre-operative urine culture results, ureteric stent dwell time, intra-operative complications and post-operative complications were recorded. Data was analysed using IBM SPSS V24. Descriptive analyses were performed. Normally distributed data was analysed using independent t-tests and ANOVA; categorical variables were analysed using Chi-square and Fisher's exact tests. P-values <0.05 were considered statistically significant.

Result(s): 172 patients (mean age 56.1 years, range 24.1-93.9) were identified for this study. Of these patients, 23 patients (13.4%) underwent their secondary procedure with a stent dwell time of 1 month or less (Group A); whilst 149 patients (86.6%) underwent ureteropyeloscopy stone treatment with a stent dwell time greater than 1 month (Group B). Overall, 23.3% (40/172) patients booked for ureteropyeloscopy stone treatment had positive pre-operative urine culture results. Among Group A 4.3% patients had positive preoperative urine culture results whereas among Group B 26.2% patients had positive preoperative urine culture results. There was a statistically significant preoperative infection rate between the two groups ($p < 0.05$).

Conclusion(s): In conclusion, longer duration of stent dwell time prior to secondary ureteroscopy treatment for upper tract stones is significantly associated with increased rate of positive pre-operative urine culture. Preoperative UTIs are a known risk factor for serious peri-operative complications such as urosepsis and can lead to subsequent morbidity and even mortality. Therefore, patients who have been prestented and are waitlisted for subsequent ureteropyeloscopy laser lithotripsy should be appropriately triaged to schedule their secondary procedure within an appropriate timeframe to help avoid possible serious negative outcomes.

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Status

CONFERENCE ABSTRACT

Institution

(Zhuo, Wang, Vaux, Lazzaro, Vass, Rasiah, Wines, Chalasani, Chung) Royal North Shore Hospital, Dept. of Urology, Sydney, Australia

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255.

Mini-percutaneous nephrolithotomy using ClearPetra system and MOSES laser lithotripsy.

Popiolek M.M., Jarl S.

Embase

European Urology Open Science. Conference: EAU20 Virtual Congress and Theme Week.

Virtual, Online. 19(Supplement 2) (pp e2334), 2020. Date of Publication: July 2020.

[Conference Abstract]

AN: 2006104897

Introduction & Objectives: Miniaturized percutaneous nephrolithotomy (mPCNL) is used for the treatment of stones in various sizes and locations. However, it has some significant limitations, such as longer operation time and higher intrarenal pressure compared to a standard PCNL, which can increase risk for postoperative sepsis. To overcome these limitations, a new sheath with a continuous negative pressure aspiration has been introduced (ClearPetra, Wellead). Furthermore, the latest generation high-power Holmium laser with MOSES technology can increase the efficacy of lithotripsy and reduce retropulsion. This video demonstrates the steps of mPCNL utilizing the ClearPetra system in combination with high-power laser and presents the outcomes from our institution.

Material(s) and Method(s): mPCNL is performed routinely at our institution in the flank-free supine position. ClearPetra system consists of a sheath with an oblique port where suction is applied, facilitating continuous extraction of small stone fragments and dust. Larger fragments can be evacuated by slow withdrawal of the nephroscope. A ClearPetra sheath (16Ch, 13 or 15cm), along with a one-step dilator, is introduced over a wire without any predilation. Holmium-YAG laser (MOSES Pulse 120H, Lumenis) with 550µm laser fiber is used for stone disintegration. A double pigtail catheter on strings is routinely used for postoperative drainage. Data regarding mPCNL with ClearPetra and high-power laser has been retrieved from a local, prospective register.

Result(s): Our video presents the efficacy of mPCNL with a combination of the ClearPetra system and MOSES laser technology in a case with a large partial staghorn stone. The lithotripsy begins with the fragmentation laser settings to debulk the stone, followed by dusting of the remnants. MOSES feature enhances the efficiency of stone disintegration due to improved transmission of the energy to the stone. The fragments formed during lithotripsy are directly dragged towards the sheath by negative pressure at the tip, which further prevents dissemination. Operative time was 66 minutes, and total stone clearance was achieved. A total of 65mPCNL with this technique were performed at our institution between March 2018 and September 2019. The median stone size was 22mm. Mean operative time was 75 minutes, and complete stone clearance was achieved in 72%. Of all, 85% of procedures were tubeless, and 80% of patients were discharged within 24 hours.

Conclusion(s): MOSES technology minimizes scattering of stone fragments and improves the efficacy of laser lithotripsy due to optimized energy transmission. ClearPetra provides clear vision due to continuous evacuation of fragments and dust, efficient extraction of larger fragments, and low intrarenal pressure. Together, the ClearPetra system and MOSES laser lithotripsy may help to overcome some of the limitations of miniaturized PCNL and further improve the outcomes.

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CONFERENCE ABSTRACT

Institution

(Popiolek, Jarl) Orebro University Hospital, Dept. of Urology, Orebro, Sweden

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Antegrade flexible nephroscopy (second-look) in gas (CO₂) medium: New technique for residual stones removal.

Korolev D., Rapoport L., Tsarichenko D., Enikeev M., Taratkin M., Enikeev D., Glybochko P.

Embase

European Urology Open Science. Conference: EAU20 Virtual Congress and Theme Week.

Virtual, Online. 19(Supplement 2) (pp e1861), 2020. Date of Publication: July 2020.

[Conference Abstract]

AN: 2006104445

Introduction & Objectives: The problem of residual stones is still relevant, especially in group of patients who has undergone PCNL for complex forms of stone disease. Flexible second-look nephroscopy in liquid irrigation medium significantly increases the cost of percutaneous surgery and also may increase complication rate associated with high intrarenal pressure especially for infected stones. To evaluate safety and efficacy of second-look flexible nephroscopy in gas (CO₂) medium for patients with residual stones after previous PCNL.

Material(s) and Method(s): There were a total of 22 patients, mean age was 51 $\pm$ 14 years. 13 patients had staghorn stones and other 9 patients had large multiple stones with stone size 23.7 $\pm$ 2.4 (20-28) mm. Conventional PCNL was performed with standard technique using a 30 Fr Amplatz sheath and ultrasound lithotripsy. The mean residual stone size and stone density were 8.3 $\pm$ 2.7 (5-17) mm and 1019 $\pm$ 245 (485-1483) HU respectively. Second-look flexible nephroscopy in gas (CO₂) medium using existing nephrostomy tract was performed on postoperative day 3-4. For nephroscopy we used flexible digital and fibre optic cystoscopes. Irrigation was applied as gas (CO₂) medium which was pumped by laparoscopic insufflator. The insufflator settings for all operations were 12 mm.Hg nominal pressure and gas flow rate - 1.5 L/min. A standard 10ft/3m insufflation hose with CO₂ filter was used. To assess the impact of gas (CO₂) medium we control acid-base balance (ABB). Blood pH was measured immediately before the operation, during it and 3 hours after its completion as well. Stone removal was performed by nitinol baskets. In one case we performed Holmium YAG Laser Lithotripsy for 17 mm residual stone after pre-filling pelvicaliceal system (PCS) with saline. In 2 cases we failed to blow PCS with gas (CO₂) medium because of the latter high rigidity and we had to continue nephroscopy with saline.

Result(s): The mean second-look flexible nephroscopy time was 42.7 $\pm$ 14.4 min. No postoperative complications were experienced. No stone migration was evolved. Blood pH during the operation and 3 hours after did not go beyond the limits of acceptable values (7.35-7.45) and remained normal in all patients. Stone-free rate was 86.3 % at 1,5-mo follow-up (low dose CT).

Conclusion(s): Second-look flexible nephroscopy in gas (CO₂) medium is an effective and safe method for residual kidney stones removing. Benefits of this technique are as follows: relative

cheapness due to lower cost of gas (CO₂), and low migration rate that reduces operating time. Low pelvic pressure allows to eliminate the risk of pyelovenous reflux and subsequent septic complications. Limitations of the technique are related with PCS rigidity, making difficult to adequately fill it with gas and also and inability to use laser energy in gas (CO₂) medium.

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Status

CONFERENCE ABSTRACT

Institution

(Korolev, Rapoport, Tsarichenko, Enikeev, Taratkin, Enikeev, Glybochko) Sechenov University,
Dept. of Urology and Reproductive Health, Moscow, Russian Federation

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257.

Virtual Basket ureteroscopic holmium laser lithotripsy: Intraoperative and early postoperative outcomes.

Maltagliati M., Bozzini G., Besana U., Calori A., Rivolta L., Malvestiti G., Pedaci G., Antonelli D., Sighinolfi C., Rocco B., Buizza C.

Embase

European Urology Open Science. Conference: EAU20 Virtual Congress and Theme Week.

Virtual, Online. 19(Supplement 2) (pp e1314), 2020. Date of Publication: July 2020.

[Conference Abstract]

AN: 2006104302

Introduction & Objectives: "VirtualBasket" technique is a result in pulse modulation during holmium laser lithotripsy in which the laser emits part of the energy to create an initial bubble, and the remaining energy is discharged once the bubble is formed so that it can pass through the already formed vapor channel. The aim of this study is to outline the outcomes of the Virtual Basket technology in ureteral and renal stones.

Material(s) and Method(s): A prospective trial was conducted for patients undergoing holmium laser lithotripsy for ureteral and renal stones. Patients were randomly assigned to have holmium laser lithotripsy with or without Virtual Basket technology in ureteric or renal cases (4 groups). All procedures were performed by four experienced urologists. Quanta Cyber Ho 100W generator with 365 μm was used for all cases in the ureter and 272 μm was used for all cases in the renal pelvis. Demographic data, stone parameters, perioperative complications and success rates were compared. The degree of stone retropulsion was graded on a Likert scale from zero-no retropulsion to 3-maximum retropulsion.

Result(s): A total of 160 patients were included in the study (40 per each group). All the groups were comparable in terms of age, and pre-operative stone size (ureter: 1.2 vs. 1.1 cm, $p>0.05$ renal pelvis 1.4 vs. 1.5 cm $p>0.05$). When compared with the Regular mode, Virtual Basket Technology was associated with significantly lower fragmentation time (ureter: 20.4 vs. 16.1 min, $p<0.05$; renal pelvis: 28.7 vs. 19.8 min, $p<0.05$) and total procedural time (49 vs. 35.7 min, $p<0.05$; 67.1 vs. 52.4 min, $p<0.05$). However, there were no significant differences in terms of total energy applied to the stones (9.9 vs. 10.7 KJ, $p>0.05$; 13.5 vs. 16.1 KJ, $p>0.05$). Virtual Basket technology was associated with significantly less retropulsion. There was no significant difference between both modes in terms of intraoperative complications. The success rate at the end of 1 month was comparable between both groups (92.3 vs. 88.3%, $p>0.05$; 82.7 vs. 85.9%, $p>0.05$).

Conclusion(s): Virtual Basket technology is associated with significantly lower fragmentation and procedural times. The reduced fragmentation time is a result of the significantly lower retropulsion of the stones during laser lithotripsy; thus improving stone fragmentation efficiency.

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CONFERENCE ABSTRACT

Institution

(Maltagliati, Bozzini, Besana, Calori, Rivolta, Malvestiti, Pedaci, Antonelli, Buizza) ASST Valle Olona, Dept. of Urology, Busto Arsizio, Italy (Sighinolfi) Università di Modena e Reggio Emilia, Dept. of Urology, Modena, Italy

(Rocco) Università di Modena e Reggio Emilia, Dept. of Urology, Modena, Italy

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258.

Developing a free three-dimensional tool for kidney stones' surgical planning: Calculator.
Panthier F., Doizi S., Berthe L., Traxer O., Groupe de Recherche Clinique sur la lithiase urinaire
(ndegree20)

Embase

European Urology Open Science. Conference: EAU20 Virtual Congress and Theme Week.
Virtual, Online. 19(Supplement 2) (pp e844), 2020. Date of Publication: July 2020.

[Conference Abstract]

AN: 2006103803

Introduction & Objectives: Flexible ureteroscopy has gained in popularity for kidney stone treatment. However, operative time may be variable according to the stone burden. We aimed to develop a three-dimensional (3D) tool for kidney stones' surgical planning.

Material(s) and Method(s): 3DSlicer is a free open-source software platform for medical image computing (DICOM) and 3D visualization. Both MATLAB and Python scripting are available to develop new modules, using the "Extension Developing tool". Major developing criteria were: suitable for CT-scan DICOM series, definition of a region of interest (ROI), stone single- or multiple-detection based on Hounsfield Units, 3D visualization. Minor criteria were expected duration of lithotripsy based on laser source (Holmium:YAG or Superpulse Thulium Laser Fiber), core-diameter laser fibers and laser settings.

Result(s): CALCULator is a Python scripted module, available in 3DSlicer. Before using it, definition of a ROI is required with "Crop Volume" module. ROI is adjustable upon axial, sagittal and coronal views of a non-enhanced CT-scan DICOM series. From ROIs, CALCULator defines an adjustable segmentation based on thresholds to detect stones. << Split islands into segments

>> option is useful in case of multiple stones, but requires a minimal size criteria (voxel). 3D view is optional in order to maximize computing time. Final view contains axial, sagittal and coronal views, with segment's volume and lithotripsy duration among chosen laser settings. Figure 1 shows a clinical example of a single kidney stone measurement and expected lithotripsy duration among chosen laser settings. Figure 1: Example from a non-enhanced CT-scan of a single stone volumetric measure in the left renal pelvis et treated according to dusting settings (0,5J-30Hz) with Holmium :YAG laser. [Figure presented]

Conclusion(s): CALCULator is a free 3DSlicer module that provides stones volumes and expected lithotripsy duration among laser settings, based on segmentation principle with CT-scan DICOM series. Surgical planning should be useful in kidney stone procedures.

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Status

CONFERENCE ABSTRACT

Institution

(Panthier) Tenon Hospital, Aphp, Dept. of Urology, Dept. of Arts et Metiers Paris Tech, Dept. of GRC lithiase, Paris, France (Doizi, Traxer) Tenon Hospital, Dept. of Urology, Paris, France (Berthe) Ecole Superieure des Arts et Metiers, Dept. of PIMM laboratory, Paris, France

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259.

Association between ureteric stent dwell time and urinary tract infection.

Zhuo K., Wang N., Vaux K., Lazzaro E., Vass J., Rasiah K., Wines M., Chalasani V., Chung A.

Embase

BJU International. Conference: 73rd Annual Scientific Meeting of the Urological Society of Australia and New Zealand. Sydney, NSW Australia. 125(Supplement 1) (pp 64-65), 2020. Date of Publication: March 2020.

[Conference Abstract]

AN: 631581693

Introduction & Objectives: Urosepsis following ureteropyeloscopy laser lithotripsy can be associated with significant morbidity and sometimes even death. Urinary foreign bodies can be a risk factor for urinary tract infection (UTI). A number of patients undergoing ureteropyeloscopy laser lithotripsy have ureteric stents in situ. This study aims to investigate possible association between ureteric stent dwell time and the presence of UTI between staged procedures of endoscopic ureteric stone treatment (ureteropyeloscopy).

Method(s): A retrospective review of all adult patients who were treated under 7 urologists at a single institution (Royal North Shore Hospital) by ureteropyeloscopy laser lithotripsy or basket removal of upper tract urolithiasis, who already had been presented, was conducted from 01 January 2018 - 30 June 2019. Patient demographic data, disease data, pre-operative urine culture results, ureteric stent dwell time, intra-operative complications and post-operative complications were recorded. Data was analysed using IBM SPSS V24. Descriptive analyses were performed. Normally distributed data was analysed using independent t-tests and ANOVA; categorical variables were analysed using Chi-square and Fisher's exact tests. Pvalues < 0.05 were considered statistically significant.

Result(s): 172 patients (mean age 56.1 years, range 24.1-93.9) were identified for this study. 60 were female, whilst 112 were male patients. Of these patients, 23 patients (13.4%) underwent their secondary procedure with a stent dwell time of 1 month or less (Group A); whilst 149 patients (86.6%) underwent ureteropyeloscopy stone treatment with a stent dwell time greater than 1 month (Group B). Overall, 23.3% (40/172) patients booked for ureteropyeloscopy stone treatment had positive pre-operative urine culture results. Among Group A 4.3% patients had positive preoperative urine culture results whereas among Group B 26.2% patients had positive preoperative urine culture results. There was a statistically significant preoperative infection rate between the two groups ($p < 0.05$). Being female was also found to be statistically significant for preoperative infections ($p = 0.001$), with 38.3% (23/60) of females having a positive preoperative urine culture, whilst only 15.2% (17/112) males had a positive preoperative urine culture. Patient age, stone burden, stone location and the presence of patient comorbidities were not found to be significantly correlated with preoperative infection rates.

Conclusion(s): In conclusion, female gender and longer duration of stent dwell time prior to secondary ureteroscopic treatment for upper tract stones is significantly associated with increased rate of positive preoperative urine culture. Preoperative UTIs are a known risk factor for serious perioperative complications such as urosepsis and can lead to subsequent morbidity and

even mortality. Therefore, patients who have been prestented and are waitlisted for subsequent ureteropyeloscopy laser lithotripsy should be appropriately triaged to schedule their secondary procedure within an appropriate timeframe to help avoid possible serious negative outcomes.

(Table Presented) .

Status

CONFERENCE ABSTRACT

Institution

(Zhuo, Wang, Vaux, Lazzaro, Vass, Rasiah, Wines, Chalasani, Chung) Royal North Shore Hospital, St Leonards, Australia

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260.

"Hot stones" - A new, costeffective model for the semielective management of ureteric stones:

Initial impressions from a WA tertiary centre.

Moe A., Mikhail M., Sur H., Abdulhamid M.A., Thyer I., Brown M., Barrett T., Hayne D.

Embase

BJU International. Conference: 73rd Annual Scientific Meeting of the Urological Society of Australia and New Zealand. Sydney, NSW Australia. 125(Supplement 1) (pp 7), 2020. Date of Publication: March 2020.

[Conference Abstract]

AN: 631581679

Introduction and Objectives: The WA South Metropolitan Health Service (SMHS) Hot Stone Pathway was created to fast-track the surgical management of patients who presented to Fiona

Stanley Hospital (FSH) with obstructing ureteric stones. Previously, these patients received either a tertiary inpatient admission and an often-lengthy wait for emergency theatre, or a Category 1 (within 30 days) elective booking. This pathway was developed to reduce FSH inpatient bed stay, readmissions, and the surgical wait time for these patients with renal colic.

Objective(s): To report on the structure of the SMHS Hot Stone Pathway for patients presenting with acute ureteric colic requiring surgical management, and the subsequent health economic outcomes.

Method(s): A prospective audit of the first 9 months activity of the SMHS Hot Stone Pathway. Patients who presented to FSH Emergency Department (ED) with renal colic secondary to a large ureteric calculus or refractory pain were reviewed by a Urology registrar, who coordinated urgent elective surgery to a secondary hospital (FH) according to patient suitability criteria. Each list allowed for at least one "Hot Stone" to be performed as a day case. The estimated health-economic data collected included the pre-operative length of stay at FSH, the overnight stay at FH, the estimated total bed day savings, and the financial savings in bed days.

Result(s): After 9 months, 55 patients (32 male, 23 female) underwent operative management through the Hot Stone Pathway. 42 patients (76.4%) were managed as day cases and the remaining 7 (23.4%) as an overnight stay. Mean length of stay was 1.24 days (range 1-2). Mean length of wait was 2.85 days (range 0-8). 32 patients (58.2%) underwent ureteroscopy (URS) + lasertripsy/basket extraction, 22 (40%) required primary stenting only, and 1 (1.8%) failed retrograde therapy. Five patients re-presented to ED post-operatively, none requiring re-admission. Zero cases of post-operative sepsis were identified.

Conclusion(s): The SMHS Urology Hot Stone Pathway has substantially reduced the pre-operative inpatient stay at FSH and the overnight stay at FH on the day of elective surgery. This model has reduced the total bed day occupancy and associated costs for management of ureteric stones. The Hot Stone Pathway has now become the standard of care for appropriate patients presenting to FSH ED with renal colic. Based on an average 3-day admission for patients receiving cystoscopy + retrograde stent, prior to elective booking for URS + laser. *Average bed day costs in Surgical Short Stay Unit is \$1,210 - savings in bed days estimated at \$78,650 and a reduction of an extra operation and General Anaesthetic for each of these 18 patients. (Table Presented) .

Status

CONFERENCE ABSTRACT

Institution

(Moe, Mikhail, Sur, Abdulhamid, Thyer, Brown, Barrett, Hayne) Fiona Stanley Hospital, Murdoch, Australia (Moe, Hayne) UWA Medical School, Crawley, Australia

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261.

Ureterorenoscopic stone procedures in an Australian tertiary healthcare setting: Post-operative review and results.

Dat A., Jackman M., Goel V., Davis M., Sidoti R., Winter H., Mccahy P.

Embase

BJU International. Conference: 73rd Annual Scientific Meeting of the Urological Society of Australia and New Zealand. Sydney, NSW Australia. 125(Supplement 1) (pp 5), 2020. Date of Publication: March 2020.

[Conference Abstract]

AN: 631581588

Introduction and Objectives: To evaluate the effectiveness of ureterorenoscopic stone procedures in a contemporary Australian tertiary healthcare setting.

Method(s): Hospital records of all ureterorenoscopic stone procedures performed between 1 January 2017 and 31 December 2018 in a metropolitan service were retrospectively reviewed. Basic demographics and operation characteristics including energy source, presence of access sheaths, stone baskets were recorded. Outcome measures including stone free rates, adherence to postoperative follow-up and complications rates were recorded.

Result(s): 383 patients (median age 54, range 18-89) with 393 renal units underwent ureterorenoscopic procedures for stones measuring between 2-27 mm (median 8 mm). 466 ureterorenoscopy operations with 1038 total procedures were performed. 48.9% of operations were performed as day cases, with the remainder mostly staying 1 night (range 1-21 days). Complications were recorded in 6% with 56% of these Clavien II or more. The representation rate to our Emergency Departments was 15.71%. Only 47% of patients had a follow-up review with

imaging. Of the patients who underwent imaging, 38% were stone free. Stone analysis was performed in 33.17%.

Conclusion(s): Less than half of all patients were reviewed despite undergoing expensive, time consuming surgery for a condition that is known to have a high recurrence rate. In agreement with recent publications stone-free rates were low, equivalent to those published for extracorporeal shockwave lithotripsy, with significant complications and representation rates. Stone surgery should be given the attention and resources equivalent to cancer surgery to improve results.

Status

CONFERENCE ABSTRACT

Institution

(Dat, Mccahy) Department of Urology, Monash Health, Melbourne, Australia (Jackman, Goel, Davis, Sidoti, Winter, Mccahy) School of Clinical Sciences, Monash University, Melbourne, Australia

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262.

Initial human experience with a novel stone aspiration device used during ureteroscopic lithotripsy for renal stones.

Agrawal S., Singh A., Eisner B., Preminger G., Ganpule A., Sabnis R.B., Desai M.R.

Embase

Indian Journal of Urology. Conference: 53rd Annual Conference Urological Society of India. Kochi India. 36(5 Supplement 1) (pp S6), 2020. Date of Publication: January 2020.

[Conference Abstract]

AN: 630961000

Introduction and Objectives: Basket extraction of stone fragments after ureteroscopic lithotripsy is time-consuming and may result in poorer-than-expected stone free rates. Here in we report the first-in-human experience using a novel stone aspiration device designed to more efficiently and effectively remove stone fragments after ureteroscopy.

Method(s): Patients with renal stones 5-15mm were randomized, into two groups; Group 1 - Fragment extraction via basket retrieval after laser lithotripsy was performed until surgeon felt stone free status, Group 2 - after laser lithotripsy ureteroscope was replaced by novel device (K-VACi Kalera Medical, San Diego, CA) which passed systematically through all calyces using fluoroscopic guidance, and stone fragments were aspirated for approximately 2 minutes in each area where stones were located. 12/14 Fr ureteral access sheath was used. NCCT KUB was performed post-operative day 1 and 30. Stone free was defined as no stone fragments.

Result(s): Eight and nine subjects were randomized to Group 1 and Group2 respectively. No differences in demographics or pre-operative stone volume (mean basket group = 436 mm³, K-VAC group = 559 mm³, p = 0.59). Mean % stone volume removed was significantly higher in the K-VAC group (85.2% versus 58.7%, p=0.025). No difference in the mean total fluoroscopy (318 seconds versus 295 seconds, p=0.78). At 1 month follow up, 100% of subjects in the K-VAC group were stone free compared to 75% of subjects in the basket group.

Conclusion(s): Use of novel stone aspiration device, K-VAC, demonstrated superior stone free rates compared to conventional basketing during ureteroscopy with lithotripsy.

Status

CONFERENCE ABSTRACT

Institution

(Agrawal, Singh, Eisner, Preminger, Ganpule, Sabnis, Desai) Muljibhai Patel Urological Hospital, Nadiad, Gujarat, India

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263.

Advanced technology for ureteroscopic lithotripsy - Clearpetra system.

Leung D.K.W., Mak S.K., Li J., Yu M., Ng C.F.

Embase

Surgical Practice. Conference: RCSEd/CSHK Conjoint Scientific Congress Advances and Innovations in Surgery. Aberdeen Hong Kong. 23(Supplement 1) (pp 35), 2019. Date of Publication: September 2019.

[Conference Abstract]

AN: 632062407

Aim: This video aims to illustrate a new system of access sheath known as Clearpetra. The conventional ureteroscopic lithotripsy (URSL) has several intrinsic limitations, including poor endoscopic view, stone retropulsion, high intraluminal pressure leading to sepsis and the need for repeated stone extraction using accessory instruments such as baskets and forceps. Our objective is to tackle these problems to enhance the efficacy of ureteroscopic lithotripsy.

Method(s): We described the new access sheath in particular its structure, functions and proposed benefits. In addition, we incorporated intraoperative recording of a case of Clearpetra URSL. We highlighted the differences between this new system and the conventional surgery. The postoperative outcomes were also discussed.

Result(s): With the advent of continuous irrigation and suction, Clearpetra allowed clearer endoscopic view, reduced intraluminal pressure, easier stone extraction with no need for accessory instruments and effective stone fragmentation. Complete stone clearance was achieved within a reasonable period of time. The postoperative course was uneventful.

Conclusion(s): We believe that this new system is safe and practical in ureteric lithotripsy. Its use is not only limited to ureteric stone but also for percutaneous nephrostomy lithotripsy. It is hoped that more studies would determine its clinical benefits and cost-effectiveness.

Status

CONFERENCE ABSTRACT

Institution

(Leung, Mak, Li, Yu, Ng) Division of Urology, New Territories East Cluster, Hong Kong, Hong Kong

Publisher

Blackwell Publishing Ltd

Year of Publication

2019

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264.

5th Meeting of the EAU Section of Urolithiasis.

Anonymous

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Urolithiasis.

Milan Italy. 18(7) (pp e2731-e3038), 2019. Date of Publication: October 2019.

[Conference Review]

AN: 2002936103

The proceedings contains 245 papers. The topics discussed include: Influencing residual stone size and stone-free rate subsequent to flexible ureteroscopy - Evidence-based "means to an end" by combination potassium, magnesium citrate and pyridoxine within a prospective, randomized-controlled clinical trial;Rirs and spinal anesthesia in high risk patient;Donor and post-transplant ureteroscopy for stone disease in patients with renal transplant - Evidence from a systematic review;Reducing infective complications in endoscopic stone treatment by avoiding pressure irrigation;Impact of ureteral access sheath on renal stone treatment: Prospective comparative non-randomised outcomes over a 7-year period;Is retrograde intrarenal surgery really safe for solitary kidney's stones?;Dusting versus basketing when performing flexible ureteroscopy lithotripsy for the management of <=2 renal stone: An evidence from a single-center randomized controlled trial;Bilateral simultaneous ureteroscopy for bilateral urolithiasis: The future? Evidence from a systematic review;Percutaneous nephrostomy-assisted ureterorenoscopy (PAU) for an impacted ureteral stone: A clinical study of super-minimally invasive endourology;Retrograde intrarenal surgery with semi-rigid and flexible ureterorenoscope for renal pelvic stones: Retrospective comparisons of success and complication rates

Status

CONFERENCE ABSTRACT

Publisher

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265.

Exploiting the aiming beam to increase the safety of laser lithotripsy: Experimental evaluation of light reflection and fluorescence.

Lange B., Cordes J., Brinkmann R.

Embase

Lasers in Surgery and Medicine. 52(5) (pp 456-471), 2020. Date of Publication: 01 Jun 2020.

[Article]

AN: 2003395246

Background and Objectives: In Holmium laser lithotripsy, usually, the surgeon is guided by a visible beam superimposing the infrared (IR) treatment radiation. It has been shown that a green aiming beam excites stone autofluorescence. This fluorescence signal can be used for calculi detection to check the correct fiber position before triggering the IR laser, thus preventing damage to soft tissue and application devices. However, also the directly reflected green light from the fiber tip gives valuable information on fiber position and its surface condition.

Material(s) and Method(s): An external fiber-fiber-coupling-box (fiber core diameter 365 microm) for pulsed holmium laser radiation (2.1 microm) was set up containing a green diode laser module (520 nm, average power on the sample <0.5 mW) and optics and detectors for measuring the reflected light of this aiming beam as well as the fluorescence excited with it. Measurements were done via a lock-in technique with more than 20 human calculi samples and porcine calix in vitro.

After the implementation of automatic data storage signals during ongoing in vitro lithotripsy procedures were recorded with the fiber positioned on tissue, stone, or in/on medical equipment (working channel of an endoscope, stone retrieval basket).

Result(s): Stone fluorescence signals measured were a factor of 7 to >100 higher than those of tissue. Stone fluorescence was detectable in "non-contact mode" with a linear signal decrease over a distance up to ~1 mm in front of the fiber tip (core diameter 365 microm) and with severely damaged fibers (max. decrease: 75% with pinched off fiber). Reflection signals of the fiber tip surface in air and water surrounding decreased significantly when the fiber was damaged; measured ratios of intact to damaged fiber found in the air were (5-17):1 and in water (1.6-3.7):1. Surfaces in front of the fiber aggravated the evaluation of fiber condition due to reflections but enabled to detect, for example, the working channel of a flexible endoscope in combination with the (missing) fluorescence signal.

Conclusion(s): Autofluorescence induced by a green aiming beam can be exploited for stone detection in laser lithotripsy. A reflection measurement can give further information on fiber condition and position. Implementing this kind of safety features for an automatic block of IR laser emission in case of weak or missing fluorescence and un-normal reflections can assist the surgeon by avoiding tissue perforation, and damage to medical devices such as endoscopes.

Lasers Surg. Med. © 2019 Wiley Periodicals, Inc.

PMC Identifier

31512270 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=31512270>]

Status

Embase

Author NameID

Lange, Birgit; ORCID: <http://orcid.org/0000-0002-4782-0810>

Institution

(Lange, Brinkmann) Medical Laser Center Lubeck, Lubeck D-23562, Germany (Cordes)
Department of Urology, University Medical Center Schleswig-Holstein, Lubeck Campus, Lubeck D-23538, Germany

Publisher

John Wiley and Sons Inc. (P.O.Box 18667, Newark NJ 07191-8667, United States)

Year of Publication

2020

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266.

Worldwide survey of flexible ureteroscopy practice: a survey from european association of urology sections of young academic urologists and uro-technology groups.

Pietropaolo A., Bres-Niewada E., Skolarikos A., Liatsikos E., Kallidonis P., Aboumarzouk O., Taily T., Proietti S., Traxer O., Giusti G., Rukin N., Ozsoy M., Talso M., Emre S.T., Emiliani E., Atis G., Somani B.K.

Embase

Central European Journal of Urology. 72(4) (pp 393-397), 2019. Date of Publication: 2019.

[Article]

AN: 2003449680

Introduction To understand the current practice of flexible ureteroscopy (fURS), we conducted a worldwide survey among urologists with a special interest in endourology. **Material and methods** A 42-question survey was designed after an initial consultation with European Association of Urology young academic urologists (YAU) and uro-technology (ESUT) groups. This was distributed via the SurveyMonkey platform and an ESUT meeting to cover practice patterns and techniques in regard to ureteroscopy usage worldwide. **Results** A total of 114 completed responses were obtained. A safety guidewire was reportedly used by 84.5% of endourologists, an access sheath was always or almost always used by 71% and a reusable laser fibre was used by two-thirds of respondents. While a combination of dusting and fragmentation was used by 47% as a preferred mode of intra-renal stone treatment, some used dusting (43%) or fragmentation with basketing (10%). Disposable scopes were only used by 40% and three quarters of them used it for challenging cases only. Antibiotic prophylaxis was limited to a single peri-operative dose by two-thirds (67%) of respondents. The procedural time was limited to between 1-2 hours by two-thirds (70%) of respondents and very rarely (7.4%) it exceeded 2 hours. The irrigation method varied between manual pump (46%), mechanical irrigation (22%) or gravity irrigation (27%). **Conclusions** Our survey shows a wide variation in the available endourological armamentarium and surgical practice amongst urologists. However, there seems to be a broad agreement in the use of peri-operative antibiotics, access sheath usage, method of stone treatment and the use of post-operative stent.

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Status

Embase

Institution

(Pietropaolo, Somani) University Hospital Southampton NHS Foundation Trust, Department of Urology, Southampton, United Kingdom (Bres-Niewada) Roepler Memorial Hospital, Department of Urology, Pruszkow, Poland

(Skolarikos) University of Athens, 2 Department of Urology, Athens, Greece

(Liatsikos, Kallidonis) University of Patras, Department of Urology, Patras, Greece

(Aboumarzouk) NHS Greater Glasgow and Clyde, Department of Urology, Glasgow, United Kingdom

(Tailly) Universitair Ziekenhuis Gent, Department of Urology, Gent, Belgium

(Proietti, Giusti) IRCCS San Raffaele Scientific Institute, Ville Turro Division, Department of Urology, Milan, Italy

(Traxer) Tenon Hospital, Assistance Publique-Hopitaux De Paris, Pierre et Marie Curie University, Department of Urology, Paris, France

(Rukin) Metro North Hospitals and Health Service, Brisbane, Australia

(Ozsoy) Medical University of Vienna, Vienna General Hospital, Department of Urology, Vienna, Austria

(Talso) ASST Vimercate Hospital, Department of Urology, Vimercate, Monza Brianza, Italy

(Emre) Marmara University, Department of Urology, Istanbul, Turkey

(Emiliani) Fundacio Puigvert, Urolithiasis Division, Barcelona, Spain

(Atis) Istanbul Medeniyet University, Department of Urology, Istanbul, Turkey

(Somani) University of Southampton, Southampton, United Kingdom

Publisher

Polish Urological Association (E-mail: urologiawroclaw@poczta.onet.pl)

Year of Publication

2019

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267.

Impact of case volume per year on flexible Ureteroscopy practice: An internet based survey.
Alhunaidi O., Ahmad A.A., El-Nahas A.R., Akroof B., Alamiri A., Al-Ajrawi F., Al-Terki A., El-Shazly M.

Embase

BMC Urology. 19(1) (no pagination), 2019. Article Number: 134. Date of Publication: 18 Dec 2019.

[Article]

AN: 630287920

Background: To report current worldwide variation in techniques and clinical practice of flexible ureteroscopy (FURS) among endourologists of different case volumes per year.

Method(s): Two invitations to complete an internet survey were emailed to Endourological Society members. Some of survey questions asked about indications of using FURS for renal and upper ureteral stones. Others were concerned with clinical practice of FURS (such as preoperative stenting, use of ureteral access sheath (UAS) and safety guidewire, technique of Laser lithotripsy and fragment retrieval, and post-FURS stenting. Responders were distributed into two groups; high-volume (> 100 cases/year) and low-volume surgeons (< 100 cases/year) and data were compared between both groups.

Result(s): Responses were received from 146 endourologists all over the world (62 high-volume and 84 low-volume). FURS for intrarenal stone > 20 mm was used by 61% of high-volume surgeons compared with 28.6% for low-volume ($P < 0.001$). Semirigid URS was used for upper ureteric stones in 68% among high-volume group and 82% in low-volume group ($P = 0.044$). UAS was used by 62% in low-volume group and 69% in high volume group ($P = 0.516$). Laser stone dusting was preferred by 63% in low-volume group versus 45% by high-volume ($P = 0.031$). More responders in low-volume group preferred to leave the stent for 6 weeks ($P = 0.042$).

Conclusion(s): The use of FURS for treating upper tract calculi has expanded by high volume endourologists to include large renal stones > 20 mm. Low-volume surgeons prefer to use semi-rigid URS for treatment of upper ureteral stones, to apply Laser stone dusting and maintain ureteral stents for longer periods.

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Status

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Author NameID

El-Nahas, Ahmed R.; ORCID: <http://orcid.org/0000-0001-7366-7306>

Institution

(Alhunaidi, El-Nahas, Akroof, Alamiri, Al-Terki) Urology Department, Al-Amiri Hospital, Kuwait City, Kuwait (Ahmad) Urology Department, Adan Hospital, Hadiya, Kuwait

(El-Nahas) Urology and Nephrology Center, Mansoura University, Mansoura, Egypt

(Al-Ajrawi) Urology Department, Al-Farwaniya Hospital, Sabah Al Nasser, Kuwait

(El-Shazly) Urology Department, Menoufia University, Al Minufya, Egypt

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BioMed Central Ltd. (E-mail: info@biomedcentral.com)

Year of Publication

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268.

Thulium fiber laser ablation of kidney stones using an automated, vibrating fiber.

Hall L.A., Gonzalez D.A., Fried N.M.

Embase

Journal of biomedical optics. 24(3) (pp 1-10), 2019. Date of Publication: 01 Mar 2019.

[Article]

AN: 627072988

Our preliminary study investigates an automated, vibrating fiber optic tip for dusting of kidney stones during thulium fiber laser (TFL) lithotripsy. A (0.75-mm diameter and 5-mm length) magnetic bead was attached to the fiber jacket, centered 2 cm from distal fiber tip. A solenoid was placed parallel to the fiber with a 0.5-mm gap between solenoid and magnetic bead on fiber. The solenoid was used to create a magnetic force on the bead, inducing fiber vibration. Calibration tests for fiber motion in both air and water were performed. The ablation crater characteristics (surface area, volume, depth, and major/minor axis) of uric acid stones were

measured using optical coherence tomography, after delivery of 1500 TFL pulses at 1908 nm, 33 mJ, 500µs, and up to 300 Hz, through 50-, 100-, and 150-µm-core fibers. The resonant frequency was dependent on fiber diameter and rigidity, with a cutoff pivot point for optimum vibration amplitude at 4 cm. Maximum fiber displacement is about 1 mm in water and 4 mm in air. For 50-, 100-, and 150-µm-core fibers, ablated surface area averaged 1.7, 1.7, and 2.8 times greater with vibrating fiber than fixed fiber, respectively. For these fibers, ablation volume averaged 1.1, 1.5, and 1.1 times greater with vibrating fiber than fixed fiber, given a fixed energy per pulse, respectively. Our preliminary study demonstrates the functionality of an automated, vibrating fiber system for stone "dusting," with significantly larger surface area but similar ablation volumes as a fixed fiber. Future studies will focus on optimization of fiber parameters (especially displacement) and miniaturization of system components to facilitate integration into ureteroscopes.

PMC Identifier

30915783 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=30915783>]

Institution

(Hall, Gonzalez, Fried) University of North Carolina at Charlotte, Department of Physics and Optical Science, Nor, Charlotte, United States (Fried) Carolinas Medical Center, McKay Department of Urology, Charlotte, North Carolina, United States

(Fried) Johns Hopkins Medical School, Brady Urological Institute, Baltimore, MD, United States

Publisher

NLM (Medline)

Year of Publication

2019

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Fragments and dust after Holmium laser lithotripsy with or without "Moses technology": How are they different?.

Keller E.X., de Coninck V., Audouin M., Doizi S., Bazin D., Daudon M., Traxer O.

Embase

Journal of biophotonics. 12(4) (pp e201800227), 2019. Date of Publication: 01 Apr 2019.

[Article]

AN: 627198624

Urinary stones can be readily disintegrated by Holmium:YAG laser (Holmium laser lithotripsy), resulting in a mixture of small stone dust particles, which will spontaneously evacuate with urine and larger residual fragments (RF) requiring mechanical retrieval. Differences between fragments and dust have not been well characterized. Also, it remains unknown how the recently introduced "Moses technology" may alter stone disintegration products. Three complementary analytical techniques have been used in this study to offer an in-depth characterization of disintegration products after in vitro Holmium laser lithotripsy: stereoscopic microscopy, scanning electron microscopy and Fourier-transform infrared spectroscopy. Dust was separated from fragments based on its floating ability in saline irrigation. Depending on initial crystalline constituents, stone dust either conserved attributes found in larger RFs or showed changes in crystalline organization. These included conversion of calcium oxalate dihydrate towards calcium oxalate monohydrate, changes in carboxapatite spectra towards an amorphous phase, changes of magnesium ammonium phosphate towards a differing amorphous and crystalline phase and the appearance of hydroxyapatite on brushite fragments. Comparatively, "Moses technology" produced more pronounced changes. These findings provide new insights suggesting a photothermal effect occurring in Holmium laser lithotripsy. Figure: Appearance of hydroxyapatite hexagons on stone dust collected after Holmium laser lithotripsy of a brushite stone using "Moses technology."

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PMC Identifier

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Author NameID

Traxer, Olivier; ORCID: <http://orcid.org/0000-0002-2459-3803> Keller, Etienne X.; ORCID:

<http://orcid.org/0000-0003-1667-7609>

de Coninck, Vincent; ORCID: <http://orcid.org/0000-0002-4983-5055>

Institution

(Keller, de Coninck, Audouin, Doizi, Traxer) Sorbonne Universite, Service d'Urologie, AP-HP, Hopital Tenon, Paris, France (Keller, de Coninck, Audouin, Doizi, Traxer) Sorbonne Universite, GRC no 20, Groupe de Recherche Clinique sur la Lithiase Urinaire, Hopital Tenon, Paris, France

(Keller) Department of Urology, University Hospital Zurich, University of Zurich, Zurich, Switzerland

(de Coninck) Department of Urology, AZ Klinka, Brasschaat, Belgium

(Bazin) CNRS, Laboratoire de Chimie de la Matière Condensée de Paris, UPMC, Collège de France, Paris, France

(Bazin) Laboratoire de Physique des Solides, CNRS UMR 8502, Université Paris Sud XI, Orsay, France

(Daudon) CRISTAL Laboratory, Tenon Hospital, Paris, France

(Daudon) Laboratoire des Lithiases, Service des Explorations Fonctionnelles Multidisciplinaires, AP-HP, Hôpital Tenon, Paris, France

(Daudon) INSERM, Tenon Hospital, Paris, France

Publisher

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270.

Urologists' estimations of the cost of commonly used disposable devices.

Farber N.J., Chuchvara N., Modi P.K., Sterling J., Elsamra S.E.

Embase

The Canadian journal of urology. 26(1) (pp 9660-9663), 2019. Date of Publication: 01 Feb 2019.

[Article]

AN: 626524568

INTRODUCTION: To assess whether urologists are able to accurately estimate the cost of commonly used endourologic disposable devices. MATERIALS AND METHODS: An anonymous questionnaire was presented to resident and attending urologists in one academic healthcare

system. Respondents estimated the cost of 15 disposable devices commonly used in ureteroscopy. Twenty-five surgeons (9 resident and 16 attending urologists) participated for a response rate of 96.2%. Respondents' cost estimates were compared to actual institutional costs and considered accurate if the absolute percentage error was within 20%. Additional information obtained included: years in practice, participation in purchasing activities, practice setting, number of ureteroscopy procedures performed monthly, degree of confidence in ability to estimate cost, and the importance of cost in device selection for each respondent.

RESULT(S): Of 375 total responses, 62 (16.5%) were accurate, 308 (82.1%) were inaccurate, and 5 (1.3%) were unanswered. The mean percentage error (MPE) for all responses was 178.8% (IQR 35.1%-211.4%). Overall, 73% of responses were overestimations and 27% were underestimations. Residents had an MPE of 128.4%, while attending urologists had an MPE of 207.8%. The most inaccurately estimated cost was for an endoscopic y-adapter, while the most accurate estimations were for a 1.5Fr nitinol ureteroscopic stone basket.

CONCLUSION(S): Neither attending nor resident urologists are able to accurately estimate the cost of commonly used disposable devices. Improving urologists' understanding of device costs is necessary for improved cost control and a reduction in healthcare expenditures.

PMC Identifier

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Institution

(Farber) Division of Urology, Rutgers Robert Wood Johnson Medical School, New Brunswick, New Jersey, USA

Publisher

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Clinical study of percutaneous nephrolithotomy and antegrade flexible ureteroscopy in the treatment of complicacy kidney stone.

Shi Z., Han C., Qiu X., Hao L., Zhao Y.

Embase

International Journal of Urology. Conference: 17th Urological Association of Asia Congress, UAA 2019. Kuala Lumpur Malaysia. 26(Supplement 2) (pp 221), 2019. Date of Publication: August 2019.

[Conference Abstract]

AN: 629086787

Introduction and objectives To explore the safety, efficacy and curative effect of primary nephrolithotomy combined with antegrade ureteroscope in the treatment of complex renal stones. **Materials and methods** Retrospective analysis was performed on 150 patients with complex kidney stones treated with percutaneous nephrolithotomy and antegrade ureteral soft-tissue in our hospital from May 2013 to June 2018 in our hospital. The pelvic puncture was performed with color Doppler positioning, percutaneous nephrolithotomy followed by placement of a nephroscope sheath into the Wolf ureteroscope (6/8.8 F, up/down 180/270) to reach the renal pelvis with 200 lm fiber, <30 W He-Ne laser crushed the residual stones, and larger stones were removed with a set of stone baskets. The stone clearance rate, surgical complications, and operation time were observed. **Results** All the 141 patients were found to have residual stones, gravel or stones to complete the operation in one phase. 123 cases of stone removal after complete review were complete, and a small amount of stones remained in 18 cases. The rate of stone clearance in the first phase was 85%. Operating time 45 min-120 min. There was no control in 15 cases. **Postoperatively**, there were 9 cases of chills and fever, no serious complications. **Conclusions** Percutaneous nephrolithotomy combined with soft ureteroscope is safe and effective in the treatment of complex renal calculi. It can reduce patient's pain and avoid secondary surgery.

Status

CONFERENCE ABSTRACT

Institution

(Shi, Han, Qiu, Hao, Zhao) Xuzhou Central Hospital, Xuzhou, China

Publisher

Blackwell Publishing Inc.

Year of Publication

2019

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272.

Comparison between the one-surgeon basketing technique and the conventional two-surgeon basketing technique using bench-model simulator in flexible ureteroscopy.

Okada S., Hamamoto S., Inoue T., Minagawa S., Morikawa H., Matsuda T., Miura H.

Embase

International Journal of Urology. Conference: 17th Urological Association of Asia Congress, UAA 2019. Kuala Lumpur Malaysia. 26(Supplement 2) (pp 88), 2019. Date of Publication: August 2019.

[Conference Abstract]

AN: 629086111

Background In the stone retrieval, the ureteroscope is commonly handled by the operator, whereas the basket forceps is manipulated by an assistant, either a surgeon or a nurse (two-surgeon basketing technique). We have introduced a new stone retrieval procedure called one-surgeon basketing, in which the operator simultaneously handles a ureteroscope and manipulates a basket forceps to catch stone fragments. The aim of this study was to investigate the differences between these two techniques using off-site simulator. Methods Using a high-fidelity bench model simulator of f-URS (Mediskills Standard Scope Trainer, Mediskills, Northampton, UK), we analyzed the results of the tasks performed using each procedure. The participants extracted three selected renal stones located in the renal pelvis, upper calyx, and middle calyx piece by piece using each basketing technique. In the two-surgeon basketing technique, the other participant manipulated the basket forceps as an assistant. The participants were paired for the two-surgeon basketing technique. Task completion time (TCT) was measured. We also analyzed the frequency of opening and closing of the basket forceps during stone catching, the number of times of unintended stone catching, unexpected migration of the selected stone to another renal calyx, and unintended release of the selected stone. Statistical significance was determined using the Mann-Whitney U test and the paired t-test. Results There was no significant difference in TCT between the two procedures. The frequency of opening and closing of the basket forceps during stone catching was significantly lower in the one-surgeon

basketing technique than in the two-surgeon basketing procedure (5.1 +/- 1.8 vs 10.9 +/- 6.6, P = 0.017), especially in cases of upper and middle calyx stones. The forceps were minimally opened as necessary to catch the fragments and guided by a ureteroscope in the one-surgeon basketing technique (scope-led procedure), whereas the forceps were widely opened and closed continuously by the assistant until the fragment is caught in the two-surgeon basketing technique (forceps-led basketing). Conclusions Our findings indicated that the manipulating style of the forceps was different between these two techniques. In the two-surgeon basketing technique, the operator led the ureteroscope near the stone and fixed it in place, and the assistant widely opened and closed the forceps continuously to catch the fragment. On the other hand, in the one-surgeon basketing technique, the basket forceps were minimally opened as necessary and were guided by the ureteroscope to catch the fragment. Widely opened basket forceps might induce sudden ureteroscopic view changes that may lead to inefficient stone extraction and basketing-related complications such as urinary mucosal injury and bleeding. Both techniques might be useful if they would be performed with the scope-led procedure.

Status

CONFERENCE ABSTRACT

Institution

(Okada, Minagawa, Morikawa) Department of Urology, Gyotoku General Hospital, Ichikawa, Japan (Okada, Hamamoto, Inoue, Minagawa, Morikawa, Matsuda, Miura) SMART Study Group, Japan

(Hamamoto) Department of Nephro- Urology, Nagoya City University, Graduate School of Medical Sciences, Nagoya, Japan

(Inoue) Department of Urogenital, Hara Genitourinary Hospital, Hyogo, Japan

Publisher

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Year of Publication

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273.

Comparison of stone clearance by conventional low power and high power dusting during retrograde intrarenal surgery.

Chapagain A., Shrestha A.

Embase

International Journal of Urology. Conference: 17th Urological Association of Asia Congress, UAA 2019. Kuala Lumpur Malaysia. 26(Supplement 2) (pp 86), 2019. Date of Publication: August 2019.

[Conference Abstract]

AN: 629085919

Introduction and objective Although evidence supporting dusting technique for laser lithotripsy during flexible ureteroscopy (fURS) is limited, this method is more popular; especially regarding different laser settings used for dusting. The aim of this study is to compare stone free rate and lasing time in conventional low power and high power holmium YAG laser dusting techniques in RIRS. **Materials and methods** It is a prospective observational comparative study conducted in a single institution by single surgeon over 2-years period from November 2016 to October 2018. A total of 301 cases of renal stone of size upto 20 mm were included. Lithotripsy was performed using [15 Hz/0.5 J (7.5 W)] in low power and [70 Hz/0.3 J (21 W)] in high power settings with 200 micron fiber. Stone clearance was assessed using ultrasonography and X-ray KUB at 1 month. **Results** All the demographic data and stone characteristics in both groups were comparable. The mean operating time was 34.39 +/- 14.4 vs 32.33 +/- 15.6 min ($P = 0.96$), Mean energy usage was 3.94 +/- 3.4 vs 10.34 +/- 6.95 watts ($P < 0.01$), Stone clearance rate was 87.5% vs 91% ($P = 0.91$) between low and high power respectively. Though the mean laser time was 11.06 vs 11.10 min ($P = 1.0$), the lasing time with stone > 15 mm was 17.72 vs 11.61 min ($P < 0.03$) between the groups. **Conclusion** Stone free rate is comparable in both low power and high power holmium YAG laser lithotripsy in RIRS. The lasing time is significantly less in high power with increasing stone size.

Status

CONFERENCE ABSTRACT

Institution

(Chapagain, Shrestha) National Academy of Medical Sciences, Kathmandu, Nepal

Publisher

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274.

Initial experience of modified transperitoneal laparoscopic pyeloplasty combined with a rigid ureteroscope with a deflectable tip(Sun's ureteroscope) for the treatment of ureteropelvic junction obstruction with renal calculi. UPJO <UPJO.>

Ding G., Peng Y., Yang K., Hong P., Lin J., Chen J., Li X., Zhou L.

Embase

Chinese Journal of Urology. 40(9) (pp 680-684), 2019. Date of Publication: 15 Sep 2019.

[Article]

AN: 2007004574

Objective: To evaluate the efficacy and safety of Institution Urology of Peking University modified technique for transperitoneal laparoscopic pyeloplasty combined with deflectable tip rigid ureteroscope(the Sun's ureteroscope) in ureteropelvic junction obstruction(UPJO) complicated with renal calculi.

Method(s): From January 2018 to September 2018, eight patients, including five males and three females, were diagnosed as UPJO with coexistent ipsilateral renal calculi in Peking University First Hospital and Changzheng Hospital of Second Military Medical University. The age ranged from 14 to 50 years(mean 28 years). Four patients had flank pain and one patient had flank pain with hematuria, while the other three patients came without clinical symptom. The BMI ranged from 16.8 to 26.2 kg/m²(mean 22.0 kg/m²). The lesion located on the left side in 4 cases and on the right side in 4 cases. One patient suffered with multiple pelvis stones. Four patients suffered with multiple lower calyceal stones, and 3 patients had solitary lower calyceal stone. The stone size ranged from 2 mm to 10 mm (mean 6.4 mm). 3 cases had slight hydronephrosis and 5 cases had moderate hydronephrosis. Two patients combined with crossing vessels. All patients underwent modified transperitoneal laparoscopic dismembered pyeloplasty with pyelolithotomy. In cases with left lesion, an incision was made for the veress needle 5mm inferior to the costal

margin in the left midclavicular line to establish pneumoperitoneum. A 12-mm camera port was placed 30 mm inferior to the umbilicus and 10 mm lateral to the border of left rectus muscle. Then, a 5 mm operative trocars was inserted at 30mm superior to the umbilicus 10 mm lateral to the border of left rectus muscle. Another 12 mm operative trocar was inserted at the opposite McBurney point. The last 5 mm operative trocar was placed at the veress needle point. After visualizing the pelvis and the proximal ureter at the lower pole of the kidney, a 1.0 cm transverse incision on the lower pole of the pelvis above the obstruction site was made. The Sun's ureteroscope was introduced into the renal pelvis through the 1.0 cm transverse incision via the 12-mm trocar below the umbilicus. Stones in the renal pelvis and calyces were extracted with basket catheters and removed via the port. After the pyelo-nephroscopy, a modified transperitoneal laparoscopic pyeloplasty was made. A F6 double-J stent was inserted into the ureter during the surgery.

Result(s): All surgeries were finished successfully without conversion. The surgical duration ranged from 111 to 185 min(mean 135 min). The estimated blood ranged from 10 to 50 ml(mean 38.8 ml). The hospital stay ranged from 3 to 7 days(mean 4 days). The intraoperative stone free rate was 100%(8/8). No perioperative complications occurred. With the follow-up from 6 to 14.4 months(mean 8.9 months), there was no evidence of obstruction in all patients, as confirmed by symptoms or radiological improvement of hydronephrosis, and two patients found recurrence of renal calculi.

Conclusion(s): Our modified technique for transperitoneal laparoscopic pyeloplasty combined with deflatable tip rigid ureteroscope(the Sun's ureteroscope) is a safe, effective method to manage ureteropelvic junction obstruction with renal calculi.

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Status

Embase

Institution

(Ding, Peng, Yang, Hong, Li, Zhou) Department of Urology, Peking University First Hospital, Institute Urology of Peking University, Beijing 100034, China (Lin, Chen) Department of Urology, Changzheng Hospital, Naval Military Medical University, Shanghai 200003, China

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Year of Publication

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275.

Role of 'dusting and pop-dusting' using a high-powered (100 W) laser machine in the treatment of large stones (≥ 15 mm): prospective outcomes over 16 months.

Pietropaolo A., Jones P., Whitehurst L., Somani B.K.

Embase

Urolithiasis. 47(4) (pp 391-394), 2019. Date of Publication: 01 Aug 2019.

[Article]

AN: 623613020

Ureteroscopy and laser stone fragmentation (URSL) has had recent advancements with the more powerful laser systems with the ability to 'dust' and 'pop-dust' the stone. We wanted to look at the outcomes of this method for large stones (≥ 15 mm) using our new 100 W holmium laser. Over a period of 16 months (January 2017-April 2018), 50 patients underwent URSL for minimum cumulative stone size of ≥ 15 mm. Data were collected prospectively on patient and stone demographics and outcomes of URSL. The laser setting used was a power of 0.3-0.6 J and a frequency of 20-50 Hz using a long-pulse setting with a 272-microm fiber. Fifty patients underwent 55 URSL procedures (5 bilateral procedures) using dusting and pop-dusting settings. The mean age was 58 years (range 2-88 years) with a male:female ratio of 35:15. The mean single and overall stone size were 10.3 mm (3-23 mm) and 21 mm (range 15-52 mm) with two-thirds of all patients (65%) having multiple stones. The stone location was in the kidney (n = 65, 78%), in the ureter (n = 19, 22%) and 5 patients had bilateral renal stones. With a mean operating time of 51 min, the initial and final SFR were 93 and 98%, respectively. A pre-operative stent, access sheath and a post-operative stent were present in 29 (53%), 34 (62%) and 51 (93%) procedures, respectively. Over a mean hospital stay of 0.6 days (74% day-case procedures), there was one Clavien IV complication related to urosepsis but without any other major or minor complications. Dusting and pop-dusting techniques achieve an excellent SFR with low risk of complications even for large stones. This might set a new benchmark for treating large stones, bilateral or multiple stones in a single setting, without the need for secondary procedures in most cases.

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PMC Identifier

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Status

Embase

Institution

(Pietropaolo, Jones, Whitehurst, Somani) Department of Urology, University Hospital
Southampton NHS Trust, Southampton SO16 6YD, United Kingdom (Somani) University of
Southampton, Southampton, United Kingdom

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Year of Publication

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276.

High power holmium:YAG versus thulium fiber laser treatment of kidney stones in dusting mode:
ablation rate and fragment size studies.

Hardy L.A., Vinnichenko V., Fried N.M.

Embase

Lasers in Surgery and Medicine. 51(6) (pp 522-530), 2019. Date of Publication: August 2019.

[Article]

AN: 626027128

Objectives: The experimental Thulium fiber laser (TFL) is currently being studied as a potential
alternative to the gold standard Holmium:YAG laser for lithotripsy. Recent advances in both
Holmium and TFL technology allow operation at similar laser parameters for direct comparison.
The use of a "dusting" mode with low pulse energy (0.2-0.4 J) and high pulse rate (50-80 Hz)

settings, is gaining popularity in lithotripsy due to the desire to produce smaller residual stone fragments during ablation, capable of being spontaneously passed through the urinary tract. Method(s): In this study, Holmium and TFL were directly compared for 'dusting' using three laser groups, G1: 0.2 J/50 Hz/10 W; G2: 0.2 J/80 Hz/16 W; and G3: 0.4 J/80 Hz/32 W. Holmium laser pulse durations ranged from 200 to 350 μ s, while TFL pulse durations ranged from 500 to 1,000 μ s, due to technical limitations for both laser systems. An experimental setup consisting of 1 x 1 cm cuvette with 1 mm sieve was used with continuous laser operation time limited to $\leq$ 5 minutes. Calcium oxalate monohydrate stone samples with a sample size of n = 5 were used for each group, with average initial stone mass ranging from 216 to 297 mg among groups.

Result(s): Holmium laser ablation rates were lower than for TFL at all three settings (G1: 0.3 $\pm$ 0.2 vs. 0.8 $\pm$ 0.2; G2: 0.6 $\pm$ 0.1 vs. 1.0 $\pm$ 0.4; G3: 0.7 $\pm$ 0.2 vs. 1.3 $\pm$ 0.9 mg/s). The TFL also produced a greater percentage by mass of stone dust (fragments $<$ 0.5 mm) than Holmium laser. For all three settings combined, one out of 15 (7%) stones treated with Holmium laser were completely fragmented in $\leq$ 5 minutes compared to nine out of 15 (60%) stones treated with TFL.

Conclusion(s): These preliminary studies demonstrate that the TFL is a promising alternative laser for lithotripsy when operated in dusting mode, producing higher stone ablation rates and smaller stone fragments than the Holmium laser. Clinical studies are warranted. Lasers Surg.

Med. 51:522-530, 2019. © 2019 Wiley Periodicals, Inc.

PMC Identifier

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Status

Embase

Institution

(Hardy, Fried) Department of Physics and Optical Science, University of North Carolina at Charlotte, Charlotte, NC, United States (Vinnichenko) Moscow Engineering Physics Institute, Moscow, Russian Federation

(Fried) McKay Department of Urology, Carolinas Medical Center, Charlotte, NC, United States

(Fried) Brady Urological Institute, Johns Hopkins Medical School, Baltimore, MD, United States

Publisher

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277.

Emerging Laser Techniques for the Management of Stones.

Aldoukhi A.H., Black K.M., Ghani K.R.

Embase

Urologic Clinics of North America. 46(2) (pp 193-205), 2019. Date of Publication: May 2019.

[Review]

AN: 2001652455

Next-generation holmium laser systems provide the user with a range of parameters that can help optimize fragmentation efficiency. Ureteroscopic strategies broadly consist of fragmentation with active retrieval, or dusting, which uses low pulse energy settings to break stones into fine fragments for spontaneous passage. Techniques for dusting include dancing, chipping, and popcorning. The Moses technology is a multipulse mode that may help reduce retropulsion and increase fragmentation. The thulium fiber laser is an emerging laser technology that provides an extensive parameter range for dusting. Future studies are needed to define the role of these technologies and techniques for laser lithotripsy.

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Status

Embase

Institution

(Aldoukhi, Black) Department of Urology, University of Michigan, Medical Sciences Unit I, 1301 Catherine Street, Room 4432, Ann Arbor, MI 48109, United States (Ghani) Department of Urology, University of Michigan, NCRC Building 16, Room 114W, 2800 Plymouth Road, Ann Arbor, MI 48109, United States

Publisher

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278.

Next-Generation Fiberoptic and Digital Ureteroscopes.

Keller E.X., De Coninck V., Traxer O.

Embase

Urologic Clinics of North America. 46(2) (pp 147-163), 2019. Date of Publication: May 2019.

[Review]

AN: 2001782553

The versatility of ureteroscopy is attributable to tremendous technological innovations over the past decades. This article provides an overview on emerging technologies in the light of past achievements, current limitations, and possible future directions. Instrument size reduction, pressure and temperature control, active suction of stone dust, multiple-axis tip deflection, variable working channel positions, robotics, ergonomics, image quality, enhanced imaging technology, three-dimensional visualization, and the competition between reusable and single-use ureteroscopes are detailed. The twentieth century has opened an exciting path for future discoveries in ureteroscopy.

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Institution

(Keller, De Coninck, Traxer) Service d'Urologie, Sorbonne Universite, Assistance-Publique Hopitaux de Paris, Hopital Tenon, GRC ndegree20, Groupe de Recherche Clinique sur la Lithiase Urinaire, 4 rue de la Chine, Paris 75020, France (Keller) Department of Urology, University Hospital Zurich, Zurich, Switzerland

(De Coninck) Department of Urology, AZ Klina, Brasschaat, Belgium

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279.

Innovations in Disposable Technologies for Stone Management.

Khaleel S.S., Borofsky M.S.

Embase

Urologic Clinics of North America. 46(2) (pp 175-184), 2019. Date of Publication: May 2019.

[Review]

AN: 2001782550

Disposable stone retrieval devices are an inherent element of modern-day stone management.

Efforts are being made in several different areas to improve the efficiency of stone removal.

Ureteral access sheaths with pressure control features as well as suction capabilities are being

explored as one such mechanism. Additional efforts are being made to improve stone basket

design, grasping capabilities, and deployment mechanisms. Finally, bioadhesives are being

developed to potentially improve the capability to extract otherwise difficult small stone fragments

and debris from the kidney.

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Institution

(Khaleel, Borofsky) Department of Urology, University of Minnesota, 420 Delaware Street SE,
MMC 394 Mayo, Minneapolis, MN 55455, United States

Publisher

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Year of Publication

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280.

Ureteral stent versus no ureteral stent for ureteroscopy in the management of renal and ureteral calculi.

Ordóñez M., Hwang E.C., Borofsky M., Bakker C.J., Gandhi S., Dahm P.

Embase

Cochrane Database of Systematic Reviews. 2019(2) (no pagination), 2019. Article Number: CD012703. Date of Publication: 06 Feb 2019.

[Review]

AN: 626235640

Ureteroscopy combined with laser stone fragmentation and basketing is a common approach for managing renal and ureteral stones. This procedure is associated with some degree of ureteral trauma. Ureteral trauma may lead to swelling, ureteral obstruction, and flank pain and may require subsequent interventions such as hospital admission or secondary ureteral stent placement. To prevent such issues, urologists often place temporary ureteral stents prophylactically, but the value of doing so remains unclear. Objectives To assess the effects of postoperative ureteral stent placement after uncomplicated ureteroscopy. Search methods We performed a comprehensive search using multiple databases (the Cochrane Library, MEDLINE, Embase, Scopus, Google Scholar, and Web of Science), trials registries, other sources of grey literature, and conference proceedings, up to 01 February 2019. We applied no restrictions on

publication language or status. Selection criteria We included trials in which researchers randomised participants undergoing uncomplicated ureteroscopy to placement of a ureteral stent versus no ureteral stent. Data collection and analysis Two review authors independently classified studies and abstracted data from the included studies. We performed statistical analyses using a random-effects model. We rated the certainty of evidence (CoE) according to the GRADE approach.

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PMC Identifier

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Status

Embase

Institution

(Ordonez, Borofsky) University of Minnesota, Department of Urology, 420 Delaware Street SE,

Minneapolis, MN, United States (Hwang) Chonnam National University Medical School,

Chonnam National University Hwasun Hospital, Department of Urology, Hwasun, China

(Bakker) Health Sciences Libraries, University of Minnesota, Minneapolis, MN, United States

(Gandhi) Dalhousie University, Halifax, Canada

(Dahm) Urology Section, Minneapolis VA Health Care System, Minneapolis, MN, United States

Publisher

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E-mail: vgorayska@wiley.com)

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281.

Stone-free Outcomes of Flexible Ureteroscopy for Renal Calculi Utilizing Computed Tomography Imaging.

York N.E., Zheng M., Elmansy H.M., Rivera M.E., Krambeck A.E., Lingeman J.E.

Embase

Urology. 124 (pp 52-56), 2019. Date of Publication: February 2019.

[Article]

AN: 2001351327

Objective: To assess stone-free rates following ureteroscopy (URS) for renal calculi at our institution using low-dose renal only computed tomography (CT).

Method(s): A retrospective review of patients undergoing flexible URS for renal stones only with subsequent CT scan within 3 months. Meticulous basketing of all stone fragments was performed whenever possible. A "true" zero-fragment stone-free rate was determined by reviewing the CT scan and radiologist's report. Patients with nephrocalcinosis (as determined by visual inspection of papilla at the time of URS) were assigned the "stone-free" category.

Result(s): Flexible URS was performed in 288 renal units of 214 patients with renal calculi from 2013 to 2016. Median preoperative stone size was 6.2 mm with the average kidney containing 6.4 stones. An access sheath was used in 92% of cases. A total of 73% (209/288) renal units were completely stone free by CT assessment. Patients with residual fragments were as follows: 1 mm in 2% (7/288), 2-4 mm in 16% (46/288), and >4 mm in 9% of kidneys (26/288).

Conclusion(s): The true stone-free rate in patients undergoing flexible URS for renal calculi utilizing active basketing of fragments as determined by strict CT assessment was 73%. In patients with residual fragments, the majority are 2-4 mm in size making URS a treatment option for renal calculi with excellent stone-free results.

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Status

Embase

Author NameID

Rivera, Marcelino E.; ORCID: <http://orcid.org/0000-0002-0944-4092>

Institution

(York, Zheng, Elmansy, Rivera, Krambeck, Lingeman) Indiana University School of Medicine, Department of Urology, Indianapolis, IN, United States

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Year of Publication

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282.

A Technique to Flush Out Stone Fragments Through a Ureteral Access Sheath during Retrograde Intrarenal Surgery.

Tapiero S., Ghamarian P., Clayman R.

Embase

Journal of Endourology Case Reports. 5(4) (pp 161-163), 2019. Date of Publication: December 2019.

[Article]

AN: 630080319

Retrograde intrarenal surgery (RIRS) has become the preferred treatment option for selected renal stones <20 mm. However, laser fragmentation of stones often results in residual small fragments that may prompt subsequent stone events. We describe a simple technique to facilitate removal of these fragments. Case Presentation: A 68-year-old woman underwent elective RIRS for a 13 mm right renal pelvic stone. After laser fragmentation of the stone there were numerous <2 mm fragments too small to allow removal by a standard retrieval basket (i.e., NCircle and NCompass Nitinol Stone Extractors, Cook Medical, Bloomington, IN). A smaller ureteral access sheath (UAS) was advanced into the kidney within the preexisting larger UAS and, using a connecting piece from a Foley catheter, stone fragments were suctioned out through the smaller sheath. Stone-free status was corroborated endoscopically and with postoperative CT.

Conclusion(s): Stone fragments were flushed from the kidney using a simple irrigation technique through a coaxial UAS.

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Embase

Institution

(Tapiero, Ghamarian, Clayman) Department of Urology, University of California, 333 City Boulevard West Suite 2100, Orange, CA 92868, United States

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Year of Publication

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283.

Are We Cutting Ourselves Short? Laser Lithotripsy Performance Based on Differences in Fiber-tip Preparation.

Aloudoukhi A.H., Knudsen B.E., Black K.M., Hall T.L., Roberts W.W., Ghani K.R.

Embase

Urology. 134 (pp 79-83), 2019. Date of Publication: December 2019.

[Article]

AN: 2003306043

Objective: To better understand the impact of laser fiber-tip configuration on lithotripsy performance, we undertook an in vitro study comparing 3 fiber-tip configurations: (1) new (single-use), (2) cleaved (reusable), and (3) coated (cut with scissors).

Method(s): Lithotripsy was performed using a Ho:YAG laser utilizing fragmentation (1 J x 10 Hz) and dusting (0.5 J x 20 Hz) settings. BegoStones were fragmented with a laser fiber advancing at a speed of 1 mm/s (220 seconds of activation). Three fiber-tip configurations were tested: new single-use standard (242 µm core) and cleaved (272 µm core), compared to the same fiber-tip coated/cut flush with scissors, respectively. Study outcome was difference in stone mass before and after each experiment. Power output was measured using a power meter.

Result(s): Fragmentation for new or cleaved fibers was greater than the coated/cut flush fiber-tip ($P < .05$). For 1 J x 10 Hz and 0.5 J x 20 Hz settings, fragmentation was 59% and 75% higher with

new fiber-tip compared to the coated/cut flush fiber-tip, respectively. For 1J x 10 Hz and 0.5 J x 20 Hz settings, fragmentation was 51% and 45% higher with cleaved fiber-tip compared to the coated/cut flush fiber-tip, respectively. Power output at the end of laser activation was higher for new and cleaved fiber-tips.

Conclusion(s): New and cleaved laser fibers demonstrated superior lithotripsy performance compared to fibers that were coated/cut flush with scissors. Cutting single-use laser fibers risks damaging the fiber-tip which can disperse the energy and reduce lithotripsy efficiency.

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Embase

Institution

(Aldoukhi, Black, Roberts, Ghani) Department of Urology, University of Michigan, Ann Arbor, MI, United States (Knudsen) Department of Urology, Ohio State University, Columbus, OHMI, United States

(Hall, Roberts) Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States

Publisher

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Year of Publication

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284.

Determination of urinary stone composition using biochemical analysis of fluid samples taken during ureterorenoscopic laser lithotripsy.

Arslan I.E., Kilicarslan H., Cicek M.C., Gunseren K.O., Ocakoglu G., Kaygisiz O.

Embase

International Urology and Nephrology. 51(11) (pp 1941-1947), 2019. Date of Publication: 01 Nov 2019.

[Article]

AN: 2002349006

Purpose: The present study aims to biochemically analyze the fluid samples containing stone dust taken during the perioperative period to determine the role of fluid in the prediction of stones in patients treated with ureterorenoscopic procedures. Our secondary aim is to investigate the role of both fluid analysis and stone analysis in predicting the results of the metabolic analysis.

Method(s): Comparative analyses were performed using fluid samples containing stone dust from 93 patients. Biochemical analysis of fluid containing stone dust was conducted; stone fragments were examined at a separate location using X-ray diffractometry(XRD). Metabolic analysis was performed to patients who provided stone-free status 1 month later. The results of chemical analysis were compared with the results of the XRD analysis.

Result(s): Patients' stone type was determined with high accuracy using biochemical analysis.

Differences were noted in ten patients following biochemical analysis and XRD analysis.

Biochemical analysis predicted metabolic disorders in more patients than XRD analysis, particularly for those patients with multiple stone compositions. However, no significant differences between the results of biochemical and XRD analysis methods were found ($\kappa = 0.27$; $p = 0.002$). Moreover, biochemical analysis results revealed metabolic disorders in five patients; these findings were missed by XRD analysis.

Conclusion(s): Biochemical analysis of fluid taken perioperatively during ureterorenoscopic laser lithotripsy to treat urinary system stone disease was found to determine stone composition with high accuracy. Biochemical analysis of fluid samples taken during the perioperative period is, thus, an easy, reliable and cost-effective test to assess stone composition in patients undergoing ureterorenoscopic procedures.

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Status

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Author NameID

Arslan, I. Ethem; ORCID: <http://orcid.org/0000-0002-9245-1241>

Institution

(Arslan, Kilicarslan, Cicek, Gunseren, Kaygisiz) Department of Urology, Uludag University, Bursa, Turkey (Ocakoglu) Department of Biostatistics, Uludag University, Bursa, Turkey

Publisher

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Year of Publication

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285.

Quantitative Assessment of Effectiveness of Ultrasonic Propulsion of Kidney Stones.

Dai J.C., Sorensen M.D., Chang H.C., Samson P.C., Dunmire B., Cunitz B.W., Thiel J., Liu Z., Bailey M.R., Harper J.D.

Embase

Journal of Endourology. 33(10) (pp 850-857), 2019. Date of Publication: October 2019.

[Article]

AN: 629660187

Purpose: Ultrasonic propulsion is an investigative modality to noninvasively image and reposition urinary stones. Our goals were to test safety and effectiveness of new acoustic exposure conditions from a new transducer, and to use simultaneous ureteroscopic and ultrasonic observation to quantify stone repositioning.

Material(s) and Method(s): During operation, ultrasonic propulsion was applied transcutaneously, whereas stone targets were visualized ureteroscopically. Exposures were 350 kHz frequency, ≤ 200 W/cm² focal intensity, and ≤ 3 -second bursts per push. Ureteroscope and ultrasound (US) videos were recorded. Video clips with and without stone motion were randomized and scored for motion ≥ 3 mm by independent reviewers blinded to the exposures. Subjects were followed with telephone calls, imaging, and chart review for adverse events.

Result(s): The investigative treatment was used in 18 subjects and 19 kidneys. A total of 62 stone targets were treated ranging in size from a collection of "dust" to 15 mm. Subjects received an average of 17 ± 14 propulsion bursts (per kidney) for a total average exposure time of 40 ± 40

seconds. Independent reviewers scored at least one stone movement ≥ 3 mm in 18 of 19 kidneys (95%) from the ureteroscope videos and in 15 of 19 kidneys (79%) from the US videos. This difference was probably because of motion out of the US imaging plane. Treatment repositioned stones in two cases that would have otherwise required basket repositioning. No serious adverse events were observed with the device or procedure.

Conclusion(s): Ultrasonic propulsion was shown to be safe, and it effectively repositioned stones in 95% of kidneys despite positioning and access restrictions caused by working in an operating room on anesthetized subjects.

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Status

Embase

Institution

(Dai, Sorensen, Chang, Samson, Bailey, Harper) Department of Urology, University of Washington, Seattle, WA, United States (Sorensen) Division of Urology, Veterans Affairs Puget Sound Health Care System, Seattle, WA, United States

(Dunmire, Cunitz, Thiel, Bailey) Center for Industrial and Medical Ultrasound, Applied Physics Laboratory, University of Washington, 1013 NE 40th Street, Seattle, WA 98105, United States

(Liu) Department of Biostatistics, Indiana University, Indianapolis, IN, United States

(Chang) Department of Urology, Kaiser Permanente Santa Clara Medical Center, Santa Clara, CA, United States

(Samson) Department of Urology, Weill Cornell Medical College, New York, NY, United States

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Ureteroscopic lithotripsy for ureteral stones in children using holmium: yag laser energy: results of a multicentric survey.

Esposito C., Masieri L., Bagnara V., Tokar B., Golebiewski A., Escolino M.

Embase

Journal of Pediatric Urology. 15(4) (pp 391.e1-391.e7), 2019. Date of Publication: August 2019.

[Article]

AN: 2002082484

Background: Holmium:YAG (Ho:YAG) laser lithotripsy has broadened the indications for ureteroscopic stone managements in adults, but few evidence are currently available in the pediatric population.

Objective(s): This article aimed to assess the outcome of Ho:YAG laser lithotripsy during retrograde ureteroscopic management of ureteral stones in different locations in children. Study design: The medical records of 149 patients (71 boys and 78 girls; median age 9.2 years) treated with Ho:YAG laser ureteroscopic lithotripsy in five international pediatric urology units over the last 5 years were retrospectively reviewed. Exclusion criteria included patients with renal calculi and/or with a history of ipsilateral stricture, renal failure, active urinary tract infection, or coagulation disorder.

Result(s): Stones were treated with dusting technique in all cases. The median stone size was 10.3 mm (range 5-17). Stones were located in the distal ureter in 77 cases (51.7%), in the middle ureter in 23 cases (15.4%), and in the proximal ureter in 49 cases (32.9%). The median operative time was 29.8 min (range 20-95). Intra-operative complications included five bleedings (3.3%) and seven stone retropulsions (4.7%). Overall stone-free rate was 97.3%. Overall postoperative complications rate was 4.0% and included two cases of stent migration (1.3%) (Clavien II) and four residual stone fragments (2.7%) that were successfully treated using the same technique (Clavien IIIb). On multivariate analysis, re-operation rate was significantly dependent on the proximal stone location and presence of residual fragments >2 mm ($P = 0.001$).

Discussion(s): This study is one of the largest pediatric series among those published until now. The study series reported a shorter operative time, a higher success rate, and a lower postoperative complications rate compared with previous series. A limitation of this study is that stone-free rates may be somewhat inaccurate using ultrasonography and plain X-ray compared with computed tomography (CT); the study's 97.3% success rate may be overestimated because no CT scan was done postoperatively to check the stone-free rate. Other limitations of this article include its retrospective nature, the multi-institutional participation, and the heterogeneous patient collective.

Conclusion(s): The Ho:YAG laser ureteroscopic lithotripsy seems to be an excellent first-line treatment for children with ureteral stones, independently from primary location and size. However, patients with proximal ureteral stones and residual fragments >2 mm reported a higher risk to require a secondary procedure to become stone-free. Combination of techniques as well as appropriate endourologic tools are key points for the success of the procedure regardless of stones' size and location.

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Institution

(Esposito, Escolino) Division of Pediatric Surgery, Federico II University of Naples, Naples, Italy

(Masieri) Division of Pediatric Urology, Meyer Children Hospital, Florence, Italy

(Bagnara) Division of Pediatric Urology, Morgagni Policlinico Hospital, Catania, Italy

(Tokar) Division of Pediatric Surgery, Eskisehir Osmangazi University, Eskisehir, Turkey

(Golebiewski) Division of Pediatric Urology, Medical University in Gdansk, Pomerania, Poland

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287.

Dusting, fragmenting, popcorning or dustmenting?.

Wenzel M., Bultitude M., Salem J.

Embase

Current Opinion in Urology. 29(2) (pp 108-112), 2019. Date of Publication: 01 Mar 2019.

[Review]

AN: 629169587

Purpose of reviewThe present review identifies the latest scientific investigations within the fields of fragmenting and dusting to discuss optimizing treatment. In addition, new settings such as 'popcorning' are scrutinized carefully.
Recent findingsDuring the past years, endoscopic techniques have continuously developed and changed the management of the treatment of kidney stones using ureteroscopy (URS). The most currently used energy source for stone disintegration is holmium laser lithotripsy. This technique offers different options for the surgeons to treat their patients suffering from kidney stones.
SummaryURS with the holmium laser allows surgeons to use a variety of different strategies for treating urinary stones. There are two techniques which are most frequently used within this field: firstly fragmenting, using low frequencies and high pulse energy to break stones into small fragments before removal. On the other hand, dusting has been popularized in the field of endourology in recent years. This uses high frequencies and low pulse energy to form fine dust particles which then pass spontaneously down the ureter.

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Embase

Institution

(Wenzel) Klinik für Urologie, Universitätsklinikum Frankfurt, Frankfurt, Germany (Bultitude)

Department of Urology, Guy's and St. Thomas' NHS Foundation Trust, United Kingdom

(Salem) Klinik und Poliklinik für Urologie, Universitätsklinikum Köln, Kerpener Str. 62, Köln 50937, Germany

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288.

Ho:YAG laser lithotripsy: Recent innovations.

Becker B., Gross A.J., Netsch C.

Embase

Current Opinion in Urology. 29(2) (pp 103-107), 2019. Date of Publication: 01 Mar 2019.

[Review]

AN: 629169535

Purpose of reviewThe aim of this study was to summarize the recent innovations of the holmium laser with special respect to lithotripsy. Therefore, we reviewed and discussed the most recent and pivotal publications on this topic.
Recent findingsThe current literature underlines Holmium:yttrium-aluminium-garnet (Ho:YAG) lithotripsy as a well tolerated and efficient method to treat urinary calculi. Because of modifiable adjustments of pulse energy, pulse frequency, and pulse length, especially with newer generations of holmium lasers, urologists can accurately choose between the 'fragmentation' and 'dusting' technique with its alterations. Recently, the 'Moses mode' as a new feature incorporated in the Lumenis Pulse P120H holmium laser showed less retropulsion with higher rates of stone ablation because of an improved energy transmission from the laser fiber towards the targeted calculus in in-vitro studies.
SummaryBased on technological developments, Ho:YAG laser lithotripsy has become more efficient in reducing retropulsion and increasing stone ablation volume. However, despite its widespread use as a lithotripter, a newly developed thulium fiber laser, which has already shown promising results in experimental studies, could become an alternative in future practice.

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Institution

(Becker, Gross, Netsch) Department of Urology, Asklepios Hospital Barmbek, Rubenkamp 220, Hamburg 22291, Germany

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Year of Publication

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289.

Reducing kidney motion: Optimizing anesthesia and combining respiratory support for retrograde intrarenal surgery: A pilot study.

Gadzhiev N., Oibolatov U., Kolotilov L., Parvanyan S., Akopyan G., Petrov S., Cottone C.M., Sung J., Okhunov Z.

Embase

BMC Urology. 19(1) (no pagination), 2019. Article Number: 61. Date of Publication: 05 Jul 2019.

[Article]

AN: 629101136

Background: One of the greatest challenges presented with RIRS is the potential for movement of the stone within the operative field associated with diaphragm and chest respiratory excursions due to mechanical ventilation. To overcome this challenge, we propose in this pilot study a new general anesthesia technique combining high frequency jet ventilation (HFJV) with small volume mechanical ventilation (SVMV). Data regarding safety, feasibility and surgeons' impression was assessed.

Method(s): Patients undergoing RIRS for kidney stones from November 2017 to May 2018 were prospectively recruited to participate in the study. In each case after the beginning of general anesthesia (GA) with mechanical ventilation (MV) surgeons were asked to assess the mobility of the operative field and conditions for laser lithotripsy according to the developed questionnaire scale. The questionnaire consisted of 5 degrees of assessment of kidney mobility and each question was scored from 1 to 5, 1 being very mobile (extremely poor conditions for dusting) and 5 completely immobile (Ideal conditions for dusting). After the assessment GA was modified with combined respiratory support (CRS), reducing tidal volume and respiratory rate (small volume mechanical ventilation, SVMV) and applying in the same time transcatheter high frequency jet

ventilation (HFJV) inside the closed circuit. After beginning of CRS, surgeons were once again asked to assess the mobility of the operative field and the conditions for laser lithotripsy. Main ventilation parameters were recorded and compared in both regimens.

Result(s): A total of 38 patients were included in the study. The mean age was 49 (range 45-53) with a mean stone size of 10 mm (range 10-14) and Hounsfield unit of 1060 (range 930-1190). All patients underwent successful RIRS and no intraoperative complications occurred throughout the duration of the study. A statistically significant difference between ventilation parameters prior to and after CRS institution was detected in all cases, however their clinical impact was negligible. Despite this, assessment via the questionnaire scale point values varied significantly before and after the application of CRS and were 2.3 (2.1; 2.6) and 3.8 (3.7; 4.0) respectively ($p < 0.001$).

Conclusion(s): The novel combined respiratory approach consisting of HFJV and SVMV appears to provide better conditions for stone dusting through reduced respiratory kidney motion and is not associated with adverse health effects or complications. Trial registration: NCT03999255, date of registration: 25th June 2019 (retrospectively registered).

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Author NameID

Okhunov, Zhamshid; ORCID: <http://orcid.org/0000-0001-8294-933X>

Institution

(Gadzhiev, Petrov) Department of Urology, Pavlov First Saint Petersburg State Medical University, Lva Tolstogo 17, Saint-Petersburg 197342, Russian Federation (Oibolatov, Kolotilov, Parvanyan) Department of Anesthesiology, Nikiforov Center of Emergency Medicine, Optikov 54, Saint-Petersburg 197448, Russian Federation

(Akopyan) Department of Urology, Sechenov First Moscow State Medical University, Optikov 54, Saint-Petersburg 197448, Russian Federation

(Cottone, Sung, Okhunov) Department of Urology, University of California Irvine, 333 City Boulevard West, Orange, CA 92868, United States

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290.

Re: The Impact of Dust and Confinement on Fragmentation of Kidney Stones by Shockwave
Lithotripsy in Tissue Phantoms.

Assimos D.G.

Embase

Journal of Urology. 201(5) (pp 854), 2019. Date of Publication: 01 May 2019.

[Note]

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291.

Role of Residual Fragments on the Risk of Repeat Surgery after Flexible Ureteroscopy and Laser Lithotripsy: Single Center Study.

Iremashvili V., Li S., Penniston K.L., Best S.L., Hedican S.P., Nakada S.Y.

Embase

Journal of Urology. 201(2) (pp 358-363), 2019. Date of Publication: 01 Feb 2019.

[Article]

AN: 628754749

Purpose:We analyzed the impact of residual stone fragments seen on abdominal X-ray after ureteroscopy and laser lithotripsy on the risk of repeat surgical intervention.**Materials and Methods:**Our study included 781 patients (802 renal units) who underwent ureteroscopy and laser lithotripsy with abdominal X-ray within 3 months postoperatively and who had at least 1 year of followup. Ureteroscopy and laser lithotripsy were performed using the dusting technique. We analyzed the association between surgical recurrence-free survival and the size of the largest residual fragment.

Result(s):During a median followup of 4.2 years repeat surgery was performed on 161 renal units (20%). Of the repeat interventions 75% were done for symptomatic nephrolithiasis. Postoperative imaging showed residual stone fragments in 42% of cases. In the entire group the risk of repeat surgery was increased in renal units with residual fragments greater than 2 mm. The effect of the size of residual fragments on the risk of surgical recurrence varied by patient body mass index. It was much larger in nonobese subjects, who were at increased risk for repeat surgery with residual fragments of any size. In the obese subgroup only fragments greater than 2 mm increased the risk of surgical recurrence.

Conclusion(s):The association between the size of residual stone fragments detected by abdominal X-ray after ureteroscopy and laser lithotripsy, and the risk of repeat surgical intervention depends on patient body mass index. Nonobese patients with residual stone fragments of any size are at increased risk for repeat intervention compared to those with a negative abdominal X-ray. The predictive value of abdominal X-ray after ureteroscopy and laser lithotripsy is limited in obese patients.

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Institution

(Iremashvili, Li, Penniston, Best, Hedican, Nakada) Department of Urology, University of Wisconsin, School of Medicine and Public Health, Medical Foundation Centennial Building, 1685 Highland Ave., Madison, WI 53705, United States

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292.

Will Stone Density Stop Being a Key Factor in Endourology? the Impact of Stone Density on Laser Time Using Lumenis Laser p120w and Standard 20 W Laser: A Comparative Study. Mekayten M., Lorber A., Katafigiotis I., Sfoungaristos S., Leotsakos I., Heifetz E.M., Yutkin V., Gofrit O.N., Duvdevani M.

Embase

Journal of Endourology. 33(7) (pp 585-589), 2019. Date of Publication: July 2019.

[Article]

AN: 628530705

Introduction and Objectives: Ureteroscopy is the gold standard for most urinary tract calculi. Our institute recently incorporated a powerful 120 W holmium laser machine integrating innovative technology (Lumenis MOSES Pulse™120H Holmium:YAG laser; Lumenis Ltd.). In this retrospective comparative study, we evaluated the influence of stone density on laser dusting time in a high-power 120 W laser machine vs a standard 20 W machine (Dornier Medilas H20 Holmium:YAG laser; Dornier Ltd.) Methods: We conducted a retrospective review of medical records of patients who underwent ureteroscopy during the years 2013-2018 for a solitary stone. Stone and clinical characteristics, among other parameters, have been evaluated, including the total laser time until complete stone dusting.

Result(s): Among 631 eligible patients, 462 were treated with a 20 W standard laser and 169 patients with a p120w laser machine. Overall laser time was less than half with p120w laser vs d20w (195 seconds vs 397.14 seconds, p-value <0.001). Multivariate regression demonstrated 234.91 seconds shorter laser time with a p120w laser while controlling confounders such as stone volume, hydronephrosis, and location (p value <0.0001). This pattern was demonstrated in all stone densities. The association between laser dusting time per stone volume and stone density demonstrated relatively constant laser time when using p120w laser, even for hard stones. When the standard 20 W laser was used, laser time was longer in each stone density. Moreover, a stone density of 1164 HU and more demonstrated an upward shift of laser time to stone density curve in standard d20w laser group only.

Conclusion(s): Time to complete stone dusting using p120w laser is extremely shorter, approximately half, comparing with the standard 20 W laser. This pattern is robust and even exponential when evaluating laser time per stone density, especially in hard stones. A new horizon of powerful innovative laser technology will enable to improve endourology practice and patients' care.

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PMC Identifier

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Institution

(Mekayten, Lorber, Leotsakos, Yutkin, Gofrit, Duvdevani) Urology Department, Hadassah Hebrew University Hospital, PO Box 12000, Ein Kerem, Jerusalem 91120, Israel (Katafigiotis) 1st

University Urology Clinic, Laiko Hospital, Athens, Greece

(Sfoungaristos) 1st Department of Urology, G. Gennimatas Hospital, Aristotle University, Thessaloniki, Greece

(Heifetz) Jerusalem College of Technology, Jerusalem, Israel

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Year of Publication

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293.

Treatment of urinary calculi after Yang-Monti ileal ureter reconstruction: A case report.

Wang Z., Sun Z., Luo G., Tian Y., Yang X.

Embase

BMC Urology. 19(1) (no pagination), 2019. Article Number: 12. Date of Publication: 30 Jan 2019.

[Article]

AN: 626170304

Background: The development of ureteral calculi after Yang-Monti ileal ureter reconstruction has not been reported. This study was performed to explore the safety and effectiveness of ureteroscopy combined with laser lithotripsy in the treatment of ipsilateral lower ureteral calculi and lower calyceal calculi after Yang-Monti ileal ureter reconstruction. Case presentation: A 48-year-old man was admitted to our hospital with ipsilateral distal ureteral calculi and ipsilateral lower calyceal calculi. One year prior to this admission, the patient had undergone Yang-Monti ileal ureter reconstruction due to long-segment ureteral stenosis. After conservative treatment failed, we used a rigid ureteroscope with a holmium laser to break up the distal ureteral calculi, and successfully removed the renal calculi with a digital flexible ureteroscope and basket extractor.

Conclusion(s): The successful outcome of the present case suggests that ureteroscopy combined with laser lithotripsy is a valuable option for the management of urinary calculi following Yang-Monti ileal ureter reconstruction.

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PMC Identifier

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Institution

(Wang) Basic Medical College, Guizhou Medical University, Guiyang 550004, China (Wang, Sun, Luo, Tian, Yang) Department of Urology, Guizhou Provincial People's Hospital, No. 83 East Zhongshan Road, Guiyang, Guizhou 550002, China

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294.

Dusting versus fragmentation for renal stones during flexible ureteroscopy.

El-Nahas A.R., Almousawi S., Alqattan Y., Alqadri I.M., Al-Shaiji T.F., Al-Terki A.

Embase

Arab Journal of Urology. 17(2) (pp 138-142), 2019. Date of Publication: 03 Apr 2019.

[Article]

AN: 627498290

Objectives: To compare stone dusting and spontaneous passage vs fragmentation and active fragment retrieval during flexible ureteroscopy (fURS) for renal calculi.

Patients and Methods: The study included patients who underwent fURS and holmium laser lithotripsy for renal calculi from January 2015 to March 2017. Dusting was done using low energy and high frequency (0.3-0.5 J and 15-20 Hz, respectively), and fragmentation was done with higher energy and lower frequency (1-1.2 J and 6-10 Hz, respectively) and then stone fragments were extracted using a basket. The stone-free rate (SFR) was evaluated after 2 months with non-contrast computed tomography. Operative time, complication rate, SFR, and the need for secondary procedures were compared.

Result(s): The study included 107 consecutive patients, with a mean (SD) age of 49 (13) years. Dusting was performed in 51 patients and fragmentation in 56. The patients' demographics, laboratory tests, preoperative stents, stone and renal characteristics were comparable for both groups. Operative time was significantly shorter for dusting than fragmentation (76 vs 91 min, $P = 0.009$). Complication rates were comparable between the groups (7.8% for dusting and 8.9% for fragmentation, $P = 0.840$). The mean hospital stay was comparable for both groups ($P = 0.686$). The SFR was significantly better in fragmentation group (78.6%) compared with the dusting group

(58.6%, $P = 0.035$). The need for a secondary procedure was 33.3% in the dusting group and 23.3% in fragmentation group ($P = 0.244$).

Conclusion(s): During fURS for renal stones, the dusting technique had a significantly shorter operation time, whilst the fragmentation technique led to a significantly better SFR. Both techniques have comparable safety, hospital stay, and requirement for secondary procedures.

Abbreviations: fURS: flexible ureteroscopy/ureteroscope; ICU: intensive care unit; KUB: plain abdominal radiograph of the kidney, ureter and bladder; NCCT: non-contrast CT; SFR: stone-free rate; SWL: shockwave lithotripsy; UAS: ureteric access sheath.

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Institution

(El-Nahas, Almousawi, Alqattan, Alqadri, Al-Shaiji, Al-Terki) Urology Unit, Surgery Department, Al-Amiri Hospital, Kuwait City, Kuwait (El-Nahas) Urology and Nephrology Center, Mansoura University, Mansoura, Egypt

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295.

Editorial Comment on: The Impact of Dust and Confinement on Fragmentation of Kidney Stones by Shockwave Lithotripsy in Tissue Phantoms by Randad et al.(From: Randad A, Ahn J, Bailey MR, et al. J Endourol 2019;33:400-406; DOI: 10.1089/end.2018.0516).

Zhong P.

Embase

Journal of Endourology. 33(5) (pp 407), 2019. Date of Publication: May 2019.

[Note]

AN: 627692201

PMC Identifier

30808186 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=30808186>]

Status

Embase

Institution

(Zhong) Department of Mechanical Engineering and Materials Science, Duke University, 100 Science Drive, Durham, NC 27708, United States

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Year of Publication

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296.

The Impact of Dust and Confinement on Fragmentation of Kidney Stones by Shockwave Lithotripsy in Tissue Phantoms.

Randad A., Ahn J., Bailey M.R., Kreider W., Harper J.D., Sorensen M.D., Maxwell A.D.

Embase

Journal of Endourology. 33(5) (pp 400-406), 2019. Date of Publication: May 2019.

[Article]

AN: 627691768

The goal was to test whether stone composition and kidney phantom configuration affected comminution in extracorporeal shockwave lithotripsy (SWL) laboratory tests. Confinement may

enhance the accumulation of dust and associated cavitation bubbles in the fluid surrounding the stone. It is known that high shockwave delivery rates in SWL are less effective because bubbles generated by one shockwave do not have sufficient time to dissolve, thereby shielding the next shockwave.

Material(s) and Method(s): Experiments were conducted with a lithotripter coupled to a water bath. The rate of comminution was measured by weighing fragments over 2 mm at 5-minute time points. First, plaster and crystal stones were broken in four phantoms: a nylon wire mesh, an open polyvinyl chloride (PVC) cup, a closed PVC cup, and an anatomical kidney model - the phantoms have decreasing fluid volumes around the stone. Second, the fluid volume in the kidney model was flushed with water at different rates (0, 7, and 86 mL/min) to remove dust.

Result(s): The efficiency of breakage of stones decreases for the dust emitting plaster stones (percentage of breakage in 5 minutes decreased from 92% $\pm$ 2% [n = 3] in wire mesh to 19% $\pm$ 3% [n = 3] in model calix) with increasing confinement, but not for the calcite crystal stones that produced little dust (percentage of breakage changed from 87% $\pm$ 3% [n = 3] in wire mesh to 81% $\pm$ 3% [n = 3] in kidney model). Flushing the kidney phantom at the fastest rate improved comminution of smaller plaster stones by 27%.

Conclusion(s): Phantoms restricting dispersion of dust were found to affect stone breakage in SWL and in vitro experiments should replicate kidney environments. The dust around the stone and potential cavitation may shield the stone from shockwaves and reduce efficacy of SWL. Understanding of stone composition and degree of hydronephrosis could be used to adapt patient-specific protocols.

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Institution

(Randad, Bailey) Department of Mechanical Engineering, University of Washington, 1606 San Juan Road, Seattle, WA 98195, United States (Randad, Bailey, Kreider, Maxwell) Center for Industrial and Medical Ultrasound, Applied Physics Laboratory, University of Washington, Seattle, WA, United States

(Ahn, Bailey, Harper, Sorensen, Maxwell) Department of Urology, University of Washington School of Medicine, Seattle, WA, United States

(Sorensen) VA Puget Sound Health Care System, Seattle, United States

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297.

Watch your distance: The role of laser fiber working distance on fragmentation when altering pulse width or modulation.

Aldoukhi A.H., Roberts W.W., Hall T.L., Ghani K.R.

Embase

Journal of Endourology. 33(2) (pp 120-126), 2019. Date of Publication: February 2019.

[Article]

AN: 626448548

Introduction: The Moses technology for the Ho:YAG laser introduces a pulse-shape modulation that optimizes energy delivery through water and can be utilized for lithotripsy at a distance from the target. In light of this advance, we undertook an in vitro study to assess the effect of fiber tip to stone distance on fragmentation, incorporating the use of a variety of pulse modes.

Method(s): Experiments were conducted with a three-dimensional (3D) positioning system, a 30 mm flat plate BegoStone, and a 230 µm core laser fiber connected to a 120W holmium laser utilizing short pulse (SP), long pulse (LP), Moses contact (MC), and Moses distance (MD) modes. Ablation crater volume was measured by 3D confocal microscopy, after a single pulse (1.0 J) was activated with the fiber tip positioned at 0, 0.5, 1, 2, and 3 mm from the stone. Fragmentation efficiency (1 J x 10 Hz) was assessed with the fiber tip at 0 and 1 mm distance, programmed to fragment the stone over 3 minutes. Fragmentation was defined as difference in stone mass before and after each experiment.

Result(s): For all tested pulse modes, ablation crater volume and fragmentation were greatest when the fiber tip was in contact with the stone. Ablation declined as the working distance increased with no ablation occurring at 3 mm. At 1 mm distance, the ablation crater volume using MD mode was significantly higher when compared with SP, LP, and MC modes ($p < 0.05$).

Compared with all pulse modes tested, MD resulted in 28% and 39% greater fragmentation at both 0 and 1 mm working distances, respectively ($p < 0.05$).

Conclusion(s): Holmium laser lithotripsy is significantly affected by fiber working distance with the greatest ablation obtained with the fiber in contact with the stone. At 0 and 1 mm distance, MD had the greatest fragmentation efficiency, suggesting this mode may have advantages during ureteroscopy.

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Institution

(Aldoukhi, Roberts, Ghani) Department of Urology, University of Michigan, Medical Sciences Unit i, 1301 Catherine Street, Ann Arbor, MI 48109-2900, United States (Roberts, Hall) Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI, United States

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298.

High-frequency dusting using a 120-W Holmium laser during flexible ureteroscopy: A single-centre experience.

Maugeri O., Peretti D., Dalmasso E., Venzano F., Bernardi D., Chiapello G., Dadone C., Oppezzi G., Mediago M.

Embase

European Urology, Supplements. Conference: Italian Society of Urology 92nd Annual Congress 2019. Venice Italy. 18(9) (pp e3304), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 2004021548

Aim of the study: Modern concepts of operative ureteroscopy for the management of renal stones are changing. The advent of new technologies, such as more powerful lasers, has been making available innovative methods for performing endoscopic interventions to treat urolithiasis. The aim of this work is to present a detailed report of our experience about Low Energy (LE)/High Frequency (HF) lithotripsy by using a 120-W Holmium laser and to propose our technique.

Material(s) and Method(s): A retrospective analysis of our prospectively maintained database was conducted. All patients who underwent Retrograde IntraRenal Surgery (RIRS) in our Centre for renal stones have been evaluated for the study. All procedures were performed by 2 expert surgeons by means of our 120-W high-power Ho:YAG system (Lumenis, Inc.). Lithotripsy was performed using LE/HF settings (0.2-0.5 J / 50-80 Hz - 10-40 W) with Long Pulse Width (LPW) in order to reduce stone retropulsion. Our technique consists in 3 phases: 1) First stage contact Laser lithotripsy (LE/HF/LPW dusting - 0,5 J/50 Hz or 02 J/70 Hz in relation to stone Hardness); 2) Extraction of main fragments (both for treatment and for stone analysis); 3) Second stage non-contact Laser lithotripsy (LE/HF/Short Pulse Width Pop Dusting - 0,5 J /80 Hz). In all cases at the end of intervention a JJ stent was left for ureter protection. All patients underwent a 3 months post-operative therapy with potassium citrate (3025,4 mg/100 ml/die) and magnesium citrate (1136,4 mg/100 ml/die). Follow-up was conducted with a CT scan performed at 3 months after RIRS. Procedure success was defined as stone-free or presence of ≤ 4 mm fragments (Clinical Insignificant Residual Fragments - CIRF). Complications were registered and classified using Clavien-Dindo Grading System.

Result(s): From December 2017 to January 2019 a total number of 104 LE/HF/LPW RIRS had been performed in our Centre. Demographics and baseline characteristics are reported in Table 1. Mean operative time was 59 (SD+/-23) min. Early post-operative complications were reported in 4,6% of interventions: 1 patient had nausea and vomiting (Clavien-Dindo Grade I) and 4 patients developed urosepsis (Clavien-Dindo Grade II). All septic complications were treated with intravenous antibiotic therapy successfully. Overall success rate at 3 months CT scan was 88,5% (71,2% stone-free and 17,3% CIRF). 10 patients needed re-intervention (second-look RIRS). Stone analysis revealed: 51 patients had Calcium oxalate monohydrate stones (49,0%), 15 p. (patients) had Calcium oxalate dihydrate stones (14,5%), 10 p. had Uric acid stones (9,6%), 25 p. had mixed Calcium-Uric acid stones (24%) and 3 p. had Struvite stones (2,9%). [Table presented]

Discussion: The application of LE/HF/LPW RIRS for the treatment of renal stones seems to be safe and effective, in terms of positive success rate, low number of complications and reduced

operative time. Further studies are needed to compare the results of this technique to standard RIRS performed using traditional types of lasers and settings.

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(Maugeri, Peretti, Dalmaso, Venzano, Bernardi, Chiapello, Dadone, Oppezzi, Mediago)

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299.

Retrograde intrarenal surgery for renal calculi: Analysis of the factors affecting success rate and complications in a single institution series.

Milanese G., Pavia M., Tiroli M., Pretore E., Galosi A.

Embase

European Urology, Supplements. Conference: Italian Society of Urology 92nd Annual Congress 2019. Venice Italy. 18(9) (pp e3305-e3306), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 2004021497

Aim of the study: Retrograde intrarenal surgery (RIRS) is the most widespread procedure to eliminate kidney stones. Different factors analyzed seem to affect the success rate of RIRS. The aim of this retrospective study was to evaluate factors affecting RIRS success and complications in the treatment of renal stones.

Material(s) and Method(s): We collected data of a continuous series of patients who underwent RIRS at our institution from January 2017 to December 2018 with at least 3 months of follow-up. All patients underwent CT scan before RIRS and CT/US scan 3 months after procedure. The RIRS procedure was performed under general or spinal anesthesia, using ureteral access sheath and flexible ureteroscope with holmium laser lithotripsy. A tipless nitinol basket was used according to surgeon preference. A double J ureteral catheter was applied at the end in all patients. The procedures were performed by 4 different operators. Factors potentially affecting stone free rate and complications such as patients age, sex, lower calyx stone location, stone burden, stone density (HU), multiple stone presence, uni or bilateral procedure, contextual ureteral laser lithotripsy, preoperative stenting and operative time were collected. Multivariate linear and stepwise regression was used to evaluate the predictors of stone-free status and complications.

Result(s): 133 patients (83 M/50 F) were included in the analysis. Mean age was 57,8 years (24-87); mean stone burden 17,3 mm(5-32); mean stone density was 989 HU; inferior calyx stones were present in 45,6% of patients, multiple stones in 48,5%; contextual ureterolithotripsy were performed in 25% of patients; preoperative DJ stent in 42,6%. Bilateral procedure was performed in 5 patients. Mean procedure time was 90 min (25-190) and mean postoperative discharge day was 2,5 (1-10). The complication rate was 12%. Stone free rate was 76,5%. On univariate linear regression model only contextual ureterolithotripsy had impact on residual stone ($p = 0,049$; $r^2 = 3,267$); multiple stones affected the complication rate ($p = 0,041$; $r^2 = 3,429$). On multivariate regression analysis, only multiple stone had strongest impact on complications rate ($p = 0,041$; $r^2: 4,196$), while no factor analyzed influenced the stone free rate.

Discussion(s): In our study, limited by retrospective analysis, we found that presence of multiple stones and presence of contextual ureteral stones were significant factors affecting RIRS success and complications. These results suggest that patients with complex reno-ureteral stones may need multiple RIRS sessions or additional treatment modalities.

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(Milanese, Pavia, Tiroli, Pretore, Galosi) Anconaltaly

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300.

A novel low-dose CT-based score for prediction of the residual stone burden following retrograde intrarenal surgery (RIRS).

Mandato F., Soligo M., Colicchia M., Ponzoni A., Celso F., Ruggera L., Dal Moro F., Beltrami P., Zattoni F.

Embase

European Urology, Supplements. Conference: Italian Society of Urology 92nd Annual Congress 2019. Venice Italy. 18(9) (pp e3307-e3308), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 2004021350

Aim of the study: Urolithiasis is one of the most common disorders of urinary tract, with a prevalence 8%-19% in Western countries. Sensitivity and specificity of CT urography are close to 100%, but radiation exposure is a well-known risk. Low-dose CT (LDCT) has been reported as an accurate tool for evaluation of urinary stones. Therefore, the aims of the study were to develop a LDCT-based radiologic (CTRF) score to predict the residual stone burden following RIRS and to test the predictive ability of CTRF score against the gold standard (second-look RIRS).

Material(s) and Method(s): Twenty-one patients with monolateral renal stones with largest diameter greater than 10 mm were prospectively enrolled between 11/2017 and 09/2018. As per study protocol, all patients underwent RIRS and laser lithotripsy, followed by LDCT 30 days after the procedure. CTRF score and endoscopic residual fragments (ERF) score were defined as: 1) dust; 2) fragments <2 mm; 3) cluster >=1 cm of residual fragments <2 mm; 4) residual fragments <= 2-5 mm; 5) residual fragments >=5 mm. CTRF score was attributed by a single dedicated uro-radiologist according to LDCT scan. ERF was attributed by a single dedicated urologist, who performed all the second-look URS. Descriptive statistics were used to show baseline demographic and clinical data. Fisher-Yates test was used to test the association between CTRF score and ERF score. [Figure presented] Results: Twelve (57.1%) patients had left kidney stones. Eight (38.1%) had stone larger than 15 mm. Median Hounsfield units were 1000 (800-1375). Most

common sites of urolithiasis were: calyces+pelvis (23.8%), pelvis (19%) and calyces+urether (19%). Most common stone compositions were: Ca-oxalate monohydrate (38.1%) and Ca-oxalate dihydrate (23.8%). Most common sites of residual fragments were calyces+pelvis (38.1%) and kidney+ureter (33.3%). CTRF score was significantly associated to ERF score ($p < 0.0001$). Concordance between CTRF and ERF to predict the likelihood of residual fragments ≥ 5 mm was 0.85.

Discussion(s): CTRF score provided an excellent predictive accuracy in the assessment of residual stone burden following RIRS.

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(Mandato, Soligo, Colicchia, Ponzoni, Celso, Ruggera, Dal Moro, Beltrami, Zattoni) PadovaItaly

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301.

Results and complications of retrograde approach (URS/RIRS) in pediatric urolithiasis: A multicentric experience.

Ferretti S., Campobasso D., Bocchialini T., Bevilacqua L., Bianchi G., Di Pietro C., Granelli P., Micali S., Rocco B., Salsi P., Sighinolfi M., Maestroni U., Frattini A.

Embase

European Urology, Supplements. Conference: Italian Society of Urology 92nd Annual Congress 2019. Venice Italy. 18(9) (pp e3212), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 2004021297

Aim of the study: Incidence of pediatric urolithiasis is increasing in industrialized countries.

Treatment of this disease follows the same surgical procedures as in adults.

Material(s) and Method(s): We have retrospectively reviewed all the kidney units (RUs) which underwent to URS/RIRS at 3 centers from January 2009 to December 2018 up to 16 years of age. Data reported include: lithiasic volume, radiological exposure, operative time, complications according to Clavien classification at 3 months and stone free rate.

Result(s): We have performed 74 procedures (44 RIRS and 30 URS) in 66 RUs with an average age of 7.24 years (range: 2-16 yy). RUs treated in pre-school age (0-4 yy) were 19; 34 in pre-puberty (5-11yy) and 13 in puberty (12-16 yy). In 39 cases a pre-operative urethral stent was applied (17 cases with age <4, 18 between 5-11 and 4 between 12-16). Average lithiasic volume was 1.165 cm². Mean operative time was 77.3 +/- 41.64 minutes (range: 15-140 min) with a radiological exposure of 25 "+/- 28" (range: 5 "-1'20"). At the end of the procedure a Double J (DJ) was applied in 45 cases (8 cases with age <4, 27 between 5-11 and 10 between 12-16) and a Mono J (MJ) in 29 cases (13 cases with age <4, 11 between 5-11 and 5 between 12-16). Stone-free rate has been 81.8% (54/66, 13 cases with age <4, 31 between 5-11 and 10 between 12-16). Nine patients required a second intervention to achieve a complete stone clearance. Complications recorded at 90 days include a case (1.5%) of migration of a fragment in the ureter causing hydronephrosis and renal colics at 49 days to the operation (Clavien 3b) that was treated with URS; 8 cases (12.1%) which required the administration of painkillers during the first 48 hours postoperative (Clavien I); 5 cases of urinary tract infections during hospitalization (7.5%) treated with antibiotic therapy (Clavien II).

Discussion(s): Miniaturization of the instruments with the increased incidence of pediatric urolithiasis have led the endourologist to treat more patients in pediatric age. However, particular attention should be paid to treatment planning in patients under 6 years of age, where, based on our experience it is useful to apply a urethral stent for kidney stones or proximal and mid-lumbar ureteral stones before surgery. In our cases, in only three patients under 6 years of age, no pre-operative DJ stent has been required, since it were two patients with stones located in the distal part of the ureter. Another consideration should be the choice of the urethral stent to be applied at the end of the intervention (DJ vs MJ) to avoid excessive use of painkillers or access to the hospital for intolerance, bearing in mind the need to submit the patient to an additional anesthesia for DJ removal. In 60% of patients under the age of 5 years we preferred to apply a MJ, leaving a DJ alone in cases requiring a second intervention, where the procedure lasted more than an hour or in presence of lithiasic sand related to the dusting of the stone.

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Institution

(Ferretti, Campobasso, Bocchialini, Bevilacqua, Bianchi, Di Pietro, Granelli, Micali, Rocco, Salsi, Sighinolfi, Maestroni, Frattini) Parma (PR)Italy

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302.

Better safe than sorry: Bench flexible ureteroscopy in the diagnosis and treatment of urolithiasis before kidney transplantation.

Bosio A., Alessandria E., Vitiello F., Sedigh O., Pasquale G., Lillaz B., Merlo M., Biancone L., Gontero P.

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Urolithiasis. Milan Italy. 18(7) (pp e2987), 2019. Date of Publication: 2019.

[Conference Abstract]

AN: 2002936056

Introduction & Objectives: Urolithiasis in donor kidneys is a relatively uncommon, but challenging clinical entity. We wanted to evaluate the feasibility and role of bench flexible ureteroscopy in the diagnosis and treatment of urolithiasis before kidney transplantation.

Material(s) and Method(s): Brain-dead donor kidneys incidentally discovered with single subcentimeter stones were included in the study from September 2018 to December 2018 (n = 8). All patients underwent an abdominal CT scan before organ procurement. Bench flexible

ureteroscopy with 7.5 Fr FlexX2 flexible ureteroscope by Karl Storz was performed prior to renal transplantation while the graft was kept cold with ice.

Result(s): A total of 6 stones, mean largest diameter 6.6 mm (range 4-9 mm), were identified in 8 brain-dead donor kidneys. Basket ureteral extraction was performed in 2 cases presenting 4 mm and 5 mm stones. 2 stones (8 and 9 mm) in the renal pelvis and in the inferior calyx were grasped with a basket with the ureteroscope and extracted through a ureteroscope-guided mini-pyelothomy, in order to avoid grasping-related UPJ and ureteral damage due to the size of the stones. The presence of the stones was not confirmed with flexible ureteroscopy in 2 cases presenting 4 mm stone in the inferior calyx at CT scan, but hypertrophic and calcified papillas were found at endoscopy, explaining the imaging diagnosis. 2 stones (both 7 mm) in the inferior calyx were extracted through ureteroscope-guided and US-guided mini-nephrotomy, after unsuccessful ureteroscopic relocation due to the complex renal collecting system anatomy (stricture of the calyx) and the dimension of stones. Stone clearance was achieved in all cases. All the kidneys were successfully transplanted. No stone recurrence or graft dysfunction was detected in the follow-up period.

Conclusion(s): Bench flexible ureteroscopy allows to confirm and perform different minimal invasive treatments of donor-gifted allograft lithiasis, to rule out the presence of stones in case of calcified papillas, to perform a safe transplantation and avoid post-transplantation challenging procedures.

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Institution

(Bosio, Alessandria, Vitiello, Sedigh, Pasquale, Lillaz, Gontero) Citta della Salute e della Scienza

- Molinette Hospital, Dept. of Urology, Turin, Italy (Merlo) Citta della Salute e della Scienza -

Molinette Hospital, Dept. of Vascular Surgery, Turin, Italy

(Biancone) Citta della Salute e della Scienza - Molinette Hospital, Dept. of Nephrology and

Kidney Transplantation, Turin, Italy

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303.

Complete ureteral avulsion in left solitary functioning kidney.

Di Stasio A., Cortese F., Serao A., Malinaric R.

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Urolithiasis.

Milan Italy. 18(7) (pp e2757), 2019. Date of Publication: 2019.

[Conference Abstract]

AN: 2002936046

Introduction & Objectives: Ureteroscopy is a standard procedure when treating ureteral or renal calculi. There are various complications that can occur intraoperatively, complete ureteral avulsion being the most fearsome. We discuss a case of complete ureteral avulsion, after URS procedure, in a patient with left solitary functioning kidney.

Material(s) and Method(s): Patient is 44 years old, underwent a previous URS procedure for right ureteral lithiasis in 2013. In January 2016 patient referred to ER complaining left flank pain. CT scan revealed II grade right hydronephrosis, UPJ stricture and renal cortical thinning and I grade left hydronephrosis due to 8mm, obstructive calculus in the lumbar ureter. Right UPJ stricture and renal deterioration were probably due to the previous URS procedure. Considering that patient had 1 stage CKD, with all signs of ulterior AKI and serum creatinine of 3,6 mg/dL, urgent left ureteral stenting/URS was planned. The procedure was performed by an attending urologist with 10 years of experience in endourology. Intraoperatively hydrophilic guidewire was positioned under fluoroscopy. 10Fr semirigid ureteroscope was introduced into left ureter with some difficulty owing to an ureteral stricture at level of iliac vessels, not inhibiting the progress until UPJ. After careful inspection of ureter, calculus identification, considering the clinical presentation and compromised renal function, it was decided to position only ureteral stent. There wasn't any difficulty or resistance during withdrawal of ureteroscope and no Dormia's basket was used. Nevertheless a delaminated urotelial mucosa and fragments of ureteral wall were visible in the bladder at the end of the maneuver. As a consequence retrograde ureteral stenting was impossible to perform, and a 10.3 Ch pyelostomy catheter was positioned. Postoperative CT scan showed a leakage in the subjunctional region of left ureter confirming the suspicion of complete ureteral avulsion. Three weeks later cystoscopy evidenced fluctuating and partially necrotic

ureteral remnant, result of previous delamination and invagination in the bladder. Complete ileal-ureteral reconstruction was then performed. Subsequently patient developed a stricture of the pyelo-neoureteral anastomosis followed by multiple episodes of pyelonephritis, AKI and metabolic acidosis that necessitated positioning of pyelostomy catheter. A second procedure was performed correcting anastomosis' stricture and stabilizing the patient.

Result(s): At two years follow-up patient has stage 1 CKD, but serum creatinine of 1,13 mg/dL, and no signs of left hydronephrosis.

Conclusion(s): Complete ureteral avulsion is extremely rare and tremendous complication that can happen to any urologists, even experienced ones, while performing endourologic procedures involving ureter or kidney. It is extremely difficult to manage and it is of utmost importance to recognize it immediately and treat it accordingly, especially in solitary kidney patients.

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CONFERENCE ABSTRACT

Institution

(Di Stasio, Cortese, Serao) Azienda Ospedaliera Nazionale SS. Antonio e Biagio Arrigo, Dept. of Urology, Alessandria, Italy (Malinaric) Ospedale Policlinico San Martino, University of Genoa, Dept. of Urology, Genova, Italy

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304.

Percutaneous nephrostomy-assisted ureterorenoscopy (PAU) for an impacted ureteral stone: A clinical study of super-minimally invasive endourology.

Kobayashi H., Ishito N., Mitsui M., Ando E., Yamamoto Y., Hitoshi T.

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Urolithiasis. Milan Italy. 18(7) (pp e2740), 2019. Date of Publication: 2019.

[Conference Abstract]

AN: 2002936028

Introduction & Objectives: Ureterorenoscopy (URS) for an impacted ureteral stone has high perioperative risks, including fever, decline of renal function, and ureteral injury. In our facility, endourology through a percutaneous or transurethral approach, depending on the case, is used to reduce this risk. In this study, we retrospectively investigated the background and surgical outcomes of cases with an impacted ureteral stone treated with percutaneous nephrostomy-assisted URS (PAU), in which the surgeon judged the indication during surgery.

Material(s) and Method(s): The subjects were 17 patients (mean age 60.2 years old) with an impacted ureteral stone (18 ureters), including 15 males (16 ureters) and 2 females (2 ureters) who were treated with PAU between November 2008 and October 2018. The mean stone size was 18.4 mm (major axis) and the mean volume was 2.24 cc. In the PAU procedure, percutaneous nephrostomy was performed and lithotripsy was retrogradely applied using a ureteroscope, a Ho: YAG laser, and basket forceps during perfusion with saline, followed by litholapaxy. Postoperative fever, SIRS score, renal function, hydronephrosis, additional surgery required to become stone-free, and recurrence of the stone were examined in the subjects.

Result(s): Body temperature did not exceed 38degreeC after surgery in any of the 17 cases. The mean SIRS score was 0.33 and no case had a score of 2 or higher. Twelve (66.7%, mean volume: 2.01 cc) of the 18 ureters became stone-free after the first PAU. In the other 6 ureters (33.3%, mean volume: 2.53 cc), URS and URS-assisted percutaneous nephrolithotomy were added, and the final stone-free rate was 100%. Thirteen cases were followed for one month or longer after surgery (72.2%, mean duration of follow-up: 18.5 months) and no decline of renal function, aggravation of hydronephrosis, or recurrence of the stone occurred in any of these cases.

Conclusion(s): PAU is a minimally invasive endourological treatment that is effective for an impacted ureteral stone due to its low risk for reduction of renal function, fever and an increased SIRS score after surgery.

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(Kobayashi, Ishito, Mitsui, Ando, Yamamoto, Hitoshi) Kurashiki medical center, Dept. of Urology, Kurashiki, Japan

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305.

Use of road runner guide in operative ureteroscopy for ureteral stones: Comparison of two homogeneous groups of patients.

Portoghese F., Ludovico G.M.

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Urolithiasis. Milan Italy. 18(7) (pp e2759), 2019. Date of Publication: 2019.

[Conference Abstract]

AN: 2002936023

Introduction & Objectives: Ureteroscopy is treatment chosen for the resolution of ureteral stones non-solvable with Extracorporeal Shock Wave Lithotripsy. Use of effective fragmentation tools as Holmium Lasers 3.0 and ballistic energy have simplified the surgical procedure. It is not uncommon that the Ureteroscopy is thwarted by the migration of the stone to remove or by inability to negotiate the ureteral lumen. We have gained experience in this procedure since 1985 and we describe the technique which provides the constant use of the hydrophilic guide called roadrunner wire as essential precondition for the Ureteroscopy.

Material(s) and Method(s): Specific composition of the guide, provided with a platinum tip and the upholstery of thinnest hydrophilic polymeric material allows to attract other liquids towards the guide wire creating a low friction surface. This quality allows to overcome the obstacle of kidney stone and to conduct the operation avoiding push up and lack of progress. Length of the Guide is 145 cm and diameter of 0.035-0.038 inches. We were able to go beyond the mechanic obstacle

of kidney stone with the lateralization of the Guide and then working with Holmium Laser 3.0 getting the complete Lithotripsy with the extraction of limestones with Dormia Basket zero tip. Treated patients showed calculus in the pelvic lumbar and pelvic-ureteric junction tracts. All of them had consensual hydronephrosis. In one case we found septic fever for 5 days. Size of calculi was between 0.8 \ 2.4 cm and they were made of calcium oxalate, calcium phosphate and uric acid. This group of 30 patients have been compared with another of 30 ones between 20-82 years previously treated in which the procedure were preventively made with ascending pyelography and the use of the Teflon or semirigid guide. Procedures have been carried out in each case with constant radiological control providing a complete graphic documentation for medical-legal aims.

Result(s): With the group of 30 patients (between 17-84 years) treated with hydrophilic road runner guide we got the 93,33% of the outcome (28/30 patients) making the patients free from kidney stones and only a minimum part of the surgical ones needed a double J stent (6/30(20%). We choose to let inside a catheter 6-7Ch usually removed after 24-36 hours. In the comparison group the patients free from stones were 23/30 with a lower percentage (76%).

Conclusion(s): Use of the ultrathin hydrophilic guide is expedient that simplifies the entrance and progress of the tool increases the negotiability of the ureter above all in the lumbar section, doesn't move the stone and allows to perform the surgery in complete safety. The Road Runner Guide also allows the alignment of the ureteral tract with kinking straightening and without risk to undermine the mucosa. Surgical duration (18 minutes on average) proves the efficacy of the guide.

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CONFERENCE ABSTRACT

Institution

(Portoghese) Bernardini Cinic Taranto, Dept. of Urology, Taranto, Italy (Ludovico) Miulli

Hospedal, Dept. of Urology, Acquaviva delle Fonti, Italy

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306.

High rate of complications in frail patients with neurogenic lower urinary tract dysfunction treated for reno-ureteral stones by a tertiary referral center.

Sampogna G., Maltagliati M., Galfano A., Guerrer C.S., Rocco B., Micali S., Montanari E., Spinelli M.

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Urolithiasis. Milan Italy. 18(7) (pp e3023-e3024), 2019. Date of Publication: 2019.

[Conference Abstract]

AN: 2002935990

Introduction & Objectives: Patients with neurogenic lower urinary tract dysfunction (NLUTD) have an increased risk of developing reno-ureteral stones due to several predisposing conditions. These patients are usually frail and need a treatment characterized by a high stone-free rate (SFR) and a minimally invasive approach to limit complications. The aim of our study was to present our experience with the treatment of reno-ureteral calculi in patients with NLUTD followed by a tertiary referral center.

Material(s) and Method(s): We retrospectively collected data from our patients, who underwent surgery for reno-ureteral stones from May 2017 to May 2019. Pre-operative stone burden was assessed with a CT scan. Depending on the case, we performed semirigid ureteroscopy (sURS) for ureteral stones, and shock wave lithotripsy (SWL), retrograde intra-renal surgery (RIRS) or percutaneous nephrolithotomy (PCNL) for renal calculi. The sURS was performed with a 7.5 Fr semirigid ureteroscope, while RIRS with an 8 Fr flexible fiberoptic ureteroscope and a 11/13 Fr ureteral sheath. In these cases, lapaxy was performed with a 1.5 Fr tipless nitinol basket. PCNL was performed with a 16-Fr-large nephrostomy sheath equipped with a lateral arm connected to an aspiration system to perform litholapaxy. Lithotripsy was always performed with a high-power Holmium:YAG laser. All procedures were performed by two expert endourologists. We estimated stone-free rate (SFR) with a CT scan after 4 weeks to evaluate the absence of > 4 mm residuals. We collected and analyzed pre-, intra- and post-operative data.

Result(s): In the considered period 4 male patients with a median age of 35 years followed by our center were addressed to surgery for reno-ureteral stones (Table 1). Five out of 11 procedures (45.5%) were characterized by different complications. [Table Presented]

Conclusion(s): Our series proved a high rate of complications in frail patients with NLUTD affected by reno-ureteral stones. SWL triggered a dysautonomic crisis, which patients with spinal cord injuries above T6 are at risk for. Therefore, SWL should be avoided in these patients in favor of endourological procedures, which are associated with higher SFRs. Clinicians should monitor patients with NLUTD limiting the predisposing risks for urolithiasis and performing an abdominal US periodically in order to identify and treat stones precociously.

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(Sampogna, Montanari) Fondazione IRCCS Ca' Granda - Ospedale Maggiore Policlinico, University of Milan, Dept. of Urology, Milan, Italy (Maltagliati, Rocco, Micali) Azienda Ospedaliero Universitaria Policlinico di Modena - University of Modena and Reggio Emilia, Urology Residency Program, Modena, Italy
(Galfano) ASST Grande Ospedale Metropolitano Niguarda, Dept. of Urology, Milan, Italy
(Guerrer, Spinelli) ASST Grande Ospedale Metropolitano Niguarda, Dept. of Neurourology, Milan, Italy

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307.

Compared endoscopic and microscopic recognition of urinary stones: Preliminary concordance study.

Verzotti G., Daudon M., Meria P., Almeras C., Traxer O., Estrade V.

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Urolithiasis. Milan Italy. 18(7) (pp e2839-e2840), 2019. Date of Publication: 2019.

[Conference Abstract]

AN: 2002935983

Introduction & Objectives: The treatment of urinary stones is a matter of fragmentation or even dusting. The microscopic morpho-constitutional analysis (MCA) of a whole urinary stone is then no longer feasible. However, MCA has the best diagnostic concordance to the lithiasic mechanism that has produced the stone. We compared the endoscopic and microscopic stone recognition of urinary stones to validate the Endoscopic Stone Recognition (ESR).

Material(s) and Method(s): Combined and independent urinary stone MCA was performed by two experts in the field of urolithiasis: a urologist and a biologist. During the operation, the former examined the surface and cross-section of the stones with a ureteroscope before fragmentation. The endoscopic stone recognition was performed according to the international MCA stones classification (Daudon). Stone fragments were then sent for MCA and infrared spectrometry. A comparative concordance study between the two approaches (endoscopic and microscopic) was carried out. A Chi2 test was performed to assess this concordance.

Result(s): 268 files were examined. 7 files were excluded because images were not recognizable (fuzzy images). 7 more files were excluded because laboratory analysis could not be performed (stone powder). In total, 254 files were included in the analysis. This comprised 34 types of stones, including 15 pure and 19 mixed. 15 stones had a specific endoscopic recognition that was not found on infrared examination. The Chi2 difference test found an excellent ($p \geq 0.05$) concordance for pure stones (Ia+Id) of whewellite (85.7% $n=7$), (IIb) weddellite (88.2% $n=17$), (IIIab) uric acid (97.1% $n=34$), (IVc) struvite (100% $n=4$) and mixed stones (Ia+IIb) whewellite/weddellite (92.5% $n=40$), (Ia+IIIab) whewellite/uric acid (76.9% $n=13$), (Ia+IIb+IVa), whewellite/weddellite/carbapatite (87.5% $n=16$). Other morphologies have an excellent concordance: Va cystine (100% $n=1$), VIa proteins (100% $n=1$), IIb+IVd weddellite/brushite (100% $n=3$) but too small a number to be considered representative.

Conclusion(s): This analysis confirms the reliability of ESR for the most frequent pure stones (Ia+Id) of whewellite, (IIb) weddellite, (IIIab) uric acid, (IVc) struvite and mixed (Ia+IIb) whewellite/weddellite, (Ia+IIIab) whewellite/uric acid, (Ia+IIb+IVa) whewellite/weddellite/carbapatite. ESR is a fundamental step in lithiasis. However, it must always be combined with infrared spectroscopy of the fragments of the stone. [Figure Presented] [Figure Presented]

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CONFERENCE ABSTRACT

Institution

(Verzotti) University Hospital Pellegrin, Dept. of Urology, Bordeaux, France (Daudon, Traxer)

Hopital Tenon, Dept. of Urology, Paris, France

(Meria) Hopital Saint Louis, Dept. of Urology, Paris, France

(Almeras) Clinique la Croix du Sud, Dept. of Urology, Toulouse, France

(Estrade) Hopital Pellegrin, Dept. of Urology, Bordeaux, France

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308.

Retrograde intrarenal surgery for renal calculi: analysis of the factors affecting success rate and complications in a single institution series.

Milanese G., Pavia M.P., Tiroli M., Pretore E., Galosi A.B.

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Urolithiasis.

Milan Italy. 18(7) (pp e2753), 2019. Date of Publication: 2019.

[Conference Abstract]

AN: 2002935979

Introduction & Objectives: Retrograde intrarenal surgery (RIRS) is the most widespread procedure to eliminate kidney stones. Different factors analyzed seem to affect the success rate of RIRS. The aim of this retrospective study was to evaluate factors affecting RIRS success and complications in the treatment of renal stones.

Material(s) and Method(s): We collected data of a continuous series of patients who underwent RIRS at our institution from January 2017 to December 2018 with at least 3 months of follow-up.

All patients underwent CT scan before RIRS and CT/US scan 3 months after procedure. The RIRS procedure was performed under general or spinal anesthesia, using ureteral access sheath and flexible ureteroscope with holmium laser lithotripsy. A tipless nitinol basket was used according to surgeon preference. A double J ureteral catheter was applied at the end in all patients. The procedures were performed by 4 different operators. Factors potentially affecting stone free rate and complications such as patients age, sex, lower calyx stone location, stone burden, stone density (HU), multiple stone presence, uni or bilateral procedure, contextual ureteral laser lithotripsy, preoperative stenting and operative time were collected. Multivariate linear and stepwise regression was used to evaluate the predictors of stone-free status and complications. Result(s): 133 patients (83 M/55 F) were included in the analysis. Mean age was 57,8 years (24-87); mean stone burden 17,3 mm (5-32); mean stone density was 989 HU; inferior calyx stones were present in 45,6% of patients, multiple stones in 48,5%; contextual ureterolithotripsy were performed in 25% of patients; preoperative DJ stent in 42,6%. Bilateral procedure was performed in 5 patients. Mean procedure time was 90 min (25-190) and mean postoperative discharge day was 2,5 (1-10). The complication rate was 12%. Stone free rate was 76,5%. On univariate linear regression model only contextual ureterolithotripsy had impact on residual stone ($p=0,049$; $r^2 = 3,267$); multiple stones affected the complication rate ($p=0,041$; $r^2 = 3,429$). On multivariate regression analysis, only multiple stone had strongest impact on complications rate ($p=0,041$; $r^2: 4,196$), while no factor analyzed influenced the stone free rate.

Conclusion(s): In our study, limited by retrospective analysis, we found that presence of multiple stones and presence of contextual ureteral stones were significant factors affecting RIRS success and complications. These results suggest that patients with complex reno-ureteral stones may need multiple RIRS sessions or additional treatment modalities.

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Institution

(Milanese, Pavia, Tiroli, Pretore, Galosi) Polytechnic University of Marche, Dept. of Urology, Ancona, Italy

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309.

Worldwide survey of flexible ureteroscopy (FURS) practice: A survey from EAU sections of Young Academic Urologists (YAU) and Uro-Technology (ESUT).

Pietropaolo A., Skolarikos A., Liatsikos E., Rukin N., Niewad E.B., Sener E., Kallidonis P., Oezsoy M., Emiliani E., Mario M.A., Tailly T., Talso M., Aboumarzouk O., Proietti S., Giusti G., Traxer O., Somani B.

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Urolithiasis. Milan Italy. 18(7) (pp e2846-e2847), 2019. Date of Publication: 2019.

[Conference Abstract]

AN: 2002935948

Introduction & Objectives: Ureteroscopy is an accepted method for treatment of stone disease. We wanted to assess the worldwide pattern of availability in equipment and technology, with the technique used by urologists while treating stone disease.

Material(s) and Method(s): The survey consisted of 42 questions distributed between November 2017 and December 2018 during the bi-annual EAU section of uro-technology (ESUT) meeting and via survey monkey to Endourologists across Europe.

Result(s): A total of 114 responses were obtained of which 100 (88%) had successfully completed it. The average time taken for it was 5.4 minutes. Of the responders, 75% were endourologists and 25% were general urologists. The case volume and the number of available flexible ureteroscopes are as stated in the table. Disposable scopes were either not used at all (60%) or used in up to 20% patients by a third of respondents. A single peri-operative prophylactic antibiotic dose was given by 67%. The type of irrigation used was manual (46%), mechanical (22%) or gravity (27%). An access sheath was always or almost always used by 75% responders. The mode of intra-renal stone treatment was chosen as dusting (40%), fragmentation with basketing (12%) or a combination of both (48%). Post-operative stent was used by 54% respondents in >80% of their patients and 28% in 60-80% of their patients. [Table Presented]

Conclusion(s): There seems to be a wide variation in the availability of technology and technique used by urologists. While most respondents work in a medium or high-volume centre and have

access to digital scopes, disposable scopes are still not used widely. Among endourologists, the use of single dose peri-operative antibiotics, access sheath, stone dusting and post-operative stent seems to be the most common treatment pathway.

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Institution

(Pietropaolo, Somani) University Hospital Southampton, Dept. of Urology, Southampton, United Kingdom (Skolarikos) National and Kapodistrian University Sismanogleio General Hospital, Dept. of Urology, Athens, Greece

(Liatsikos) Patras University, Dept. of Urology, Patras, Greece

(Rukin) University Hospital, Dept. of Urology, Canada, Canada

(Niewiad) University Hospital, Dept. of Urology, Warsaw, Poland

(Sener) University Hospital, Dept. of Urology, Turkey, Turkey

(Kallidonis) University of Patras, Dept. of Urology, Patras, Greece

(Oezsoy) University of Vienna, Dept. of Urology, Vienna, Austria

(Emiliani) University of Barcelona, Dept. of Urology, Barcelona, Spain

(Mario) Hospital Universitario Infanta Sofia, Dept. of Urology, Madrid, Spain

(Tailly) Universitair Ziekenhuis Ghent, Dept. of Urology, Gent, Belgium

(Talso) Vimercate Hospital, Dept. of Urology, Vimercate, Italy

(Aboumarzouk) BMI Ross Hall in Glasgow, Dept. of Urology, Glasgow, United Kingdom

(Proietti, Giusti) San Raffaele, Dept. of Urology, Milan, Italy

(Traxer) Tenon Hospital, Dept. of Urology, Paris, France

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310.

Intra-operative flexible nephroscopy and laparoscopic robot-assisted pyelolithotomy for treatment of renal stones.

Cattaneo F., Zattoni F., Beltrami P., Sguotti P., Costa G., Dal Moro F.

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Urolithiasis. Milan Italy. 18(7) (pp e2786), 2019. Date of Publication: 2019.

[Conference Abstract]

AN: 2002935941

Introduction & Objectives: Robotic pyelolithotomy (RPL) may be an alternative to percutaneous nephrolithotomy (PCNL) or flexible ureteroscopy (fURS) to manage large kidney stones. RPL is considered when a great number of endourological procedures may be required (complex calculi; unfavorable collecting system anatomy; extremely morbid obesity; skeletal abnormalities), when previous procedures have failed or simultaneous management of other renal diseases are requested (i.e. uretero-pelvic junction obstruction, symptomatic renal cyst, renal mass). Aim of this study is to describe the RPL technique and its safety and efficacy in the treatment of complex renal stones often associated with other renal diseases.

Material(s) and Method(s): We retrospectively reviewed our experience with RPL in 33 patients surgically treated between 05/2010 and 06/2018. All procedures were performed via a trans-peritoneal approach. Stone burden and location were assessed with a preoperative radiological evaluation. After pyelotomy, stones were removed by means of a robotic grasper; a flexible nephroscope was introduced through an assistant port and residual stones, if present, were extracted with graspers or basket catheters. In most cases, concurrent urinary disease was treated. Characteristics of patients and stones along with perioperative features - such as operative time, hospitalization, stone-free rate, and biochemical data - were recorded. Post-operative complications were reported according to the modified Clavien-Dindo classification system.

Result(s): 18 procedures (54.5%) were done on the right side and 15 (45.5%) on the left. The mean stone size was 31.7 mm (SD: 18.9 mm; IQR: 15-47). RPL was performed as unique procedure in 8 cases (24.2%); 21 (63.6%), 2 (6.1%), 1 (3.0%) and 1 (3.0%) underwent combined pyeloplasty for ureteropelvic junction obstruction, renal-cyst decortication for a symptomatic renal cyst, pyeloplasty plus renal cyst decortication, and partial nephrectomy for the presence of renal mass, respectively. Mean operative time was 208.6 minutes (SD: 74.6; IQR: 160-220). The mean estimated blood loss was <100 ml. No patient required post-operative transfusion. The median length of hospital stay was 6 days (SD: 5.1; IQR: 5-9 days). There was no significant change in

preoperative and postoperative serum creatinine ($p=0.92$). The overall complication rate was 21.2% (Clavien 2 9.1%; 3a= 12.1%). The complete stone-free rate was 91.0%.

Conclusion(s): RPL with intraoperative flexible nephroscopy (IFN) is a feasible, efficient and safe procedure for selected patients with large renal stone burden. In particular, it allows treating a concomitant disease and the removal of stones with no damage to renal parenchyma, resulting in a lower risk of bleeding and nephron loss. Moreover, the complete removal of renal stone without fragmentation limits the risk of residual fragments (RFs) and IFN lets to increase the stone-free rate.

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Institution

(Cattaneo, Zattoni, Zattoni, Beltrami, Sguotti, Costa, Dal Moro) University of Padua, Dept. of Urology, Padua, Italy

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311.

A novel low-dose CT-based score for prediction of the residual stone burden following retrograde intrarenal surgery (RIRS).

Colicchia M., Soligo M., Ponzoni A., Celso F., Chillon M., Mandato F.G., Ruggera L., Dal Moro F., Zattoni F., Beltrami P.

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Urolithiasis. Milan Italy. 18(7) (pp e2941), 2019. Date of Publication: 2019.

[Conference Abstract]

AN: 2002935901

Introduction & Objectives: Urolithiasis is one of the most common disorders of urinary tract, with a prevalence 8%-19% in Western countries. Sensitivity and specificity of CT urography are close to 100%, but radiation exposure is a well-known risk. Low-dose CT (LDCT) has been reported as an accurate tool for evaluation of urinary stones. Therefore, the aims of the study were to develop a LDCT-based radiologic (CTRF) score to predict the residual stone burden following RIRS and to test the predictive ability of CTRF score against the gold standard (second-look RIRS).

Material(s) and Method(s): Twenty-one patients with monolateral renal stones with largest diameter greater than 10 mm were prospectively enrolled between 11/2017 and 09/2018. As per study protocol, all patients underwent RIRS and laser lithotripsy, followed by LDCT 30 days after the procedure. CTRF score and endoscopic residual fragments (ERF) score were defined as: 1) dust; 2) fragments <2 mm; 3) cluster $\geq$ 1 cm of residual fragments <2 mm; 4) residual fragments $\leq$ 2-5 mm; 5) residual fragments $\geq$ 5 mm. CTRF score was attributed by a single dedicated uro-radiologist according to LDCT scan. ERF was attributed by a single dedicated urologist, who performed all the second-look URS. Descriptive statistics were used to show baseline demographic and clinical data. Fisher-Yates test was used to test the association between CTRF score and ERF score.

Result(s): Twelve (57.1%) patients had left kidney stones. Eight (38.1%) had stone larger than 15 mm. Median Hounsfield units were 1000 (800-1375). Most common sites of urolithiasis were: calyces+pelvis (23.8%), pelvis (19%) and calyces+ureter (19%). Most common stone compositions were: Ca-oxalate monohydrate (38.1%) and Ca-oxalate dihydrate (23.8%). Most common sites of residual fragments were calyces+pelvis (38.1%) and kidney+ureter (33.3%). CTRF score was significantly associated to ERF score ($p < 0.0001$). Concordance between CTRF and ERF to predict the likelihood of residual fragments $\geq$ 5 mm was 0.85.

Conclusion(s): CTRF score provided an excellent predictive accuracy in the assessment of residual stone burden following RIRS.

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CONFERENCE ABSTRACT

Institution

(Colicchia) University of Padua, Urology Clinic, Padua, Italy (Soligo, Celso, Chillon, Mandato, Ruggera, Dal Moro, Zattoni, Beltrami) University of Padua, Dept. of Urology, Padua, Italy (Ponzoni) University of Padua, Dept. of Radiology, Padua, Italy

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312.

RIRS for lower pole small renal stones: Novel super pulse thulium (Tm) fiber laser lithotripsy. first clinical results.

Korolev D., Klimov R., Enikeev D., Tsarichenko D., Enikeev M., Dymov A., Ali S., Akopyan G., Lekarev V., Rapoport L.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A122), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629761959

Introduction & Objective: The SuperPulse Thulium (Tm) fiber laser (IRE Polus, Russia) (wavelength of 1.94 μ m) is a next generation laser technology that has a significant potential for urinary stones treatment. But still a small number of clinical studies does not allow to fully reveal the capabilities of this laser in the management of renal stones. To evaluate the effectiveness of the SuperPulse Tm fiber laser in the management of lower pole small calyceal stones during flexible ureteroscopy (F-URS).

Method(s): The SuperPulse Tm fiber laser device has been cleared for clinical use by the Ministry of Health of Russian Federation and the protocol has been approved by the institutional Ethical Review committee. Between January 2018 and February 2019, 130 patients with kidney stones have undergone Thulium fiber laser lithotripsy during F-URS. We retrospectively analyzed 15 of these patients with a single radiopaque lower pole calculus which were included in the present study. Stone size, its density, lithotripsy time (from the first to last pedal press) and "lasering"

(laser emission) time were measured. The SuperPulse Tm fiber laser was used for stone disintegration with different settings in dusting and fragmentation modes (0.1-4J, 7-300Hz, 6-40W) via a fiber with a 200-mum core diameter. Low dose CT scanning was performed on POD 90 to assess SFR.

Result(s): Stone size ranged from 4 to 17mm and stone density varied from 350 to 1459 HU. The average lithotripsy time was 12 min (3-30 min). The average "lasering" time was 1.3 min (0.4-2.5 min) and the mean hospital stay was 1.1+/-0.3 days. In all cases we reached the lower pole stone containing calyx with a laser fiber. The complication rates were evaluated by using the Clavien-Dindo grading system and did not exceed GII. The overall postoperative complication rate was 26.6% (GI 20%; GII 6.6%). SFR on POD 90 was achieved in 86.6% of cases.

Conclusion(s): F-URS with SuperPulse Tm fiber laser is safe and effective option in the management of lower pole small calyceal stones. The possibility of using small laser fibers gives better instrument deflection which make possible to reach lower pole calyces stones even with acute lower pole infundibulopelvic angle (IPA).

Status

CONFERENCE ABSTRACT

Institution

(Korolev, Klimov, Enikeev, Tsarichenko, Enikeev, Dymov, Ali, Akopyan, Lekarev, Rapoport)

Institute for Urology and Reproductive Health, Sechenov University

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313.

Operator-assisted vs self-achieved basketing during ureteroscopy: Results from an in-vitro preference study.

Ventimiglia E., Doizi S., Besombes T., Traxer O.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A120-A121), 2019. Date of Publication: October 2019. [Conference Abstract]

AN: 629761842

Introduction & Objective: Basketing is one of the fundamental yet most challenging step during flexible ureteroscopy. A recently introduced device (LithoVue Empower™ or LE, Boston Scientifics, USA) allows the surgeon to directly control the basket without the need of an assistant. We aimed to evaluate the impact of this device on stone retrieval time and surgeon's mental/physical demand.

Method(s): We used a portable bench-training model for flexible ureteroscopy, the Key-box (K-Box, Porge's-Coloplast, France), in order to compare the LE configured with a 1.9F stone retrieval tipless basket (ZeroTip™, Boston Scientific, USA) and a traditional assistant-manuevered 1.9F stone-retrieval tipless basket (ZeroTip™, Boston Scientific, USA). Six experienced endourologists (>100 ureteroscopies each) and 7 residents in training in urology retrieved a fake stone (5x5x5mm) from 3 different cavities of the K-Box simulating three renal cavities with increasing access complexity (C1 the simplest, C2 the intermediate, and C3 the hardest) first with the traditional basket (Task 1) and then with the LE device (Task 2). A single use ureteroscope (LithoVue™, Boston Scientific, USA) was used in all cases. None of the subjects had ever used before the LE device. We recorded time from ureteroscope insertion until stone retrieval and defined a failure in case time exceeded 300 seconds. All the operators filled in the NASA Task Load Index (TLI) for self-evaluation of their performance. We then compared results from Task 1 and Task 2 in terms retrieval time, failure rates, and NASA TLI scores using non-parametric descriptive statistics.

Result(s): Overall, stone retrieval times and failure rates were comparable between Task 1 and Task 2 (all $p > 0.05$) for all analyzed cavities. NASA TLI scores revealed lower effort ($p = 0.001$) and frustration ($p = 0.04$) for the Task 2 vs Task 1. When stratifying the analyses according to surgical experience, fully trained urologists performed faster stone retrieval than residents in training for the C1 and C2 cavities (both $p < 0.01$) overall, but no difference was found according to the retrieval device used. Residents showed lower efforts ($p = 0.005$) and frustration ($p = 0.04$) scores at NASA TLI when performing Task 2, whereas this pattern was not observed in experienced urologists.

Conclusion(s): The individually controlled retrieval system is an effective device assisting stone retrieval and does not seem to necessitate specific training even among unexperienced

endourologists, who might instead benefit from it in terms of procedure-related anxiety and exertion.

Status

CONFERENCE ABSTRACT

Institution

(Ventimiglia, Doizi, Besombes, Traxer) Division of Experimental Oncology, Unit of Urology; URI, IRCCS Ospedale San Raffaele

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314.

Integrated, real-time digital stone measurement in ureteroscopic stone procedures: A work flow feasibility study.

Koo K., Aro T., Lim S., Petrisor D., Stoianovici D., Matlaga B.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A119), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629761728

Introduction & Objective: Accurately estimating fragment size is an important task during ureteroscopic stone management, as it can provide determination of the adequacy of dusting or the ability to retrieve fragments through a ureteral access sheath. We previously reported an ex vivo validation of a novel software that can accurately measure small stone fragments. This study assesses the feasibility of integrating the software into operating room workflow.

Method(s): Mock stone fragments were selected to mimic a variety of non-ideal fragmentation conditions. Using a commercial model of the kidney and ureter designed for ureteroscopy training, we performed two versions of a timed basketing task to simulate real-time software measurement. In the conventional version, the ureteroscope was navigated from the UPJ to the stone in a superior pole calyx, then the stone was retrieved with the basket back to the UPJ. In the measurement version, the ureteroscope was again navigated from the UPJ to the stone, then real-time measurement of the stone was performed using the software, followed by stone retrieval to the UPJ. Differences in task completion time and fragment characteristics were compared.

Result(s): A total of 20 stone fragments were selected with different combinations of internal characteristics: size (mean 7.1 mm, range 3.2-10.3 mm), 3-dimensional shape (50% pyramidal, 30% ovoid, 20% cuboid), surface contour (50% smooth, 50% rough), and planar symmetry (60% asymmetric, 40% symmetric). In the conventional version of the task, mean completion time was 16.5 sec (range 10.1-33.6 sec), compared with a mean completion time of 38.8 sec (range 27.2-60.0 sec) in the measurement version. The additional procedure time required to perform real-time measurement averaged 22.2 sec (range 8.8- 42.6 sec). Variation in these times for certain stones was typically due to more challenging planar alignment of the ureteroscope and basket tip, which is required for accurate calculation using the software.

Conclusion(s): Integrating a novel software for real-time stone measurement during ureteroscopy is feasible and has a modest effect on the time required for stone manipulation. These findings support in vivo trials of the software to enhance clinical decisionmaking in ureteroscopic stone management.

Status

CONFERENCE ABSTRACT

Institution

(Koo, Aro, Lim, Petrisor, Stoianovici, Matlaga) Johns Hopkins University, School of Medicine

Publisher

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315.

Outcome of Mini PCNL for large renal stones in 72 patients with spinal deformities.

Rajyaguru D.A.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A69), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629761659

Introduction & Objective: Patients with spinal deformity (SD) pose special challenge in stone management due to altered anatomy and compromised cardiorespiratory reserve. Retrograde intrarenal surgery (RIRS) though preferred method, is not viable options in remote areas of India where stone bulk is high and affordability is an issue. We have studied mini PCNL (mPCNL) in 72 patients with SD to look for its safety and feasibility in large renal stones.

Method(s): We have studied 72 patients with spinal deformities (between Sep2000 to Sep'18) with a stone >1.5 cm (single or multiple). Spinal deformities were- varying amount (scoliosis, kyphosis, lordosis and kyphoscoliosis). Stone size was calculated with the help of CT IVP after confirming their operative fitness. Exclusion criteria were - children and elderly population, unfit for surgery. General anesthesia was used in all, after putting open end 5 Fr ureteric catheter in lithotomy, patient was turned prone by appropriate padding. Fluoroscopy guide puncture was done and tract dilated over hydrophilic 0.35f guide wire and tract dilated upto 14F, 16F or 18F dilators (mPCNL). Stone was fragmented to dust with the help of the 30 wt holmium laser 365 fiber as well as mini pored lithoclast. After the procedure, 5.0Fr double J stent and percutaneous drain was put. Post-operative X ray was done on 1st day after bowel preparation. Patient was discharged on 2nd day.

Result(s): Out of 72 patients, males were 55(76.3%). Mean age of the patients was 45 yrs (32-62 yrs). Stone position was pelvis 35 48,61%, Pelvic + calyx -23 (32.22%) cases, only calyx 14 cases (19.44%). Four patients were complete staghorn. Mean operative Time was: 50-minute (20-120) min. Complete clearance was 66 (91.66%), remaining required relook mPCNL for clearance. Minor complications in 9 patients (12.5%) (minor bleeding in 6, culture positive infection in 3) occurred 11 (15.2%), major complications in 9 patients (12.5%) (bleeding required transfusion in 5 patients, persistent urine leak from surgery site in 2, hydrothorax in 1 and colonic rupture in 1).

Conclusion(s): The mPCNL is safe effective in patients with spinal deformities and large renal stones. Stringent patient selection and pre-operative stone mapping is very important.

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316.

Initial human experience with a novel stone aspiration device used during ureteroscopic lithotripsy for renal stones.

Agrawal S., Singh A., Sur R.L., Eisner B., Haleblan G., Preminger G., Ganpule A., Sabnis R., Desai M.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A118), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629761636

Introduction & Objective: Recent evidence suggests that basket extraction of stone fragments after ureteroscopic lithotripsy is time-consuming and may result in poorer-thanexpected stone free rates. Here in we report the first-in-human experience using a novel stone aspiration device designed to more efficiently and effectively remove stone fragments after ureteroscopy.

Method(s): A randomized, controlled trial was performed comparing two techniques during ureteroscopy with laser lithotripsy-group 1 underwent standard fragment extraction via basket retrieval and group 2 underwent stone fragment aspiration only with a novel device (K-VACO

Kalera Medical, San Diego, CA). Inclusion criteria was renal stones 5-15 mm. Patients with multiple stones were included as long as the largest stone was <15mm in diameter. For group 1, stones were laser fragmented and then basket extraction was performed until surgeons felt the subject was stone free. For group 2, stones were laser fragmented and the ureteroscope replaced by K-VAC. K-VAC was passed systematically through all calyces of the kidney using fluoroscopic guidance, and stone fragments were aspirated for approximately 2 minutes in each area where stones were located. All procedures utilized a 12/14 Fr ureteral access sheath and also a ureteral stent at the end of the procedure. Non-contrast CT scan was performed post-operative day 1 and 30. Stone free was defined as no stone fragments.

Result(s): Eight (8) subjects were randomized to the basket arm of the study and nine (9) subjects were randomized to the K-VAC arm. There were no differences in demographics or pre-operative stone volume (mean basket group = 435mm³, K-VAC group = 550mm³, p = 0.6). Mean % stone volume removed during the procedure was significantly higher in the K-VAC group (88.7% versus 58.8%, p = 0.03). There was no difference in the mean total fluoroscopy (318 seconds versus 295 seconds, p = 0.8). At 1 month follow up CT scan, 100% of subjects in the K-VAC group were stone free compared to 75% of subjects in the basket group.

Conclusion(s): Use of K-VAC, a novel stone aspiration device, demonstrated superior stone free rates compared to conventional basketing during ureteroscopy with lithotripsy. Larger clinical trials are planned to confirm the efficacy of this innovative device.

Status

CONFERENCE ABSTRACT

Institution

(Agrawal, Singh, Sur, Eisner, Haleblan, Preminger, Ganpule, Sabnis, Desai) Muljibhai Patel
Urological Hospital, Nadiad Gujarat, India

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317.

Durability of fiber optic reusable flexible ureterorenoscopes: Retrospective analysis after 313 consecutive cases of retrograde intra renal surgery: The lesson learned.

Kk Y., Prabhakar S.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A307), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629761505

Introduction & Objective: To evaluate the durability of fiber optic reusable flexible Ureterorenoscopes (fURSs) and the factors affecting it and to suggest possible preventive measures to increase the scope life.

Method(s): All patients who were treated for renal or upper ureteric calculi using fURS were retrospectively studied. Study period was from Jan 2016 to Sep 2018 in a single center. Data on patient characteristics, stone size, density and location, presence of a prior DJ stent, total endoscopy time, the number of fURS passages through the ureteric access sheath (UAS), the number of passages of accessory devices through the working channel (WC), need for lower pole access and lasing and type and severity of scope damage were collected. The primary endpoint for each scope was its irreparable damage. Scope durability was measured as the total number of cases per scope and total ureteroscopy time before damage.

Result(s): Retrograde Intra Renal Surgery (RIRS) was performed in 266 consecutive patients (total of 313 renal stone units including 47 bilateral cases) using four different fURSs (one URFP6, one Flex x2 and two Flex x2S). Lithotripsy was done with 200 mum fiber using Holmium Laser (100 W). A 9.5 or 12F UAS was routinely used. Active stone extraction of all the fragments with a 2.2F basket were done to achieve maximum stone free rate. The method of sterilization was complete immersion in Peracetic acid. Mean age of the patient was 50.4 years (07-86). Mean stone size was 16.97mm (02-55mm). The average number of procedures per scope was 78.25 (37-126). Most durable scope in our series was Flex-X2 (122hrs). Most common cause of irreparable scope damage was deflection unit failure followed by fiberoptic bundle breaks. Total flexible ureteroscopy time (mean 60.29 minutes), the number of fURS passages through UAS (mean 38.69) and the number of passages of accessory devices through the WC (mean 5.05) were found to be statistically significant ($p < 0.001$). Limitations of this study were single center analysis, retrospective design, three different fURS models and surgeons.

Conclusion(s): The durability of fURSs in our series is was up to 78 cases per scope. The deflection unit was the most fragile part of the fURS. Decreasing total scope time and passage of scope through UAS and limiting passage of accessories through WC will maximize the overall durability of a fURS.

Status

CONFERENCE ABSTRACT

Institution

(Kk, Prabhakar) Renai Medicity Multi Super Specialty Hospital, Kochi, Kerala, India

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318.

Comparison of holmium lithotripsy pulse duration on stone dusting.

Kuo W., Yu C., Lin J., Tsai J.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A282), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629761454

Introduction & Objective: Holmium-YAG (Ho:YAG) laser lithotripsy is a multi-pulse treatment modality with certain effects on the fragmentation. Current Ho: YAG laser pulse duration are adjustable. In vitro investigations of Ho:YAG laser induced stone dusting and fragmentation were performed to identify potential impacts of different pulse durations on stone fragmentation characteristics.

Method(s): A Ho:YAG laser system (RovoLix) with selectable long or short pulse mode was tested with regard to its fragmentation and dusting compatibility properties. Fragmentation tests on calcium oxalate stones (N = 20) were performed under reproducible experimental conditions (fiber sizes: 365; laser settings: 10~18 W through combinations of 0.5, 1, 2 J/pulse and 20, 10, 5 Hz, respectively).

Result(s): Differences in fragmentation and dusting rates between the different pulse duration regimes were measured. Using the long-pulse mode, the fiber burn back was trace, while in shortpulse mode, an increased burn back could be observed. Short pulse duration lithotripsy mode yield efficiency stone fragment, but stone fragments were larger than long pulse duration mode. Average stone dust rate was similar around 0.066 +/- 0.012mg/Joule in 150 S mode vs 0.058 +/- 0.014mg/Joule in 800 S mode. For similar stone burden, it takes longer stone treatment time and energy to complete fragment using longer pulse mode.

Conclusion(s): Depending on stone location, hardness and endoscopic type, we may adjust pulse duration and energy output in Ho:YAG laser lithotripsy base on our result for optimal clinic outcome.

Status

CONFERENCE ABSTRACT

Institution

(Kuo, Yu, Lin, Tsai) Kaohsiung Veteran General Hospital

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319.

Analysis of disposable equipment utilization on the cost of ureteroscopy: Impact of technique and training.

Parikh K., Pak R.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A282), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629761418

Introduction & Objective: Ureteroscopy (URS) for the management of kidney and ureteral stones utilizes a variety of disposables which can account for a significant portion of the cost of care. We sought to perform a utilization analysis to determine factors which impact the cost of performing URS.

Method(s): In a single-institution, retrospective study, an analysis of disposable utilization was performed on all kidney and ureteral stone cases managed with URS and laser lithotripsy between July 1, 2016 and June 30, 2017. These cases were performed by six different surgeons, two of whom are fellowship trained in endourology. Disposable equipment was broken down into the following categories: baskets, ureteral dilators and balloons, laser fibers, access sheaths, stents, ureteral catheters, wires, and miscellaneous.

Result(s): Among the 269 cases included in the analysis, the average cost of disposables used per case was \$1,086.54. Endourology Society fellowship trained physicians performed 127 (47.2%) of these cases. Average cost of disposables per case performed by a fellowship trained urologist was \$1,038.72 compared to \$1,129.31 for non-fellowship trained urologists. Figure 1 displays the breakdown of the disposables contributing to overall costs per case. Figure 2 displays the individual surgeon costs based on technique and training. Surgeon A, with fellowship training, and a preferred technique of dusting was the most cost effective overall with an average savings of \$239.59 per case. These savings were realized in the low utilization of baskets and sheaths. Although Surgeon F was similar to Surgeon A in technique, the costs were skewed by expensive laser fiber usage.

Conclusion(s):

Conclusion(s): Technique and training can impact utilization of disposables determining the costs of ureteroscopy. (Table Presented).

Status

CONFERENCE ABSTRACT

Institution

(Parikh, Pak) Mayo Clinic Florida

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320.

Fluoroless ureteroscopy for ureteric stones: Feasibility, outcomes and assessment of factors necessitating fluoroscopy.

Gupta R., Garg G.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A305-A306), 2019. Date of Publication: October 2019.
[Conference Abstract]

AN: 629761288

Introduction & Objective: Patients with urolithiasis receive significant radiation exposure during their workup and endoscopic procedure. Also, Urologists and operating room personals are also at risk of significant radiation exposure. We prospectively evaluated Fluoroless Ureteroscopy for patients with ureteric stones and evaluated outcomes and factors which necessitated use of fluoroscopy in these patients.

Method(s): Patients undergoing fluoroless ureteroscopy were evaluated prospectively. Direct access to ureter was done with 6/7.5 Fr Wolfe ureteroscope. Where the ureteric orifice was tight or there was difficulty in advancing the ureteroscope, 4.5 Fr ureteroscope was used to perform the procedure. Holmium laser was used to dust the stone. After clearance, guidewire was passed under vision and with tactile feedback. DJ stent was placed at the end of procedure under vision. X-ray KUB was done the next day to document stone clearance and stent position.

Result(s): A total of 30 patients (31 renal units) undergoing fluoroless ureteroscopy were assessed. Stone location was in lower ureter in 22, midureter in 8 and upper ureter in 1 patient. Stone size was 58.69 +/- 38.66mm². Lasing time was 7.33 +/- 5.28 minutes. Fluoroless

ureteroscopy was successful in 28/31 (90%) of the renal units. Fluoroscopy was required in 3/31 (10%) renal units. Reasons for use of fluoroscopy were, 1. tight ureter despite using 4.5 Fr ureteroscope necessitating ureteral dilatation. 2. Ureteral tortuosity due to chronic stone impaction. There was no intraoperative complication. Postoperative X- ray KUB showed normal position of stent in all patients.

Conclusion(s): The study demonstrates that fluoroless Ureteroscopy is feasible and successful for stones at all levels in ureter. It significantly reduces the radiation exposure to the patient and to urologists who are doing the endourological stone surgeries.

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321.

Endoscopic management of giant ureteral fibroepithelial polyp with laser ablation.

Onal B., Ilki Y., Bulbul E., Ercili B., Citgez S.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A328), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629761110

Introduction & Objective: Around 300 cases of fibroepithelial polyps (FEP) have been reported in the medical literature. One fifth of the tumors in the ureter are benign, while the majority of these are FEPs originating from the mesoderm. In a series of 22 patients, ureteral stones were found in

the etiology of the disease. Cases have been found in the renal pelvis, bladder and urethra, but mostly in the ureter. In most cases, FEP is benign. However, some reports indicate it may accompany malign transformation and urothelial carcinomas.

Method(s): A 50-year-old woman was admitted to another hospital with macroscopic hematuria, suprapubic pain, dizury and urge incontinence. The patient, who had experienced the symptoms for approximately two months, suffered from no known diseases, while no pathology was detected in the physical examination. The MR urography showed protruding lesions in the distal ureter. Examinations revealed that the lesions were not hydronephrosis, but they could not determine whether they were inflammation or malignancy. An external ureteroscopy revealed a giant stem mass of 8 cm in the middle ureter, while the biopsy pathology was reported as reactive urothelial hyperplasia. The patient was referred to our hospital. When a ureteroscopy was performed with a ureterorenoscopy in semirigid, a polypoid 8 cm smooth mucosal surface lesion with a small stalk was seen. The 365 nm holmium laser probe was set to 1.2 J and 15 Hz. The polypoid lesion ureter stalks was separated from the ureter with a laser ablate. The polypoid lesion was removed with a zero tip nitinol retrieval basket, while a 4.8 fr double J catheter was inserted into the right renal pelvicalyceal system.

Result(s): The total operation time lasted 40 minutes. The patient was discharged home one day later. One week after the examination, the patient's urinary incontinence regressed markedly. The pathology was reported as a urotelial fibroepithelial polyp. A double J catheter was removed one month later. Within a month, the patient reported no more complaints regarding the issue.

Conclusion(s): A holmium laser is a feasible and safe method of treating giant FEP. A ureteral double J stent can be inserted due to postoperative ureteral mucosal edema. Although FEP is rare, it should be considered in differential diagnoses in such giant urethral masses.

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322.

RIRS in cross cohen's ureteric re-implantation: A difficult situation but safe and feasible.

Parikh K.P., Soni R., Parikh A.K.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A394), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629761048

Introduction & Objective: Flexible ureteroscopy in a reimplanted ureter is always a challenging scenario and having its own set of difficulties. Purpose of this case is to demonstrate that flexible ureteroscopy for stone management in such cases is not only feasible but safe also.

Method(s): Twenty-five years old young male presented with right sided dull aching, intermittent, nonradiating flank pain with previous history of some urologic intervention in the childhood for which no documentation available. On evaluation CT Urography suggestive of 1.1cm right inferior calyceal calculus (HU1200)with bilateral cross cohen's ureteric re-implantation. Hydrophilic (Terumo) guidewire and ureteric catheter (6Fr) used to cannulate the ureteric orifices (UO). 8.5 Fr Flexible ureteroscope (Flex Xc) was introduced after putting the guide wire in right PCS without ureteral access sheath (UAS), calculus was placed in upper calyx with the help of basket then completely dusted with 200-micron laser lithotripsy with uneventful intraoperative and postoperative course.

Result(s): Calculus was completely fragmented and dusted with laser lithotripsy with lasing time of 27 minutes with no intraoperative complication. Postoperative period was also uneventful.

Conclusion(s): Flexible ureteroscopy (RIRS) in ureteric reimplantation is a tricky situation, biggest challenge is to identify UO. Retrograde contrast study is very useful for guidewire placement, use of angled tip ureteric catheter makes job easier. UAS can be avoided; balloon dilatation of UO helps to introduce flexible scope smoothly, so with all these maneuvers RIRS is feasible and safe in such cases with no added complications.

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323.

Holmium Laser versus thulium fiber laser for treatment of urinary calculus disease.

Pattnaik P.K., Pattnaik S.K., Pattnaik M.P.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A237), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629760989

Introduction & Objective: Aim: To compare the fragmentation, dusting and retropulsion during laser lithotripsy using Holmium v/s Thulium fiber Laser system Introduction: Holmium: YAG laser operates at high pulse energy and low pulse rates during lithotripsy. On the other hand, the thulium fiber laser can effectively operate high pulse rate and low pulse energy. When used for lithotripsy of ureteric calculi, the retropulsion can be minimized at pulse rates less than 150Hz but rapidly increased at higher pulse rate. Minimal retropulsion requires pulse energy less than 150mj at 8-10Hz. Thulium fiber laser operates at 5- 35mj of pulse energy with a pulse duration of 300-500 micro seconds and pulse rate of 50-300Hz. Retropulsion with Holmium: YAG Laser linearly increases with pulse energy whereas with Thulium fiber Laser is minimal at pulse rate less than 100Hz and rapidly increases with higher pulse rate. Dusting mode requires low pulse energy (0.2 to 0.5 Joules) and higher pulse rate (50-80Hz).

Method(s): In this study we compared the fragmentation, dusting and retropulsion during laser lithotripsy using Holmium v/s Thulium fiber Laser system. We included 50 patents with ureteric and Renal calculi up to 2 centimeters and comparable stone density (1000 - 1400 Hounsfield Units) in this study after taking written, informed consent. The patients were divided into two Groups, Group A (Holmium Laser Lithotripsy) and Group B (Thulium fiber Laser Lithotripsy). Fragmentation settings in Group A (Holmium Group) was Pulse rate ranging from 10Hz- 150Hz

and Pulse energy less than 150 mJ. Fragmentation settings in Group B (Thulium Fiber Laser Group) was Pulse energy ranging from 5-35mJ, pulse rate 10-500Hz and Pulse duration of 500 micro seconds.

Result(s): In Group A (Holmium Laser) the dusting and fragmentation rate was slower (15.5+/-5.5 minutes) and calculus fragment retropulsion was more. In Group B (TM Fiber Laser) the dusting and fragmentation rate was faster (7.5+/-2.5 minutes), fragment retropulsion was negligible and dusting was better.

Conclusion(s): We conclude that TM Fiber Laser is a better modality for urinary calculus Lithotripsy since its capable of faster dusting and fragmentation, negligible fragment retropulsion.

Status

CONFERENCE ABSTRACT

Institution

(Pattnaik, Pattnaik, Pattnaik) S S Urological and Research Institute, Bombay Hospital PG Institute

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324.

Supine percutaneous nephrolithotomy (PCNL) in horseshoe kidney.

Breish M.O., Whiting D., Abdalla O., Sriprasad S., Anjum F.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A394), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629760963

Introduction & Objective: Horse-shoe kidney (HSK) is the most common renal fusion anomaly, with reported incidence of 1:400 mainly in males (M: F = 2:1). Nephrolithiasis is frequently occurred in HSK patients with an estimated range of 21%-60% due to ureteropelvic junction obstruction, urinary stasis, recurrent infections, and metabolic abnormalities. Percutaneous nephrolithotomy (PCNL) is a procedure of choice for a high stone burden in a HSK with overall stone free rate of 72 % to 93.1%, and usually performed while patient in a prone position. In this video we present a case of a supine PCNL performed in our institution to treat stones in HSK.

Method(s): 59 years old gentleman known to have HSK presented with left sided abdominal pain and a past medical history of renal stones. Previously, he was treated for renal calculi using shock wave lithotripsy and ureteroscopy. Blood investigations showed normal kidney function, however non contrast CT KUB demonstrated multiple calculi within the left moiety of HSK. He was counselled to undergo supine PCNL to treat the stone burden. Intraoperatively, the patient was prepared and positioned in the lithotomy position in order to perform retrograde studies. An Occlusion balloon catheter was placed within the ureter. An upper calyx puncture was performed to access the left moiety of HSK. Both hydrophilic and extra stiff guidewires were passed into the lower calyx. the puncture needle was removed leaving the guidewires in place. Balloon dilatation was performed followed by placement 30F Amplatz sheath. Flexible nephroscopy was performed in order to identify and basket the stones out of the kidney. 16 F Malecot nephrostomy was placed and secured.

Result(s): 1-2 days post operatively; the patient developed fever and was treated with Intravenous antibiotics. Post-operative CT KUB showed a patent nephrostomy in situ and confirmed stone free kidney. The nephrostomy was removed on day 7 and the patient was discharged 8 days post-operatively. The patient made a good recovery without major complications and was deemed stone-free following supine PCNL.

Conclusion(s): Supine PCNL is therefore feasible and safe option to treat stones in patients with HSK.

Status

CONFERENCE ABSTRACT

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325.

Treatment of kidney stones by micro-NLPC in patients with urinary diversion.

Boissier R., Negre T., Michel F., Karsenty G., Lechevallier E.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A258), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629760937

Introduction & Objective: Flexible ureteroscopy is an effective and mildly morbid technique for the treatment of nephrolithiasis but in case of history of urinary diversion (bricker, Mitrofanoff) its effectiveness may be limited. Micro-NLPC is a minimally invasive percutaneous technique. The aim of this work was to evaluate the impact of a history of urinary diversion on the efficacy and feasibility of micro-NLPC for nephrolithiasis.

Method(s): Retrospective bicentric study including 31 patients treated for nephrolithiasis by micro-NLPC. Group UD (5 patients) had urinary diversion (4 bricker, 1 enterocystoplasty with Mitrofanoff + Closure of the bladder neck) because of neurological diseases (2 multiple sclerosis, 3 spine trauma), were compared with patients with normal urinary anatomy (group N, 26 patients). All patients were operated in Valdivia position. Enlithotripsy was performed with a 200um laser fiber and a HolmiumYAG source in dusting mode.

Result(s): Clinical data for patients in groups D and N were : Mean age 45 +/- 12 vs 53 +/- 18 years (p = 0.22), mean BMI 24 +/-7 vs 27 +/-4 (p= 0.38), Charlson median 2 [2-4] vs 0 [0-2] (p = 0.02), mean GFR 135 +/- 45 vs 98 +/- 28 (p = 0.15), median number of stones 2 [1-5] vs1 [1-1] (p = 0.04), mean density 800 +/- 258 vs 1100 +/- 224 (p = 0.06), mean size (mm) calculation 13 +/-4 vs 14 +/-6 (p= 0.96) . Preoperative urine culture was positive and preoperative antibiotic were significantly more common in group D 80% vs 4% (p < 0.01). Mean operating times 95 +/- 25 vs 81 +/- 37min (p = 0.29), hospitalization duration 3 [2-7] vs 1 [17], success rate (without fragment or fragments <3mm not requiring no e reprocessing) were 60% vs. 69% (p > 0.05). Infectious complication rates were similar 40% vs 27% (p = 0.30).

Conclusion(s): In this comparative study microNLPC for nephrolithiasis, a history of urinary diversion impacted nor the feasibility nor the efficacy of treatment (operative time, success rate

and similar complications). The micro-NLPC is a minimally invasive alternative to ureteroscopy for the treatment of kidney stones with a history of urinary diversion.

Status

CONFERENCE ABSTRACT

Institution

(Boissier, Negre, Michel, Karsenty, Lechevallier) 1Aix-Marseille University, Marseille, France;
Department of Urology and Renal Transplantation, APHM, Conception University Hospital,
Marseille, France

Publisher

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326.

ULTRA-mini PERC under local anesthesia: A novel approach in select cases.

Chalouhy C., Moukarzel M., Slaba S., Tabche A., Hanna E., Harake N., Smayra T.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A257-A258), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629760865

Introduction & Objective: Mini-Perc and super-mini Perc have successfully decreased the size of renal access catheters and sheaths to 14 fr allowing the expansion of percutaneous nephrolithotomy to a special patient population i.e. pediatric etc. We have been evaluating the safety and efficacy of Ultra-mini Perc, a novel technique using antegrade flexible ureteroscopy

through a 10 fr renal access catheter under local anesthesia in high risk patients for general anesthesia and patients with complex lower tract anatomy.

Method(s): Patients who were considered high risk for general anesthesia or spinal anesthesia underwent percutaneous antegrade flexible ureteroscopy as an alternative for RIRS or conventional PCNL/Mini Perc. A 10 fr renal access catheter is placed under local anesthesia using fluoroscopic and ultrasound guidance. Lithovue - Boston Scientific flexible ureteroscopes with various deflections depending on the case were used for endoscopic laser fragmentation or dusting of the stones. Over distention of the renal pelvis by irrigation was avoided by continuous emptying through a side channel. Flexible ureteroscopy is carried out down the ureter to the uretero-vesical junction. A 6- fr stent is placed at the end of the procedure.

Result(s): Our patient population (n = 3) average age was 52 and associated major comorbidities were 2. They were considered high risk or very high risk to receive general anesthesia. The most determining risk factors for stratification were recent coronary stenting, congestive heart failure and severe COPD. The average stone size was 23 mm. One of the patients had a solitary kidney and was started on hemodialysis before the procedure. The average procedure time was 210 minutes. a small dose of 1mg of morphine was given when allowed by the anesthesia team or if the patient complained of pain. The stone free rate approached 77%. The JJ stent was placed in average for 6 weeks. The hospital stay was relatively prolonged up to 11 days irrelevant of the procedure. A nephrostomy was placed for 24 hours postoperatively in one patient who previously had it. No complications or transfusions were noted. Lithovue flexible ureteroscope with standard and reverse deflection were needed for efficient access to renal pelvis and calices in the antegrade fashion.

Conclusion(s): Ultra-mini percutaneous antegrade flexible ureteroscopy with laser fragmentation of kidney stones is a feasible, safe and a successful alternative for patients who are considered high risk for anesthesia and in need for treatment of obstructive kidney stones. (Figure Presented).

Status

CONFERENCE ABSTRACT

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327.

Novel technique for residual stones removal: Second-look flexible nephroscopy in gas (CO₂) medium.

Korolev D., Rapoport L., Tsarichenko D., Enikeev D., Enikeev M., Glybochko P.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A60), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629760817

Introduction & Objective: The residual stones problem is still relevant, especially in group of patients who has undergone PCNL for complex forms of stone disease. Flexible second-look nephroscopy in liquid irrigation medium significantly increases the cost of percutaneous surgery and also may increase complication rate associated with high intrarenal pressure especially for infected stones. To evaluate safety and efficacy of second-look flexible nephroscopy in gas (CO₂) medium for patients with residual stones after previous PCNL.

Method(s): There were a total of 22 patients, mean age was 51 +/- 14 years. 13 patients had staghorn stones and other 9 patients had large multiple stones with stone size 23.7 +/- 2.4 (20 +/- 28) mm. Conventional PCNL was performed with standard technique using a 30 Fr Amplatz sheath and ultrasound lithotripsy. The mean residual stone size and stone density were 8.3 +/- 2.7 (5 +/- 17) mm and 1019 +/- 245 (485-1483) HU respectively. Second-look flexible nephroscopy in gas (CO₂) medium using existing nephrostomy tract was performed on postoperative day 3. Irrigation was applied as gas (CO₂) medium which was pumped by laparoscopic insufflator. To assess the impact of gas (CO₂) medium we control acidbase balance (ABB) immediately before the operation, during it and 3 hours after its completion as well. Stone removal was performed by nitinol baskets. In one case we performed Holmium YAG Laser Lithotripsy for 17mm residual stone after pre-filling pelvicaliceal system (PCS) with saline. In 2 cases we failed to blow PCS with gas (CO₂) medium because of the latter high rigidity and we had to continue nephroscopy with saline.

Result(s): The mean second-look flexible nephroscopy time was 42.7 +/- 14.4 min. No postoperative complications were experienced. No stone migration was evolved. Blood pH during

the operation and 3 hours after did not go beyond the limits of acceptable values (7,35+/-7,45) and remained normal in all patients. Stone-free rate was 86.3 % at 1,5-mo follow-up (low dose CT).

Conclusion(s): Second-look flexible nephroscopy in gas (CO₂) medium is an effective and safe method for residual kidney stones removing. Benefits of this technique are as follows: relative cheapness due to lower cost of gas (CO₂), and low migration rate that reduces operating time. Low pelvic pressure allows to eliminate the risk of pyelovenous reflux and subsequent septic complications. Limitations of the technique are related with PCS rigidity, making difficult to adequately fill it with gas and also and inability to use laser energy in gas (CO₂) medium.

Status

CONFERENCE ABSTRACT

Institution

(Korolev, Rapoport, Tsarichenko, Enikeev, Enikeev, Glybochko) Institute for Urology and Reproductive Health, Sechenov University

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328.

Efficient use of low watt lasers: Good things come in small packages-Pt. 1. energy and frequency. Schwartz B.F., Lybbert D.T.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A393), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629760752

Introduction & Objective: With technology improving laser lithotripsy, urologists are given greater freedom to adjust the settings to better suit their needs depending on the location of the stone, the type of stone, and how they are trying to break up the stone. This video will address how to adjust frequency and energy settings to make the most efficient use of the laser.

Method(s): Video of cystoscopy from a live patient is presented to demonstrate how adjustments to frequency and energy change how the stone is broken up.

Result(s): The stone in this case was effectively obliterated in an efficient manner by adjusting energy and frequency depending on whether we were dusting the stone, fragmenting, or using the 'popcorn' technique.

Conclusion(s): Understanding the relationship between energy and frequency are essential in order to efficiently manage stone disease during ureteroscopy. By adjusting these setting throughout the case, urologists can decrease time spent in the operating room and have more patients that are stone free.

Status

CONFERENCE ABSTRACT

Publisher

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329.

The utility of instruments and disposables during endourologic practice among egyptian urologists.

Omar M., Sayedahmed K., Noureldin Y.A.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A234-A235), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629760680

Introduction & Objective: Our aim was to investigate the prevalence of utilization of different endourological instruments and disposables among Egyptian urologists and see how availability could affect the deviation from the universal standards that might result in reduced patient safety.

Method(s): We surveyed members of the Egyptian Urological Association (EUA) by a questionnaire including different demographic and practice characteristics with concern regarding the importance of different instruments and disposables used during ureteroscopy (URS) and percutaneous nephrolithotomy (PCNL). Also, we surveyed them regarding the incidence of different endourological complications in their work environment. All responses were collected by a commercially available Internet-based survey host www.surveymonkey.com over a period of 8 weeks.

Result(s): One hundred and fifty-two responses were received. All respondents (100%) perform ureteroscopy and 79% perform PCNL. For ureteroscopy, the most mandatory instruments and disposables included the C-arm device (83%), dormia basket (61%), ureteral stone forceps (58%), pneumatic lithotripter (50%) and regular PTFE guide wire (49%). The instruments and disposables described as optional included 4.5 Fr ureteroscope (74%), flexible ureteroscope (70%) and hydrophilic guidewire (67%). For PCNL, , the most mandatory instruments and disposables were pneumatic lithotripter (78%), Alken metal dilator (75%), Fascial dilator (45%) and regular PTFE guidewire (42%); while instruments and disposables described as optional included flexible cystoscope (70%), hydrophilic guidewire (67%), balloon dilator (57%) and laser machine (52%). An incidence of more than 3% complications rate were reported for ureteral perforation, post ureteroscopy and post PCNL sepsis by 34%, 34% and 27 % of survey respondents respectively.

Conclusion(s): The prevalence of utilization of newly introduced instruments and disposables which are considered for the universal standard of care is low among Egyptian urologists. This might result in a deviation from the universal standards of care in endourologic interventions which might affect the patient safety in terms of decreasing the success rate or increasing the risk for complications.

Status

CONFERENCE ABSTRACT

Institution

(Omar, Sayedahmed, Noureldin) Menoufia University

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330.

Safety and efficacy of stone dusting utilizing a 30-watt laser system versus a high power (100/120W) system.

Alalao O., Kott O., Sobel D.W., Tucci C., Pareek G.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A277), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629760641

Introduction & Objective: There has been an increased utilization of ureteroscopy for treatment of kidney stone disease over the last two decades. Concurrently, lithotripsy utilizing various powers of the holmium:yttrium-aluminum-garnet (Ho:YAG) laser has popularized the dusting technique which reportedly leads to a reduction in operative time, ureteral access sheath (UAS) usage, and complications related to basketing stones. The aim of our study is to report the clinical outcome of our institution experience with a lower cost 30-Watt lasers compared to a costly high-power 100W and 120 W Ho:YAG laser systems for URS lithotripsy.

Method(s): We identified 246 adult patients who underwent URSL at our institution between March 1, 2017 to March 1, 2018. Flexible ureteroscopy was conducted using the Storz flex X2 with or without an access sheath (9.5 F/11.5 F or 12 F/14 F Cook Flexor sheath). Cases were included if the pre-operative stone burden was measured using standard non-contrast CT imaging and SFR was defined as having complete absence of stones endoscopically or clinically insignificant fragments ≤ 2 mm on US or NCCT. All cases started with a similar stone fragmentation laser setting of 0.8 J and 8 Hz. followed with a 0.4 J and 25 Hz dusting setting. We compared the

operating time in our cohort to recently published data from two independent research groups that compared stone dusting using a high-energy holmium laser system (Tracey et al. J Endourol. 2018) and (Pietropaolo et al. Urolithiasis. 2018).

Result(s): 188 patients met the inclusion criteria (Table). The average stone size was 11.2mm(1.2-37mm) the mean operative time was 33.2 minutes (5-155min) and similar to our comparison cohort (53 minutes (22-115). The mean operative time was 47.2 minutes (6-155) in our series compared to 51 minutes (15-100) in the comparison cohorts. The 30Wlaser systemcost was \$100,000 less than if the high-power system utilized in the comparison groups. Conclusion(s): While dusting has been popularized with highpowered laser systems (100/120 W), utilizing a 30W laser maybe as effective. Considering the price difference between the high and low power lasers, we estimate the yearly costs savings in our institution to be around \$100,000. Operative time difference may be noticed in cases involving very large stone burden. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Alalao, Kott, Sobel, Tucci, Pareek) Brown University

Publisher

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331.

Efficient use of low watt lasers: Good things come in small packages-Pt. 2. pulse length.

Schwartz B.F., Lybbert D.T.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A392), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629760600

Introduction & Objective: With technology improving laser lithotripsy, urologists are given greater freedom to adjust the settings to better suit their needs depending on the location of the stone, the type of stone, and how they are trying to break up the stone. This video will address how to adjust pulse length to make the most efficient use of the laser.

Method(s): Video of cystoscopy from a live patient is presented to demonstrate how adjustments to pulse length to change how the stone is broken up or prevent retropulsion of the stone.

Result(s): The stone in this case was effectively obliterated in an efficient manner by adjusting pulse length depending on where we were at in the ureter and if we were intending to dust or fragment the stone.

Conclusion(s): Understanding the difference between long and short pulse length settings is essential in order to efficiently manage stone disease during ureteroscopy. By adjusting these setting throughout the case, urologists can decrease time spent in the operating room and have more patients that are stone free.

Status

CONFERENCE ABSTRACT

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332.

Combined antegrade intrarenal surgery, laparoscopy and retrograde intrarenal surgery for absolute clearance of large volume renal stone-a versatile approach.

Ramanathan J.M., Konay A.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A342), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629760596

Introduction & Objective: Desire for complete stone clearance is always there in the minds of both the patient and the surgeon. However, as the stone volume increases it becomes difficult. We wish to demonstrate a new versatile technique which could achieve this aim in certain scenarios.

Method(s): A 60-year-old diabetic gentleman with a 5 cm right sided partial staghorn calculus and multiple secondary calculi (ranging from 5mm to 1.3 cm) presented with recurrent flank pain. His creatinine was 2mg/dl due to diabetic nephropathy. Patient opted for parenchyma preserving procedure. On table we first stented the ureter. The staghorn calculus was removed by laparoscopic pyelolithotomy. Then through the right-hand working port a 12-14 Fr access sheath was introduced. Through which flexible fibre optic ureteroscope was passed into the kidney through the pyelotomy. Secondary calculi were basketed out and collected into a retrieval bag and the pyelotomy closed. At the time of DJ stent removal flexible ureteroscopy was done to check for any residual stones. Only two small (3 to 4 mm) stones remained and were basketed out without re stenting.

Result(s): The patient underwent only two procedures - the first one where the majority of the stone bulk was cleared using this unique technique and the second one was basketing out the remaining two tiny fragments at the time of DJ stent removal. Thus, patient got 100% stone free rate without injuring renal parenchyma.

Conclusion(s): In scenarios where patient have large staghorn calculus with multiple secondary stones and extrarenal pelvis, this combined procedure could significantly reduce the number of sittings needed for 100%stone free rate and do so without injuring the renal parenchyma.

Comparing flexible ureteroscope over flexible nephroscope it has the advantage of ability to pass through narrow infundibulum and even into ureter for any dislodged stones.

Status

CONFERENCE ABSTRACT

Publisher

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333.

Comparison of the fissures and fragments produced with 150µm and 272µm laser fibers with Superpulsed Thulium Fiber Laser: An in vitro study.

Panthier F., Doizi S., Berthe L., Traxer O.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A57-A58), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629760437

Introduction & Objective: Holmium: YAG (Ho:YAG) is currently the standard for lithotripsy. Recently, Superpulsed Thulium Fiber Laser (TFL) has been evaluated as an alternative for lithotripsy, using laser fibers with core-diameters (CDF) down to 50µm and additional available settings suitable for "dusting" technique. This in-vitro study compared stone fissures and fragments' size produced with 150µm CDF or 272µm CDF with different laser settings using TFL.

Method(s): 150µm CDF and 272µm CDF were compared using three TFL settings, "fine dusting" (FD:0.15J/100Hz); "dusting" (D:0.5J/30Hz); "fragmentation" (Fr:1J/15Hz). An experimental setup consisting in immersed 10mm cubes of calcium oxalate monohydrate (COM) or uric acid (UA) stone phantoms was used with a 30 seconds' laser activation time and a spiral trajectory jointly controlled, in contact mode with the stones. Fragments were acquired through sieves. Fragments and stones were observed under optical microscopy to measure fragments' size and fissure (WOF) mean widths.

Result(s): 150µm CDF produced significantly smaller WOF than 272µm CDF in all modes against UA (FD: 304.4µm+/-45.04 vs 410.2µm+/-66.5, $p < 0.001$; D: 503µm+/-59.91 vs 573.5µm+/-38.09, $p < 0.01$; Fr: 615.9µm+/-59.18 vs 689.2µm+/-51.4, $p < 0.01$) and COM except in "fragmentation" (FD: 396.9µm+/-68.27 vs 540.8µm+/-76.93, $p < 0.0001$; D: 602.5µm+/-35.42 vs

656.3 μ m $\pm$ 65.21, p = 0.04; Fr: 971.3 μ m $\pm$ 153.8 vs 930.5 μ m $\pm$ 67, p = 0.39) (Figure 1). 150 μ m CDF produced smaller fragments' diameters than 272 μ m CDF in all modes except "dusting" against UA (FD: 20.52 μ m $\pm$ 9.001 vs 38.41 μ m $\pm$ 54.42, p = 0.0003; D: 22.65 μ m $\pm$ 11.95 vs 15.45 μ m $\pm$ 11.69, p < 0.0001; Fr: 13.78 μ m $\pm$ 12.3 vs 17.01 μ m $\pm$ 40.66, p = 0.3107) and COM (FD: 20.66 μ m $\pm$ 8.099 vs 34.91 μ m $\pm$ 51.21, p = 0.0018; D: 14.2 μ m $\pm$ 8.108 vs 6.28 $\pm$ 7, p < 0.0001; Fr: 27.56 μ m $\pm$ 24.61 vs 111.9 μ m $\pm$ 189.8, p < 0.0001) (Figure 2).

Conclusion(s): These preliminary findings demonstrate that 150 μ m CDF produces smaller fragments (except in "dusting" mode) that meets the definition of "dusting" lithotripsy and smaller stone fissures than 272 μ m CDF. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Panther, Doizi, Berthe, Traxer) Service d'Urologie, Hospital Tenon, APHP

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Year of Publication

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334.

A single center prospective randomized controlled trial of two single use flexible ureteroscopes- LithoVue (Boston Scientific, USA) and Pusen PU3022a (Zhuhai Pusen, China).

Patil A., Agrawal S., Singh A., Ganpule A., Sabnis R., Desai M.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A275), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629760241

Introduction & Objective: The single use flexible ureteroscopes are now becoming equivalent to standard flexible ureteroscopes. The single use scopes have the benefit of decreasing infection transmission, avoiding the need for sterilization and no maintenance cost. The primary objective of this study was to compare the in vivo performance and surgical outcomes with these two single use ureteroscopes: LithoVue (Boston Scientific, USA) and Pusen PU3022a (Zhuhai Pusen, China) with the secondary objective being to compare their in vitro performance.

Method(s): 50 patients having renal stones less than 2cm and planned for RIRS were prospectively randomized to two groups: Group 1 had 25 patients in which LithoVue scope was used and group 2 had 25 patients in which Pusen scope was used. The various pre-, intra- and post-operative parameters were evaluated for both the scopes. The in vitro parameters included maximal tip deflection and irrigation flow rate with empty working channel, 200µm laser fiber and 1.9Fr basket. The vision of both the scopes without any accessory, with basket and with laser fiber was evaluated by an endourologist who was not part of surgical team and blinded to scope manufacturer.

Result(s): The preoperative parameters including demographic, stone size, stone location, stone HU, stone number, serum creatinine were comparable in both the groups. Intra-operative parameters including the need for ureteral dilatation ($p = 0.5$), ureteral access sheath size ($p = 0.38$), accessibility ($p = 0.66$) and maneuverability ($p = 0.66$) were comparable in both the groups. The lower pole access was possible in all cases of Lithovue but was slightly difficult in 3 cases of Pusen (two with laser and one with basket), but statistically insignificant ($p = 0.24$). Intraoperative vision was hazy in 4 cases of Lithovue during lasing and in 3 cases of Pusen with accessory ($p = 0.11$) and eight cases during lasing ($p = 0.3$) but was not statistically significant. The blinded endourologist reported more cases with hazy vision in Pusen arm but was statistically insignificant. In vitro maximal tip deflection and irrigation flow rate with or without accessory were comparable in both the scopes. One case of device malfunction in Lithovue arm was noted. Complete stone clearance was achieved in all cases.

Conclusion(s): Both LithoVue and Pusen ureteroscopes have similar in vivo and in vitro performance. Larger clinical trials are needed to confirm the efficacy of these two single use scopes.

Status

CONFERENCE ABSTRACT

Institution

(Patil, Agrawal, Singh, Ganpule, Sabnis, Desai) Muljibhai Patel Urological Hospital, Nadiad, Gujarat, India

Publisher

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335.

In vitro comparison of ablation rates between SuperPulsed Thulium fiber laser and Ho:YAG Laser for endocorporeal lithotripsy.

Panthier F., Doizi S., Berthe L., Traxer O.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A55-A56), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629760203

Introduction & Objective: Holmium: YAG (Ho:YAG) laser is currently the standard for lithotripsy. Recently, Superpulsed Thulium Fiber Laser (TFL) has been evaluated as an alternative for lithotripsy, using laser fibers with core-diameters (CDF) down to 50µm and additional available settings suitable for "dusting" technique. This in vitro study aimed to compare the efficiency of SuperPulsed Thulium Fiber Laser (TFL) and Holmium: YAG Laser based on ablation volumes. Method(s): A 50W TFL (IPG Photonics) and a 30W MH1 Ho:YAG laser (Rocamed), were used with 150µm and 272µm CDF (Sureflex, Boston Scientific®), comparing three TFL settings, "fine dusting" (FD:0.15J/100Hz); "dusting" (D:0.5J/30Hz); "fragmentation" (Fr:1J/15Hz) and two Ho:YAG settings: "dusting" (D:0.5J/30Hz); "fragmentation" (Fr:1J/15Hz). An experimental setup consisting in immersed cubes of calcium oxalate monohydrate (COM) or uric acid (UA) stone phantoms (Begostone Plus, Bego®) was used with a 20 seconds' laser activation time and an Archimed type 4 spiral trajectory jointly controlled, in contact mode with the stones using a micrometric screw. Experiments were repeated four times. Stones were dried and weighed before three-dimensional scanning (Micro-CT Quantum FX, Perkin Elmer®). Ablation rates were

assessed on ablation volumes (mm³) measured by 3D segmentation using 3DSlicer (NIH ©
Results: In "dusting" and "fragmentation" with 272 CDF, ablation volumes were four and two fold higher with TFL than Ho:YAG against COM ($p < 0,05$), and three and twofold higher against UA ($p < 0,05$), respectively (Figure 1). Ablation rates for 150CDF-TFL were significantly higher than 272CDF-Ho:YAG, except in "fragmentation" against UA ($p = 0,12$). 272CDF was associated with significant higher ablation volumes than 150CDF with TFL, except in "fine dusting" against UA ($p = 0,28$). Ablation rate in "Fine dusting" mode with 150CDF-TFL and 272CDF-TFL was associated with a twofold and threefold higher ablation rate compared to 272CDF-Ho:YAG in "dusting" mode. Conclusion(s): With equal settings and laser fibers, in vitro ablation volumes by TFL are two (fragmentation) to four (dusting) times higher compared to the Ho:YAG. Moreover, when using 150CDF with TFL, ablation volumes are still fifty percent higher to Ho:YAG with 272CDF. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Panthier, Doizi, Berthe, Traxer) Service d'Urologie, Hopital Tenon, APHP

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336.

Ureteral stenting after routine ureteroscopy: Is earlier stent removal feasible?.

Hill S., Boyko A., Merheb S., Biebel M., Katz M., Babayan R., Wason S., Wang D.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A231-A232), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629760131

Introduction & Objective: Ureteroscopy is a standard treatment option for urinary tract calculi. Common protocol is to place an internal ureteral stent after ureteroscopy for up to one week. The minimal length of time required for stenting after ureteroscopy is not well defined. Ureteral stents are associated with significant morbidity, including pain and discomfort. The objective of this study was to determine if there were any difference in postoperative unplanned clinic or ER visits based on duration of stent placement. We sought to determine if earlier stent removal was feasible.

Method(s): This is a single-institution IRB approved retrospective review of 231 ureteroscopy cases with laser lithotripsy or basket extraction for urinary tract calculi performed during 2018 by multiple surgeons. The main outcome measure was number of unplanned ED or outpatient visits within 30 days following surgery. Log rank test and Cox regression modeling (adjusted for sex, age, and presence of an impacted stone) were used to analyze if there were an association between unplanned visits and length of stent placement (number of days). The patients were separated into three groups based on stent duration: 1 (0-3 days), 2 (4-6 days), and 3 (7+ days). **Result(s):** Of the 223 patients, there were 59 in group 1 (26.5%), 80 in group 2 (35.9%), and 84 in group 3 (37.7%). 218 (97.8%) were event free within the 30-day post-operative period. 5 (2.2%) patients had an unplanned visit after stent removal (2 in groups 1 and 2, 1 in group 3). There was no statistical difference between groups (p value = 0.667), and Cox regression showed no association between duration of stent placement and unplanned visits, when adjusted for sex, age, and the presence of impacted stones (p value = 0.674). 18 (8%) patients (3 (1.3%) in group 1, 8 (3.6%) in group 2, and 7 (3.1%) in group 3) had an unplanned visit during the 30-day post-operative period, including pre- and poststent removal. Cox regression showed no association between duration of stent placement and unplanned visit, adjusted for sex, age, and presence of impacted stones (p value = 0.610).

Conclusion(s): We found no difference in unplanned clinic or ER visits in patients based on the duration of stent placement following routine ureteroscopy. Stent removal after 3 days appears to be sufficient to minimize morbidity and complications after uncomplicated ureteroscopy. Further prospective studies are required to further define optimal duration of stent placement.

Status

CONFERENCE ABSTRACT

Institution

(Hill, Boyko, Merheb, Biebel, Katz, Babayan, Wason, Wang) Boston Medical Center, Department of Urology

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337.

Fire the laser: Lithotripsy activation patterns for ureteroscopic stone dusting.

Aldoukhi A., Black K., Hall T., Hollingsworth J.M., Ambani S.N., Dauw C.A., Roberts W.W., Ghani K.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A320), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629760049

Introduction & Objective: Advances in laser technology have increased the popularity of dusting for ureteroscopy (URS). The technique consists of two phases, contact and non-contact lithotripsy. However, it is unclear how much time is spent on each phase, how much energy is utilized, and overall patterns of performance. We studied laser activation patterns during dusting lithotripsy for renal stones.

Method(s): Digital laser logs (pulse energy, pulse frequency, total energy, and timing of pedal activation) from de-identified URS procedures by 5 endourologists at an ambulatory center using a high-power holmium laser (P120; Lumenis, CA) were analyzed. Inclusion criteria were cases with total lasing time >3 minutes and where non-contact laser lithotripsy (i.e. pop-dusting) was performed using moderate pulse energy (0.5-0.8J) and high frequency (70-80Hz). We analyzed (1) total lithotripsy time, defined as time from the first laser activation to end of last laser activation including ON and OFF times, (2) contact and noncontact lithotripsy time, (3) lasing time, which is

the cumulative time the laser was active (total ON time), (4) longest pedal activation time, and (5) total energy used.

Result(s): A total of 18 cases were analyzed. A representative case is shown in Figure 1. Mean total lithotripsy time was 14.1 minutes (Table 1). Mean total energy used was 8.2 kJ (range 3.3-20.3). Total power used during contact and non-contact phases ranged between 8-25W and 40-56W, respectively. Contact and non-contact phases represented 61.2% and 38.8% of total lithotripsy time, respectively.

Conclusion(s): When using a high-power holmium laser for dusting renal stones, approximately 40% of the time is spent on non-contact lithotripsy. On average, lasing time accounts for 1/3 of total lithotripsy time. Future work should explore strategies to improve laser lithotripsy efficiency by decreasing the lasing to total lithotripsy time ratio. (Figure Presented) .

Status

CONFERENCE ABSTRACT

Institution

(Aldoukhi, Black, Hall, Hollingsworth, Ambani, Dauw, Roberts, Ghani) Department of Urology,
University of Michigan

Publisher

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Year of Publication

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338.

Use of a coagulum during ureteroscopic stone removal adds no additional case time or complications.

Valadon C., Nottingham C.U., Large T., Krambeck A.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A319-A320), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629759989

Introduction & Objective: Ureteroscopic basketing of small stone fragments can be time-consuming and challenging, especially if the patient maintains a large overall burden of stone material. The purpose of this study was to evaluate if use of a blood coagulum provides any benefit or burden to ureteroscopic stone basket extraction.

Method(s): We enrolled adult patients undergoing ureteroscopic stone removal with laser lithotripsy for renal and ureteral stones under 20mm in total size with IRB approval. Patients with a coagulative disorder or on anticoagulant medication were excluded. Following laser lithotripsy, a peripheral blood sample or 'coagulum' administered through the ureteroscope into the areas of the kidney containing stone fragments. After five minutes of coagulation time, ureteroscopic stone basket extraction was initiated. We then matched these patients 1:1 to standard patients who had previously undergone ureteroscopic stone removal without coagulum by age, stone composition, and preoperative stone size.

Result(s): We included 25 patients in each group for a total of 50 patients, with all results summarized in table 1. A median of 7 milliliters of coagulum was used. We observed no difference in total operating room (110 vs 83 minutes; $p = 0.258$), procedure time (80 vs 54 minutes; $p = 0.258$), stone-free rate (84% vs 76%; $p = 0.480$), or complication rate (0 vs 16%; $p = 0.110$) between coagulum and matched standard patients. All complications were Clavien-Dindo grade II.

Conclusion(s): Coagulum is a useful tool for ureteroscopic stone basket extraction that adds no additional procedural time or morbidity and does not alter the stone-free rate. (Table Presented) .

Status

CONFERENCE ABSTRACT

Institution

(Valadon, Nottingham, Large, Krambeck) University of Louisville, School of Medicine

Publisher

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339.

Impacted stone or Basket.

Osman A.Z.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A338), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629759909

Introduction & Objective: Retrograde Intra renal surgery becomes a well-established main modality of treating renal stones. Daily development of accessory instruments allows treating more and more difficult stones. Introducing laser fibre and retrieval basket in the same working/irrigation channel of flexible scope becomes feasible owing to the minute size of both. It is a point of technical skill which each endourologist should practice, not only a tip or trick to treat impacted basket but also in different situations of stone lithotripsy procedure. Some of such indications, relocation of stone from lower to an upper calyx, large stone burden specially of calyceal parts, a highly moving stone of considerable size that need to be fragmented, and as in our case, an impacted stone in a narrow and flat neck calyx with evidence of recurrent infections which led to sticking of the stone to calyceal wall.

Method(s): Introducing laser fibre 200 micron and N-gage basket (COOK) through same working/irrigation channel of disposable (PUSEN) scope and dusting/fragmenting impacted stone precisely and with minimal invasive maneuvers of moving laser fibre (to and from) and of the basket (in rotatory movement). Lasing was done with 0.5-0.8 Joules, 10 Hz of frequency and 5-8 watts. using short pulse pattern for fragmenting with in basket premises or long pulse pattern for projecting parts of stone beyond that.

Result(s): Most of the stones treated with this maneuver were fragmented/dusted successfully and retrieved easily without any complications or injuries of renal unit. Few baskets were broken with the laser beam; however, most were in early cases treated due to impaction of large fragments and basket without any injuries of urinary tract. The overall surgery time increased by 8 to 30 minutes in comparison to routine RIRS for straight forward procedures for almost similar stones sizes.

Conclusion(s): Introducing laser fibre beside a basket in the same working channel of flexible scope is a good and easy to master point of technique to facilitate and successfully treat intra renal or ureteric stones without any complications or extra costs of such procedures.

Status

CONFERENCE ABSTRACT

Institution

(Osman, Osman) NMC Royal Hospital, Dubai, United Arab Emirates

Publisher

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Year of Publication

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340.

Moving away from percutaneous nephrolithotomy; retrograde intrarenal surgery in complex stone scenarios.

Kk Y., Prabhakar S.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A337), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629759658

Introduction & Objective: To assess the feasibility of Retrograde Intrarenal surgery (RIRS) using fiber optic reusable flexible Ureterorenoscope as an alternate to Percutaneous Nephrolithotomy (PCNL) in treating patients with complex renal stone burden.

Method(s): We present edited videos of our RIRS technique for renal stones in two different scenarios ie large stone bulk >2cm and a partial staghorn calculus.

Result(s): A total of 62 renal stone units with large stone bulk of more than 2cm were cleared. Ureteral Access Sheath size 9.5 or 12F were placed in all cases. Stone retrieval was done with 2.2F NGage stone extractor. We use a combination of dusting and fragmentation followed by fragment extraction which will results in maximum stone free rate (SFR). All patients were discharged within or immediately after 24 hours of the procedure, except those who had febrile urinary tract infection in the postoperative period.

Conclusion(s): RIRS is a feasible option in large and complex stone disease. Overall SFR is excellent with low complication rates.

Status

CONFERENCE ABSTRACT

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341.

Compared endoscopic and microscopic recognition of urinary stones: Preliminary concordance study.

Verzotti G., Daudon M., Meria P., Almeras C., Traxer O., Estrade V.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A272), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629759590

Introduction & Objective: The treatment of urinary stones is a matter of fragmentation or even dusting. The microscopic morpho-constitutional analysis (MCA) of a whole urinary stone is then

no longer feasible. However, MCA has the best diagnostic concordance to the lithiasic mechanism that has produced the stone. We compared the endoscopic and microscopic stone recognition of urinary stones to validate the Endoscopic Stone Recognition (ESR).

Method(s): Combined and independent urinary stone MCA was performed by two experts: a urologist and a biologist. The former examined the surface and cross-section of the stones with a ureteroscope before fragmentation. The ESR was performed according to the international MCA stones classification. Stone fragments were sent for MCA and infrared spectrometry. A comparative concordance study between the two approaches (endoscopic and microscopic) was carried out. A Chi2 test was performed to assess this concordance.

Result(s): 268 files were examined. 7 files were excluded because images were not recognizable (fuzzy images). 7 more files were excluded because laboratory analysis could not be performed. In total, 254 files were included in the analysis. This comprised 34 types of stones, including 15 pure and 19 mixed. 15 stones had a specific endoscopic recognition that was not found on infrared examination. The Chi2 difference test found an excellent ($p \geq 0.05$) concordance for pure stones (Ia+Id) of whewellite (85.7% $n = 7$), (IIb) weddellite (88.2% $n = 17$), (IIIab) uric acid (97.1% $n = 34$), (IVc) struvite (100% $n = 4$) and mixed stones (Ia+IIb) whewellite/weddellite (92.5% $n = 40$), (Ia+IIIab) whewellite/ uric acid (76.9% $n = 13$), (Ia+IIb+IVa), whewellite/-weddellite/carbapatite (87.5% $n = 16$). Other morphologies have an excellent concordance: Va cystine (100% $n = 1$), VIa proteins (100% $n = 1$), IIb+IVd weddellite/brushite (100% $n = 3$) but too small a number to be considered representative.

Conclusion(s): This analysis confirms the reliability of ESR for the most frequent pure stones (Ia+Id) of whewellite, (IIb) weddellite, (IIIab) uric acid, (IVc) struvite and mixed (Ia+IIb) whewellite/weddellite, (Ia+IIIab) whewellite/uric acid, (Ia+IIb+IVa) whewellite/weddellite/carbapatite. ESR is a fundamental step in lithiasis. However, it must always be combined with infrared spectroscopy of the fragments.

Status

CONFERENCE ABSTRACT

Institution

(Verzotti, Daudon, Meria, Almeras, Traxer, Estrade) Hospital Pellegrin

Publisher

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342.

Worldwide survey of flexible ureteroscopy (FURSL) practice: A survey from EAU sections of young academic urologists (YAU) and uro-technology (ESUT).

Pietropaolo A., Skolarikos A., Liatsikos E., Rukin N., Niewad E., Sener T., Kallidonis P., Oezsoy M., Emiliani E., Maestro M.A., Tailly T., Talso M., Aboumarzouk O.M., Proietti S., Giusti G., Somani B.K.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A316-A317), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629759583

Introduction & Objective: Ureteroscopy is an accepted method for treatment of stone disease. We wanted to assess the worldwide pattern of availability in equipment and technology, with the technique used by urologists while treating stone disease.

Method(s): The survey consisted of 42 questions distributed between November 2017 and December 2018 during the bi-annual EAU section of uro-technology (ESUT) meeting and via survey monkey to Endourologists across Europe.

Result(s): A total of 114 responses were obtained of which 100 (88%) had successfully completed it. The average time taken for it was 5.4 minutes. Of the responders, 75% were endourologists and 25% were general urologists. The case volume and the number of available flexible ureteroscopes are as stated in the table. Disposable scopes were either not used at all (60%) or used in up to 20% patients by a third of respondents. A single perioperative prophylactic antibiotic dose was given by 67%. The type of irrigation used was manual (46%), mechanical (22%) or gravity (27%). An access sheath was always or almost always used by 75% responders. The mode of intra-renal stone treatment was chosen as dusting (40%), fragmentation with basketing (12%) or a combination of both (48%). Post-operative stent was used by 54% respondents in >80% of their patients and 28% in 60-80% of their patients.

Conclusion(s): There seems to be a wide variation in the availability of technology and technique used by urologists. While most respondents work in a medium or high-volume centre and have

access to digital scopes, disposable scopes are still not used widely. Among endourologists, the use of single dose peri-operative antibiotics, access sheath, stone dusting and post-operative stent seems to be the most common treatment pathway. (Table Presented) .

Status

CONFERENCE ABSTRACT

Institution

(Pietropaolo, Skolarikos, Liatsikos, Rukin, Niewad, Sener, Kallidonis, Oezsoy, Emiliani, Maestro, Taily, Talso, Aboumarzouk, Proietti, Giusti, Somani) Fundacion Puigvert. Universidad Autonoma De Barcelona, Spain

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343.

RIRS with super pulse thulium fiber laser for kidney stones larger than 2 cm.

Dymov A., Tsarichenko D., Akopyan G., Chinenov D., Ali S., Klimov R., Lekarev V., Korolev D., Rapoport L.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A315), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629759372

Introduction & Objective: According to current EAU Guidelines PNL is a first-line treatment of larger kidney stones >2 cm and In case PNL is not an option flexible ureteroscopy may be used with a higher risk of a follow-up procedure. This is mostly due to the longer operative time needed

to stone disintegration during RIRS and increased risk of infectious complications. Recently, we have evaluated in vitro performance of SuperPulse Thulium (Tm) fiber laser (IRE Polus, Russia) with wavelength of 1.94 μm and found its efficacy to be higher than the leading Ho:YAG laser for fragmentation (x1.7 times) and dusting (x2.3 to 4 times) for equal energy and repetition rate settings. Our clinical experience confirms the preclinical performance of this laser. This study aimed to assess the efficacy of RIRS with Tm fiber laser lithotripsy for larger stones.

Method(s): The SuperPulse Tm fiber laser device has been cleared for clinical use by the Ministry of Health of Russian Federation and the protocol has been approved by the institutional Ethical Review committee. We performed 18 for larger stones >2 cm with SuperPulse Tm fiber laser.

Access sheath was used in all cases. Stone size, its density, lithotripsy time (from the first to last pedal press) and 'lasering' (laser emission) time were measured. Based on surgeon's feedback, retropulsion and intraoperative visibility were assessed. Postoperative parameters were recorded.

Result(s): The average stone size was 24.7mm (20.5-36 mm). The average stone density was 848 HU (350-1600 HU). The average lithotripsy time was 43.7 min (23-70 min). The average 'lasering' time was 11.5 min (5.9-26.5 min). The retropulsion was insignificant in all cases with energy level less than 0.5 J. Visibility was estimated as optimal by surgeons in most cases. No major complications infectious included were observed in this cohort. In one case with stone, up to 36mm a second procedure was required. The overall stone-free rate was 89%.

Conclusion(s): The SuperPulse Thulium Fiber laser can be successfully utilized for efficient lithotripsy of larger stones during RIRS with acceptable operative time without compromising the safety of the procedure. It might be a possible reason to reconsider the current guidelines on stone management, apparently, further studies and data are necessary.

Status

CONFERENCE ABSTRACT

Institution

(Dymov, Tsarichenko, Akopyan, Chinenov, Ali, Klimov, Lekarev, Korolev, Rapoport) Institute for Urology and Reproductive Health, Sechenov University

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344.

Selective utilization of the lithovue single-use digital flexible ureteroscope for the management of upper urinary tract stones results in shorter operative times and cost savings.

Munver R., Tsui J., Desroches B., Degen M., Ahmed M., Lovallo G., Stifelman M.D.

Embase

Journal of Endourology. Conference: 37th World Congress of Endourology. Abu Dhabi United Arab Emirates. 33(Supplement 1) (pp A124), 2019. Date of Publication: October 2019.

[Conference Abstract]

AN: 629759348

Introduction & Objective: The judicious use of the LithoVue single-use digital flexible ureteroscope (LithoVue™, Boston Scientific Corporation, MA), can potentially reduce operative times for complex ureteroscopic (URS) procedures. With the average cost of operating room time ranging from \$21 to \$133 per minute (median approximately \$79/minute), this can result in significant savings for hospitals or ambulatory surgical centers.

Method(s): An IRB approved retrospective review was performed of all URS procedures at a single institution since the transition to digital flexible ureteroscopes in January 2016. The HackensackUMC Algorithm for using LithoVue was established in 2016 and instituted in January 2017, with indications: (1) large stone burden (≥ 1.5 cm), (2) multiple lower pole stones (≥ 3), (3) extensive renal/ureteral tumor or laser use (≥ 1 hour), (4) bilateral ureteroscopy, or (5) stones within complex/tortuous renal anatomy. Perioperative data for patients specifically with upper urinary tract stones were analyzed, including procedure indications and operative time. A control group was matched by age, sex, BMI, ASA score, stone size, location, complex anatomy, dusting versus fragmentation technique, and use of a ureteral access sheath. Prematurely completed procedures and intraoperative complications were excluded from the study.

Result(s): The total number of flexible URS procedures per year was 272 (2016), 318 (2017), and 308 (2018). In 2017, 63 single-use URS procedures were performed for the indications: (1) 35, (2) 9, (3) 14, (4) 5, (5) 6. Of these, 14 procedures involved 2 ($n = 12$) or 3 ($n = 1$) indications. In 2018, 91 single-use URS procedures were performed for the indications: (1) 62, (2) 24, (3) 5, (4) 6, (5) 6. Of these, 20 procedures involved 2 ($n = 16$) or 3 ($n = 4$) indications. A total of 58 patients treated with upper urinary tract stones met inclusion criteria. The median age was 47, BMI 26, and ASA score 2. A ureteral access sheath was used in 84% of procedures. The mean operative

time was 67 minutes (LithoVue group) and 84 minutes (control group) [p = 0.007] for patients with large stones, multiple lower pole stones, or stones within complex/tortuous renal anatomy.

Conclusion(s): The implementation of an algorithm for LithoVue utilization resulted in an average 17 min operative time reduction and significant cost savings as compared to a matched pair cohort. This observation may be a result of improved scope maneuverability, use of a secondary monitor for URS, fewer equipment malfunctions, and allowance of more aggressive laser use. Select use of a single-use ureteroscope can reduce operative times with resultant cost savings at high volume institutions.

Status

CONFERENCE ABSTRACT

Institution

(Munver, Tsui, Desroches, Degen, Ahmed, Lovallo, Stifelman) Hackensack University, Medical Center

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345.

Case report of a 75-year-old male with matrix stone disease: An alternative treatment.

Diana P., Regis F., Frego N., Piccoli F., Domanico L., Lughezzani G., Bevilacqua G., Paciotti M., Fasulo V., Maffei D., Hurle R., Lazzeri M., Casale P., Buffi N.M., Guazzoni G., Saita A.

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Urolithiasis.

Milan Italy. 18(7) (pp e2999), 2019. Date of Publication: 2019.

[Conference Abstract]

AN: 2002936096

Introduction & Objectives: Matrix renal stone is an uncommon form of calculi. The standard therapeutic approach is still under debate as only a handful of cases are described in the literature. It consists of a combination between ureterorenoscopy (URS) and percutaneous nephrolithotomy (PCNL) and diagnosis is usually made intraoperatively. We describe a rare case of matrix stone treated with retrograde intrarenal surgery (RIRS).

Material(s) and Method(s): We report a 75-year-old Caucasian male who referred to our center with a history of recurrent renal stones and UTI since 2013. The patient is affected by T2DM and presents with a stable aortic aneurysm. He was admitted in the ER in March 2019 for urosepsis. CT urography was performed revealing left hydronephrosis and presence of dense material in the collecting system. The patient was prepared with antibiotic therapy and rescheduled for definitive treatment. Ureterorenoscopy over guidewire was performed and it revealed fibrinous material occupying the whole collecting system and two solid stones. Drainage of the material was performed through aspiration and the calculi were removed with a 0-tip Ngage basket. A mono J stent and catheter were left in place.

Result(s): No peri- or post-operative complications were recorded. Drains were removed and the patient was discharged on POD 3. A qualitative analysis of the stone was performed and it revealed a protein matrix material and calcium oxalate stones. Follow-up CTU was done showing resolution of the left hydronephrosis, normal enhancement and contrast filtration of both kidneys, and the absence of any filling defects. Renal function tests and inflammatory markers were within normal limits and the patient reported complete resolution of symptoms.

Conclusion(s): Matrix stones needs to be suspected by the urologist when basal CT scan discard stone disease despite clear symptomatology. We describe a feasible and safe method to treat matrix calculi that could be considered in this kind of disorders as less invasive and less expensive than combination therapy.

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CONFERENCE ABSTRACT

Institution

(Diana, Regis, Frego, Domanico, Lughezzani, Bevilacqua, Paciotti, Fasulo, Maffei, Hurle, Lazzeri, Casale, Buffi, Guazzoni, Saita) Humanitas Research Institute, Dept. of Urology, Rozzano, Italy (Piccoli) Humanitas Research Institute, Dept. of Radiology, Rozzano, Italy

Publisher

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346.

Dusting versus basketing when performing flexible ureteroscopy lithotripsy for the management of ≤ 2 renal stone: An evidence from a single-center randomized controlled trial.

Zhong W., Zeng G.H.

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Urolithiasis.

Milan Italy. 18(7) (pp e2737), 2019. Date of Publication: 2019.

[Conference Abstract]

AN: 2002936075

Introduction & Objectives: To evaluate the efficiency and safety of dusting versus basketing when performing flexible ureteroscopy lithotripsy for the management of renal stone less than 2 cm.

Material(s) and Method(s): This is a single-center, prospective, randomized controlled trial.

Patients stone size less than 2 cm, normal renal function and older than 18 years old were enrolled in the study. The eligible patients were randomly divided into two groups: dusting and basketing group. Perioperative data were recorded and compared between the two groups.

Result(s): A total of 150 patients were enrolled from October 2017 to February 2019, and 146 patients were included for statistical analysis: 72 in Basketing group (One case was converted to PCNL due to ureteral stricture and 2 cases were lost to follow-up) and 74 in Dusting group (1 cases was lost to follow-up). There were no significant differences in age, sex, BMI, stone characteristic between the two groups. Operation time was no significant difference between the two groups (21.61 ± 13.1 min vs 23.62 ± 13.52 min, $P=0.363$). The proportion of hydronephrosis in the Dusting group was higher than that in the Basketing group (82.43% VS 68%, $P= 0.04$).

There was no significant difference in the complications rate between the Basketing group and the Dusting group (18.06% VS 18.92%, $P=0.893$). Complications occurred in 13 cases in the Basketing group. One case was hospitalized in ICU due to urinary sepsis and was discharged from hospital. The rest were grade I complications such as fever, pain and so on. 14 cases in the

Dusting group had complications. All of these were grade I complications. Calcium oxalate calculi were predominant in both groups (79.63% vs 72.92%, $P=0.425$). The stone free rate of Basketing group was lower than that of Dusting group (61.11% VS 79.73, $P= 0.014$). Among patients with stones less than 1.5 cm, 38 patients in the Basketing group and 28 patients in the Dusting group, there was no significant difference in stone free rate between the two groups (78.95% vs 85.71%, $P=0.481$). However, in patients with 1.5-2.0cm stone, the stone free rate of Dusting group was significantly higher than that of Basketing group (76.09% vs 41.18, $P= 0.002$).

Conclusion(s): For the patients with kidney or upper ureteral stone less than 1.5 cm, Basketing and Dusting are safe and effective. For the patients with 1.5-2 cm kidney or upper ureteral stone, dusting is still a safe and effective holmium laser lithotripsy way. If Basketing was chosen, the stone should be set out as far as possible to improve the stone free rate.

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CONFERENCE ABSTRACT

Institution

(Zhong) The First Affiliated Hospital of Guangzhou Medical University, Dept. of Urology, Guangzhou, China (Zeng) Minimally Invasive Surgery Center, The First Affiliated Hospital of Guangzhou Medical University, Dept. of Urology, Guangzhou, China

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347.

Miniturized percutaneous nephrolithotomy in a transplanted kidney without retrograde pielography.

Sanchez Ramos J., Sanchez Garcia J.F., Diaz Alvarez J.M., Perez Schoch M., Montero Fabuena R., Almuster Dominguez S., Lopez Diez M.E., Carballo Quinta M., Barros Rodriguez J.M., Ojea Calvo A.

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Urolithiasis. Milan Italy. 18(7) (pp e2956), 2019. Date of Publication: 2019.

[Conference Abstract]

AN: 2002936066

Introduction & Objectives: Nephrolithiasis in a transplanted kidney is an uncommon complication, with an incidence from 0.2 to 1.7%. Management should look for a complete resolution with morbidity as low as possible. We describe the technique in case of kidney transplantation and nephrolithiasis treated with mini percutaneous (mini-PCNL), and impossible retrograde access.

Material(s) and Method(s): A 35 years old male with a transplanted and urolithiasis was admitted to our department for mini-PCNL. The kidney was transplanted in the right iliac fossa, and the ureter was anastomosed following Lich-Gregoir Technique. Images control showed the presence of 3 lithiasis. The biggest one located in renal pelvis is about 12x8mm long associated with obstructive uropathy, and 2 smaller stones in the upper caliceal group. There is no repercussion in renal function. We proposed an endourological treatment.

Result(s): The mini-PCNL treatment was carried out in Supine Lithotomy Position and general anesthesia. Flexible Cystoscope revealed transplanted kidney meatus is in the bladder dome. Fail attempt of retrograde catheterization. A pure ultrasound-guided puncture was inserted in the upper caliceal group, to make easy the access to the ureter. And antegrade pielography was performed. The guide wire was inserted into the pelvicaliceal system and dilatation was performed using a single metal dilator (15/16-Ch operating sheath Karl Storz). Holmium: YAG laser lithotripsy using 365 µm laser fiber was performed and Stones fragments were removed with a 1.9 Fr nitinol basket. Endoscopic revision of the rest of the cavities, ureter and bladder was realized by Karl Storz digital flexible ureteroscope through renal access. Antegrade placement of a ureteral stent and nephrostomy were positioned in the renal pelvis. The postoperative course was uneventful. The nephrostomy was removed 48 hours after surgery and the ureteral catheter 3 weeks later. The stone analyses showed that it was mixed from calcium oxalate and calcium phosphate. Three months after mini-PCNL kidney function parameters were normal, and the graft is stone free.

Conclusion(s): Ureterovesical anastomosis is usually located at the bladder apex, making ureteral intubation and entry in the ureter very difficult. The ultrasound-guided puncture of a transplanted kidney in the iliac fossa is a relatively simple procedure because the graft is situated just below the muscles of the anterior abdominal wall. Also, the distance from skin to kidney is small. The miniaturized percutaneous nephrolithotomy is an excellent choice that minimize the complications

and renal repercussions from a conventional percutaneous surgery in patients where a good functional reserve is a must for the future survival.

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CONFERENCE ABSTRACT

Institution

(Sanchez Ramos, Sanchez Garcia, Diaz Alvarez, Perez Schoch, Montero Fabuena, Almuster Dominguez, Lopez Diez, Carballo Quinta, Barros Rodriguez, Ojea Calvo) Hospital Alvaro Cunqueiro, Dept. of Urology, Vigo, Spain

Publisher

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348.

Operator-assisted vs self-achieved basketing during ureteroscopy: Results from an invitro preference study.

Ventimiglia E., Doizi S., Quadrini F., Pauchard F., Villa L., Kamkoun H., Traxer O.

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Urolithiasis. Milan Italy. 18(7) (pp e2764), 2019. Date of Publication: 2019.

[Conference Abstract]

AN: 2002936057

Introduction & Objectives: Basketing is one of the fundamental yet most challenging step during flexible ureteroscopy. It is traditionally performed by an endourologist and an assistant who manipulates the basket, and requires both dexterity and coordination between the surgeon and

the assistant. A recently introduced device (LithoVue Empower™ or LE, Boston Scientific, USA) allows the surgeon to directly control the basket without the need of an assistant. We aimed to evaluate the impact of this device on stone retrieval time and surgeon's mental/physical demand.

Material(s) and Method(s): We used a portable bench-training model for flexible ureteroscopy, the Key-box (K-Box, Porge's-Coloplast, France), in order to compare the LE configured with a 1.9F stone-retrieval tipless basket (ZeroTip™, Boston Scientific, USA) and a traditional assistant-manuevered 1.9F stone-retrieval tipless basket (ZeroTip™, Boston Scientific, USA). Six experienced endourologists (>100 ureteroscopies each) and 7 residents in training in urology retrieved a fake stone (5x5x5mm) from 3 different cavities of the K-Box simulating three renal cavities with increasing access complexity (C1 the simplest, C2 the intermediate, and C3 the hardest) first with the traditional basket (Task 1) and then with the LE device (Task 2). A single use ureteroscope (LithoVue™, Boston Scientific, USA) was used in all cases. None of the subjects had ever used before the LE device. We recorded time from ureteroscope insertion until stone retrieval and defined a failure in case time exceeded 300 seconds. All the operators filled in the NASA Task Load Index (TLI) for self-evaluation of their performance. We then compared results from Task 1 and Task 2 in terms retrieval time, failure rates, and NASA TLI scores using non-parametric descriptive statistics.

Result(s): Overall, stone retrieval times and failure rates were comparable between Task 1 and Task 2 (all $p>0.05$) for all analyzed cavities. NASA TLI scores revealed lower effort ($p=0.001$) and frustration ($p=0.04$) for the Task 2 vs Task 1. When stratifying the analyses according to surgical experience, fully trained urologists performed faster stone retrieval than residents in training for the C1 and C2 cavities (both $p<0.01$) overall, but no difference was found according to the retrieval device used. Residents showed lower efforts ($p=0.005$) and frustration ($p=0.04$) scores at NASA TLI when performing Task 2, whereas this pattern was not observed in experienced urologists.

Conclusion(s): The individually controlled retrieval system is an effective device assisting stone retrieval, and does not seem to necessitate specific training even among unexperienced endourologists, who might instead benefit from it in terms of procedure-related anxiety and exertion.

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Status

CONFERENCE ABSTRACT

Institution

(Ventimiglia, Villa) IRCCS Ospedale San Raffaele, Division of Experimental Oncology/Unit of Urology; URI, Milan, Italy (Doizi, Quadrini, Pauchard, Kamkoun, Traxer) Hopital Tenon, Dept. of Urology, Paris, France

Publisher

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349.

Optimized anesthesia protocol for dusting retrograde intrarenal surgery: A pilot study.

Gadzhiev N., Oibolatov U., Kolotilov L., Parvanyan S., Akopyan G., Petrov S., Cottone C.M., Okhunov Z.

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Urolithiasis. Milan Italy. 18(7) (pp e2865), 2019. Date of Publication: 2019.

[Conference Abstract]

AN: 2002935946

Introduction & Objectives: One of the challenges presented in retrograde intrarenal surgery (RIRS) is the movement of the stone within the operative field associated with respiratory excursions during mechanical ventilation. To overcome this challenge, we propose a new general anesthesia technique combining high frequency jet ventilation (HFJV) with small volume mechanical ventilation (SVMV).

Material(s) and Method(s): Patients undergoing RIRS for kidney stones were prospectively recruited to participate in the study from November 2017 to May 2018. At the beginning of each case after the induction of general anesthesia (GA) with mechanical ventilation (MV) surgeons were asked to assess the mobility of the operative field according to the developed questionnaire scale. The questionnaire consisted of 5 degrees of assessment of kidney mobility and each question was scored from 1 to 5, where 1 being very mobile (extremely poor conditions for dusting) and 5 completely immobile (ideal conditions for dusting). After this assessment our

modified technique of general anesthesia was applied which we called combined respiratory support (CRS) which consisted of reduction of tidal volume to 250-300 ml and respiratory rate to 4-5 per minute with transcatheter HFJV through endotracheal tube with a respiratory cycle frequency (RCF) of 300 per minute and maintained during RIRS. At the beginning of CRS, surgeons were once again asked to assess the mobility of the operative field according to above mentioned questionnaire. Main ventilation parameters were recorded and compared in both regimens: before and after CRS.

Result(s): A total of 38 patients were included in the study. The mean age was 49 (range 45-53) with a mean stone size of 10mm (range 10-14) and Hounsfield unit of 1060 (range 930-1190). All patients underwent successful RIRS and no intraoperative complications occurred throughout the duration of the study. A statistically significant difference between ventilation parameters prior to and after CRS institution was detected in all cases, however their clinical impact was negligible. Despite this, assessment via the questionnaire scale point values varied significantly before and after the application of CRS and were 2.3 (2.1; 2.6) and 3.8 (3.7; 4.0) respectively ($p < 0.001$) in favor of CRS.

Conclusion(s): The novel combined respiratory approach consisting of high frequency jet ventilation and small volume mechanical ventilation appears to provide better conditions for stone dusting through reduced respiratory kidney motion and is not associated with adverse health effects or complications

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CONFERENCE ABSTRACT

Institution

(Gadzhiev) Pavlov First Saint Petersburg State Medical University, Dept. of Urology, Saint Petersburg, Russian Federation (Oibolatov, Kolotilov, Parvanyan) The Nikiforov Center of Emergency Medicine, Dept. of Anesthesiology, Saint Petersburg, Russian Federation (Akopyan) Sechenov First Moscow State Medical University, Dept. of Urology, Moscow, Russian Federation

(Petrov) Pavlov First Saint Petersburg State Medical University, Dept of Urology, Saint Petersburg, Russian Federation

(Cottone, Okhunov) University of California, Dept. of Urology, Orange, United States

Publisher

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Year of Publication

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350.

Optimizing stone free rate evaluation time point for laser lithotripsy in dusting mode.

Dymov A., Rapoport L., Enikeev D., Tsarichenko D., Sorokin N., Akopyan G., Proskura A., Ali S., Klimov R., Lekarev V., Korolev D.

Embase

Journal of Urology. Conference: American Urological Association Annual Meeting, AUA 2019. Chicago, IL United States. 201(4 Supplement 1) (pp e259-e260), 2019. Date of Publication: April 2019.

[Conference Abstract]

AN: 629469782

INTRODUCTION AND OBJECTIVES: Stone Free rate is routinely used to assess the efficiency of surgical treatment for kidney stones. However, there is an inconsistency in the definition of 'stonefree' due to differences in the timing of the assessment and the size and location of stone fragments. It is widely accepted to perform CT scanning on postoperative day (POD) 1 to evaluate residual stones after PCNL. But this timing may not be optimal for SFR assessment after RIRS since dust accumulations can mimic real residual fragments at short-term follow-ups. This study evaluates the SFR on POD 3 and POD 90 after RIRS. We defined "Stone-free" as absence of any stone fragments after surgery.

METHOD(S): 32 patients who underwent RIRS for renal stones between January, 2018 and July, 2018 were enrolled into the study. Stone size ranged 7e25 mm (medium size - 11.4 mm) and stone density varied from 330 to 1960 HU (mean density 987 HU). Super- Pulse Thulium fiber laser (IRE Polus, Russia) was used for stone disintegration with different settings in dusting and fragmentation modes (0.1 - 4J, 7-300Hz, 6-40W). Low dose CT scanning was performed on POD 3 and POD 90 to assess SFR.

RESULT(S): SFR on POD 1 was achieved in 7% of cases. In those 93% of cases with residuals the stone size was less than 3 mm in 39%, 4e6 mm in 22%, 7e9 mm in 22%, more than 10 mm in

17%. SFR on POD 90 was achieved in 91% of cases. In those 9% of cases with residuals the stone size was less than 2 mm in 75% and 3 mm in 25%.

CONCLUSION(S): High rate of artifacts on POD 1 after RIRS is likely to be due to dust accumulations in the collecting system of the kidney. Apparently, more time is required for dust and small fragments wash-out. Seemingly, CT scanning to assess SFR on POD 90 is more reasonable.

Status

CONFERENCE ABSTRACT

Institution

(Dymov, Rapoport, Enikeev, Tsarichenko, Sorokin, Akopyan, Proskura, Ali, Klimov, Lekarev, Korolev) MoscowRussian Federation

Publisher

Lippincott Williams and Wilkins

Year of Publication

2019

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351.

In vitro and in vivo new evidence for flexor VUE deflecting endoscopic system use: Optimization of the stone free rate (SFR) after RIRS.

Saita A., Villa L., Guazzoni G., Lazzeri M., Peschechera R., Bevilacqua G., Domanico L., Hurle R., Buffi N.M., Lughezzani G., Casale P., Fasulo V., Paciotti M.

Embase

Journal of Urology. Conference: American Urological Association Annual Meeting, AUA 2019.

Chicago, IL United States. 201(4 Supplement 1) (pp e332), 2019. Date of Publication: April 2019.

[Conference Abstract]

AN: 629468752

INTRODUCTION AND OBJECTIVES: Stone extraction devices have become a routine tool after RIRS. Basketing increases the surgical duration and can lead to serious complications such as perforation and avulsion of the ureter wall. Furthermore, obtaining a complete stone fragment removal is still a challenging issue. In this video we present in vitro experiment for a new conception of Flexor Vue Deflecting Endoscopic System (FVDES) use and its in vivo application/implementation. The aim of our study is to create and test a new system that is able to routinely, effectively clear the fragments remaining after RIRS.

METHOD(S): FVDES includes a disposable sheath and a visualization source, originally designed as a flexible endoscope. We placed an irrigator within optical channel so to have the flexor carry out a new function. We created an in vitro study that modelled the lithic fragments remaining post-RIRS. The device was implemented in vivo on 11 consecutive patients treated for primary or recurrent renal stones of medium size (1,5-2,5 cm). All the procedures were performed using a 200 mum holmium fiber using a flexible ureterorenoscope (Olympus URF-V2) and standard UAS. The FVDES was positioned at the end of procedure in order to improve SFR. The outcomes of interest are feasibility, safety and efficacy. Feasibility was defined as the capacity of positioning and favouring fragment removal according to the Bernulli's principle by the Flexor device. Safety was defined by complication analysis. Efficacy outcomes measured operative time, SFR, hospital stay, re-treatment and rehospitalization. SFR was defined as fragments less than 4 mm assessed by ultrasound and CT. Descriptive statistical analysis was applied.

RESULT(S): The experimental in vitro model showed the efficacy of the device, allowing the removal of about 90% of fragments. In vivo, 11 patients (M/F ratio: 7/4, mean age 63.5 +/- 8.3) were treated. The stones were located in the lower calyces, and the renal pelvis in 3 and 8 patients, respectively. Medium stone size was 1.8 mm +/- 3.2. The procedure with FVDES was feasible in all the patients. Eight patients underwent preoperative ureteral stent. Mean operative time was 82 min +/- 13.7 and median hospital stay was of 1.5 day. The SFR after 30 days was 81% (9/11). Post-operatively we had no significant bleeding. 1 patient had fever and required antibiotic treatment for 5 days. No cost/effectiveness study was performed.

CONCLUSION(S): Our in vitro results confirmed the rationale for new conception of FVDES use. In vivo results showed it to be feasible, safe and effective for patients with medium size (1.5 to 2.5 cm) renal stones. The technique we described could allow to avoid the basketing whilst increasing the SFR after RIRS. The removal of the residual stones could lead to a reduction of the risk of disease reoccurrence and also lower the chances of patients requiring re-treatments. The positive impact may extend to include a reduction in the costs of the procedure. Further studies with larger population are mandatory before the introduction of this technique in our clinical practice.

Status

CONFERENCE ABSTRACT

Institution

(Saita, Guazzoni, Lazzeri, Pescechera, Bevilacqua, Domanico, Hurle, Buffi, Lughezzani, Casale, Fasulo, Paciotti) RozzanoItaly (Villa) MilanoItaly

Publisher

Lippincott Williams and Wilkins

Year of Publication

2019

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352.

In vitro comparison of efficiency between superpulsed thulium fiberlaserand Ho:YAG laser for endocorporeal lithotripsy.

Chiron P., Berthe L., Haddad M., Doizi S., Traxer O.

Embase

Journal of Urology. Conference: American Urological Association Annual Meeting, AUA 2019. Chicago, IL United States. 201(4 Supplement 1) (pp e1093), 2019. Date of Publication: April 2019.

[Conference Abstract]

AN: 629468435

INTRODUCTION AND OBJECTIVES: As its wavelength of 1940nm more closely matches the water absorption peak of electromagnetic radiations, the SuperPulsed Thulium Fiber Laser should be more efficient than the Holmium:YAG Laser, which is the current gold-standard. Therefore, this technology should allow working with higher efficiency for stone treatment. We aimed to compare in vitro the efficiency of SuperPulsed Thulium Fiber Laser (TFL) and Holmium:YAG Laser.

METHOD(S): First, a TFL of 50W (IPG Photonics) and an MH1 Holmium:YAG laser of 30W (Rocamed), were modified at our convenience in order to deliver only one single pulse on hard

kidney stones phantoms made of Begostone, with a 272µm fiber placed perpendicularly to the target, at different distances established with a micrometric screw. Experiments were repeated ten times. The resulting craters were studied and measured by optical microscopy (Zeiss AxioCam Imager 2). Secondly, we treated hard and soft kidney stones phantoms for two minutes in an in vitro model, using a 200 µm fiber and a Lithovue ureterorenoscope (BostonScientific): kidney stones were dried and weighed before and after treatment, with a Mettler AT261 analytic balance (Mettler) allowing to calculate the speed of destruction for each parameter.

RESULT(S): For a single pulse, the volume ablated was about 3 times higher with the thulium laser. This was due to a bigger surface of the crater with TFL, and there was no significant difference between the depth of the impacts obtained with the two lasers. During lithotripsy, the average destruction speed was 0,57, 1,32 et 1,99 mg/sec for TFL parameters of "fine dusting", "dusting" and "fragmentation", while it was 0,25 and 0,98 mg/sec respectively for Ho:YAG parameters of "dusting" and "fragmentation".

CONCLUSION(S): Compared to the Ho:YAG laser, the volume ablated by a single pulse with TFL is three times higher, and its speed of ablation is 2 (fragmentation) to 5 (dusting) times higher. Technologic superiority of TFL added to very high frequencies seems to lead to significant time saving. Further studies are necessary to confirm these observations in vivo.

Status

CONFERENCE ABSTRACT

Institution

(Chiron) Saint Mandefrance (Berthe, Haddad, Doizi, Traxer) ParisFrance

Publisher

Lippincott Williams and Wilkins

Year of Publication

2019

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Ureteroscopic assessment of stone burden after dusting correlates with clinical outcomes despite poor stone-free rates on post-procedural imaging.

Kott O., Chambers A., Al-Alao O., Jung E., O'Rourke T., Wasserman M., Balen A., Ghaly M., Wright T., Rodriguez S., Marthi S., Tucci C., Pareek G.

Embase

Journal of Urology. Conference: American Urological Association Annual Meeting, AUA 2019. Chicago, IL United States. 201(4 Supplement 1) (pp e1091-e1092), 2019. Date of Publication: April 2019.

[Conference Abstract]

AN: 629468280

INTRODUCTION AND OBJECTIVES: Ureteroscopic laser lith-otripsy (URSL) has become the most common form of surgical management of kidney stones in the United States. Intraoperative residual stone burden evaluation (IRSBE) is an important technique that allows the surgeon to interpret the success of the procedure. Routinely, urologists perform postoperative imaging to assess for residual stone burden and/or silent hydronephrosis. We evaluated the correlation rate between IRSBE and postoperative imaging and postoperative adverse clinical outcomes. We sought to compare the predictive value of IRSBE and postoperative imaging (PI) on postoperative adverse clinical outcomes.

METHOD(S): A total of 187 adult patients who underwent URSL during a 6-month period between March 1, 2017 and September 1, 2017 were included in the study. Clinical and PI data, including unplanned visits to the emergency department, readmissions and stone surgeries were retrospectively collected by medical record review. Two different methods were utilized to assess residual stone burden: IRSBE and postoperative imaging with ultrasound or computed tomography. Stone size was measured using the largest dimension. Stone burden was calculated by adding stone sizes of all locations. Intraoperative stone free status was defined as complete stone dusting or removal of all stone fragments >3mm. Postoperative stone free status was defined as the absence of residual stone fragments (0 mm) on PI.

RESULT(S): Study cohort characteristics are described in table 1. Despite differences in determined stone free status between IRSBE (70%) and PI (54.8%), only 12 (6.4%) patients required postoperative procedures and only 6 (3.2%) required URSL. Residual stone on postoperative evaluation or postoperative imaging did not predict postoperative encounters or stone surgeries.

CONCLUSION(S): In this study, there was poor correlation in stone burden evaluation between IRSBE and PI. Despite the low PI stone free rate, auxiliary treatments rate was low. Dusting at the time of URSL with IRSBE appears to be an effective method of determining clinical outcomes despite poor PI stone-free rates.

Status

CONFERENCE ABSTRACT

Institution

(Kott, Chambers, Al-Alao, Jung, O'Rourke, Wasserman, Balen, Ghaly, Wright, Rodriguez, Marthi, Tucci, Pareek) ProvidenceRIUnited States

Publisher

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Year of Publication

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354.

Retrograde intrarenal surgery in the treatment of lower pole stones: Is a better clinical scenario for using single-use flexible ureteroscopes? Results of a prospective case - Control study.

Salvado J., Sanchez R., Cabello J., Cabello R., Moreno S., Kompatzki A., Olivares R., Velasco A.

Embase

Journal of Urology. Conference: American Urological Association Annual Meeting, AUA 2019.

Chicago, IL United States. 201(4 Supplement 1) (pp e1154), 2019. Date of Publication: April 2019.

[Conference Abstract]

AN: 629467485

INTRODUCTION AND OBJECTIVES: The best option in management of the lower pole stones is still a matter of debate. Retrograde intrarenal surgery is one of the less invasive alternatives accepted today. With the recent incorporation of disposable flexible ureteroscopes, the discussion on this topic has been reactivated. The aim of this study was to compare the clinical results between flexible disposable and reusable ureteroscopes, in lower pole stones treatment.

METHOD(S): A case and control study was carried out using data registered prospectively in a database from our center. The clinical results from 2 groups of patients were analyzed. In the first group of patients, surgery was performed with a reusable flexible fiberoptic ureteroscope (Cobra, Richard Wolf) and for second group, a disposable flexible ureteroscope was used (Uscope 3022, Pusen Medical). All procedures were performed with nitinol baskets, holmium laser lithotripsy and ureteral access sheaths whenever needed. The variables analyzed included: total surgery time, fluoroscopy time, postprocedure ureteral catheter requirement, stone free rate and complications(Clavien-Dindo) among others. The results were evaluated using Student's t test, Mann-Whitney test and Fisher's test.

RESULT(S): 30 cases were performed with reusable ureteroscope and 31 cases with single - use ureteroscope. Both groups were comparable in their demographic and clinical variables including stone burden, number of pre-stenting patients and use of access sheath. The characteristics regarding length, width and angle of the infundibulum (measured by retrograde ureteropyelography) were also comparable. Regarding the clinical results, there were no difference with respect to stone free rate, need for ureteral catheter, complications or hospital stay. Significant differences were found for the average surgery time, 56.1 vs 77 mins ($p = 0.01$), as well as with respect to the fluoroscopy time 66.1 vs 83.4 sec ($p = 0.02$), both in favor of disposable ureteroscopes.

CONCLUSION(S): Disposable flexible ureteroscopes have been validated as an option, at least equivalent, with respect to reusable ones when evaluating clinical results in the treatment of lower pole stones. The shorter duration of the surgery and less fluoroscopy during the procedure could play in its favor, especially considering the high costs associated with the operating room use, as well as the need to reduce radiation exposure.

Status

CONFERENCE ABSTRACT

Institution

(Salvado, Sanchez, Cabello, Cabello, Moreno, Kompatzki, Olivares, Velasco) SantiagoChile

Publisher

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Year of Publication

2019

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355.

Integrated, real-time digital stone measurement in ureteroscopic stone procedures: A workflow feasibility study.

Koo K., Aro T., Lim S., Petrisor D., Stoianovici D., Matlaga B.

Embase

Journal of Urology. Conference: American Urological Association Annual Meeting, AUA 2019. Chicago, IL United States. 201(4 Supplement 1) (pp e153), 2019. Date of Publication: April 2019. [Conference Abstract]

AN: 629387197

INTRODUCTION AND OBJECTIVES: Accurately estimating fragment size is an important task during ureteroscopic stone management, as it can provide determination of the adequacy of dusting or the ability to retrieve fragments through a ureteral access sheath. We previously reported an ex vivo validation of a novel software that can accurately measure small stone fragments. This study assesses the feasibility of integrating the software into operating room workflow.

METHOD(S): Mock stone fragments were selected to mimic a variety of non-ideal fragmentation conditions. Using a commercial model of the kidney and ureter designed for ureteroscopy training, we performed two versions of a timed basketing task to simulate real-time software measurement. In the conventional version, the ureteroscope was navigated from the UPJ to the stone in a superior pole calyx, then the stone was retrieved with the basket back to the UPJ. In the measurement version, the ureteroscope was again navigated from the UPJ to the stone, then real-time measurement of the stone was performed using the software, followed by stone retrieval to the UPJ. Differences in task completion time and fragment characteristics were compared.

RESULT(S): A total of 20 stone fragments were selected with different combinations of internal characteristics: size (mean 7.1 mm, range 3.2-10.3 mm), 3-dimensional shape (50% pyramidal, 30% ovoid, 20% cuboid), surface contour (50% smooth, 50% rough), and planar symmetry (60% asymmetric, 40% symmetric). In the conventional version of the task, mean completion time was 16.5 sec (range 10.1-33.6 sec), compared with a mean completion time of 38.8 sec (range 27.2-60.0 sec) in the measurement version. The additional procedure time required to perform real-time measurement averaged 22.2 sec (range 8.8-42.6 sec). Variation in these times for certain

stones was typically due to more challenging planar alignment of the ureteroscope and basket tip, which is required for accurate calculation using the software.

CONCLUSION(S): Integrating a novel software for real-time stone measurement during ureteroscopy is feasible and has a modest effect on the time required for stone manipulation. These findings support in vivo trials of the software to enhance clinical decision-making in ureteroscopic stone management.

Status

CONFERENCE ABSTRACT

Institution

(Koo, Aro, Lim, Petrisor, Stoianovici, Matlaga) BaltimoreMDUnited States

Publisher

Lippincott Williams and Wilkins

Year of Publication

2019

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356.

Prospective clinical study on SuperPulse Thulium fiber laser: Initial analysis of optimal laser settings.

Dymov A., Rapoport L., Tsarichenko D., Enikeev D., Sorokin N., Akopyan G., Proskura A., Ali S., Klimov R., Lekarev V., Korolev D.

Embase

Journal of Urology. Conference: American Urological Association Annual Meeting, AUA 2019. Chicago, IL United States. 201(4 Supplement 1) (pp e58), 2019. Date of Publication: April 2019. [Conference Abstract]

AN: 629387194

INTRODUCTION AND OBJECTIVES: Recently, SuperPulse Thulium (Tm) fiber laser (NPO IRE-Polus) with wavelength of 1.94 μm was introduced as a promising lithotripsy tool. In preclinical study, we have found its efficacy to be higher than the leading Ho:YAG laser for fragmentation (x1.7 times) and dusting (x2.3 to 4 times) for equal energy and repetition rate settings. In this work, we report results of the on-going clinical study aimed at comprehensive evaluation of safety and efficacy of the new laser.

METHOD(S): The SuperPulse Tm fiber laser device has been cleared for clinical use by the Ministry of Health of Russian Federation and the protocol has been approved by the institutional Ethical Review committee. We prospectively analyzed 268 patients (173 kidney, 80 ureteral, 15 bladder stones) who underwent SuperPulse Tm fiber laser lithotripsy. Stone size, its density, operative and laser on time (LOT) were measured. Based on surgeon's feedback, retropulsion and intraoperative visibility were assessed.

RESULT(S): For kidney stones, the average size was 11.4 mm (7e25 mm), for ureteral stones 7.6 mm (3e18 mm), for bladder stones 22.2 mm (9e36 mm). The average stone density for kidney stones was 987 HU (330e1960 HU), for ureteral stones 995 HU (460e1700 HU), for bladder stones 980 HU (860e1050 HU). The average time to complete renal stone fragmentation (to dust or small fragments) was 27.2 min, for ureteral stones 17.1 min, for bladder stones 19 min. LOT was 24.3; 12.7 and 14.5 min for kidney, ureter and bladder stones, respectively. The retropulsion was insignificant in all cases with energy level less than 0.5 J. Visibility was estimated as optimal by surgeons in most cases. Fragmentation mode with energy level 2 to 5J and repetition rate 5-10 Hz was most suitable for bladder stone disintegration. Overall, the settings of 0.1-0.2J/15-30W; 0.2-0.5J/10-15W and 2-5J/30-50W were identified as optimal for kidney (dusting), ureter (dusting and fragmentation), and bladder (fragmentation) stones, respectively.

CONCLUSION(S): Based on the analysis of data on 268 subjects available today, the SuperPulse Tm fiber laser is safe and efficacious for all types of urinary stones in all relevant anatomic locations.

Status

CONFERENCE ABSTRACT

Institution

(Dymov, Rapoport, Tsarichenko, Enikeev, Sorokin, Akopyan, Proskura, Ali, Klimov, Lekarev, Korolev) Moscow Russian Federation

Publisher

Lippincott Williams and Wilkins

Year of Publication

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357.

Dusting efficiency comparison between moses technology of Ho:YAG laser and superpulse thulium fiber laser.

De Coninck V., Keller E.X., Kovalenko A., Vinnichenko V., Traxer O.

Embase

Journal of Urology. Conference: American Urological Association Annual Meeting, AUA 2019. Chicago, IL United States. 201(4 Supplement 1) (pp e28-e29), 2019. Date of Publication: April 2019.

[Conference Abstract]

AN: 629386701

INTRODUCTION AND OBJECTIVES: At present, the Ho:YAG laser is the most commonly used laser for treating urolithiasis. A new technology of the Ho:YAG laser (Moses technology) was designed to increase ablation efficiency and to reduce stone retropulsion. Recently, a thulium fiber laser (TFL) has been suggested as an alternative laser source, with a potential for higher ablative efficiency and lower retropulsion. The aim of this study was to compare the efficiency of stone dusting between a Ho:YAG laser with Moses technology and a SuperPulse TFL.

METHOD(S): A SuperPulse TFL generator was compared to a Ho:YAG laser generator with Moses technology. 200 μ m fibers were used in all experiments. Laser lithotripsy was performed with a flexible ureteroscope (Pusen) for direct vision and fiber control. Uric acid stones were used in this study. Irrigation pressure was 40 cm H₂O. Lithotripsy was performed in a specially constructed vessel of 13 mm in diameter, with 2 mm holes drilled in the walls at a height of 40 mm to allow collection of stone dust from irrigation overflow (Figure 1). The laser parameters for both systems were 0.2 J and 80 Hz (16 W). Lithotripsy was performed during 2'3000. After lithotripsy, the solution from the outer cuvette was filtered through filter paper with a pore size of 2 μ m allowing stone dust collection. The weight of stone dust was calculated as the difference

between weight of the dried filter with the stone dust and the initial weight of the filter.

Experiments were repeated 5 times.

RESULT(S): Initial stone mass was 210+/-24 mg. The weight of stone dust after lithotripsy was 69+/-32 mg for Ho:YAG laser lithotripsy with Moses technology and 138+/-25 mg for the SuperPulse TFL (Figure 2).

CONCLUSION(S): The SuperPulse TFL produced twice as much stone dust as the Ho:YAG laser with Moses technology. When these promising results are confirmed in future studies, the SuperPulse TFL may be able to significantly reduce operating times.

Status

CONFERENCE ABSTRACT

Institution

(De Coninck) BrasschaatBelgium (Keller, Kovalenko, Vinnichenko) MoscowRussian Federation
(Traxer) ParisFrance

Publisher

Lippincott Williams and Wilkins

Year of Publication

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358.

Comprehensive clinical study of super pulse tm fiber laser for treatment of stone disease.

Traxer O., Dymov A., Rapoport L., Tsarichenko D., Enikeev D., Sorokin N., Akopyan G., Proskura A., Ali S., Klimov R., Lekarev V., Korolev D.

Embase

Journal of Urology. Conference: American Urological Association Annual Meeting, AUA 2019.

Chicago, IL United States. 201(4 Supplement 1) (pp e85-e86), 2019. Date of Publication: April 2019.

[Conference Abstract]

AN: 629387362

INTRODUCTION AND OBJECTIVES: Recently, SuperPulse Thulium (Tm) fiber laser (NPO IRE-Polus) with wavelength of 1.94 μm was introduced as a promising lithotripsy tool. In preclinical study, we have found its efficacy to be higher than the leading Ho:YAG laser for fragmentation ($\times 1.7$ times) and dusting ($\times 2.3$ to 4 times) for equal energy and repetition rate settings. In this work, we report results of the on-going clinical study aimed at comprehensive evaluation of safety and efficacy of the new laser.

METHOD(S): The SuperPulse Tm fiber laser device has been cleared for clinical use by the Ministry of Health of Russian Federation and the protocol has been approved by the institutional Ethical Review committee. We prospectively analyzed 268 patients (173 kidney, 80 ureteral, 15 bladder stones) who underwent SuperPulse Tm fiber laser lithotripsy. Stone size, its density, operative and laser on time (LOT) were measured. Based on surgeon's feedback, retropulsion and intraoperative visibility were assessed.

RESULT(S): For kidney stones, the average size was 11.4 mm (7e25 mm), for ureteral stones 7.6 mm (3e18 mm), for bladder stones 22.2 mm (9e36 mm). The average stone density for kidney stones was 987 HU (330e1960 HU), for ureteral stones -995 HU (460e1700 HU), for bladder stones 980 HU (860e1050 HU). The average time to complete renal stone fragmentation (to dust or small fragments) was 27.2 min, for ureteral stones 17.1 min, for bladder stones 19 min. LOT was 24.3; 12.7 and 14.5 min for kidney, ureter and bladder stones, respectively. The retropulsion was insignificant in all cases with energy level less than 0.5 J. Visibility was estimated as optimal by surgeons in most cases. Fragmentation mode with energy level 2 to 5J and repetition rate 5-10 Hz was most suitable for bladder stone disintegration. Overall, the settings of 0.1-0.2J/15-30W; 0.2-0.5J/10-15W and 2-5J/30-50W were identified as optimal for kidney (dusting), ureter (dusting and fragmentation), and bladder (fragmentation) stones, respectively. No urinary tract injuries and optic or working channel damages were observed. There were no complications graded higher than IIIa according to Clavien-Dindo classification in this cohort.

CONCLUSION(S): Based on the analysis of data on 268 subjects available today, the SuperPulse Tm fiber laser is safe and efficacious for all types of urinary stones in all relevant anatomic locations.

Status

CONFERENCE ABSTRACT

Institution

(Traxer) ParisFrance (Dymov, Rapoport, Tsarichenko, Enikeev, Sorokin, Akopyan, Proskura, Ali, Klimov, Lekarev, Korolev) MoscowRussian Federation

Publisher

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Year of Publication

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359.

Prospective transurethral lithotripsy study with SuperPulse Tm fiber laser.

Traxer O., Martov A., Ergakov D., Guseynov M.

Embase

Journal of Urology. Conference: American Urological Association Annual Meeting, AUA 2019.

Chicago, IL United States. 201(4 Supplement 1) (pp e85), 2019. Date of Publication: April 2019.

[Conference Abstract]

AN: 629387329

INTRODUCTION AND OBJECTIVES: Laser lithotripsy is widely accepted as a first-line modality for treatment of many diagnoses of urinary tract stones. The de facto gold standard laser source for lithotripsy is a Ho:YAG laser emitting at the wavelength of 2.10 μ m. Recently, a novel SuperPulse Tm fiber laser emitting at 1.94 μ m has been introduced for this purpose. In this work, we evaluated performance of the SuperPulse Tm Fiber Laser system in a prospective clinical study.

METHOD(S): SuperPulse Tm fiber laser has been cleared for clinical use by the Ministry of Health of Russian Federation. The study protocol has been approved by the institutional Ethical Review Board. SuperPulse Tm fiber laser system capable of operation with up to 40 W average power, 0.025e6 J pulse energy and 1600 Hz rep rate was used in this study. The study is on-going. Up to October 2018, total of 214 subjects (age range 19-83) have been enrolled into the study and total of 238 stones have been surgically treated with the device. Routine preoperative exam included multispiral CT (MCT) scan with the evaluation of stone density and location. Total

procedure time, laser on time, stone extraction (when applicable) time were assessed. Control exam with kidney MCT was provided 30 days after operation.

RESULT(S): Stone free-rates (no residual fragments) were 94% for kidney stones, 96% for ureter stones and 100% for bladder stones 30 days post treatment. On the dataset obtained and analyzed so far, the operation time and the laser on time varied between 4 to 38 min and 12 s to 14.4 min, respectively. No accidental damage of soft tissues was observed. The post-operative hospital stay time was 2.4 days on average. Optimal parameters in this study were found to be 0.1e0.2 J and rep rate 100e300 Hz for fine dusting and pop corning, 0.2e0.5 J and 50e150 Hz for dusting and 1e5 J and 10 to 40 Hz for fragmentation.

CONCLUSION(S): Data available so far indicate that SuperPulse Thulium fiber laser is efficacious and safe for lithotripsy. Longer-term follow ups are necessary to validate this conclusion.

Status

CONFERENCE ABSTRACT

Institution

(Traxer) ParisFrance (Martov, Ergakov, Guseynov) MoscowRussian Federation

Publisher

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360.

Super-pulse thulium fiber versus high power holmium lasers. What about temperature?.

Dragos L., Somani B.K., Keller Etienne X., De Coninck Vincent M.J., Steeve D., Cumpanas Alin A., Martis Sandra M., Wiseman Oliver J., Olivier T.

Embase

Journal of Urology. Conference: American Urological Association Annual Meeting, AUA 2019. Chicago, IL United States. 201(4 Supplement 1) (pp e150), 2019. Date of Publication: April 2019. [Conference Abstract]

AN: 629387006

INTRODUCTION AND OBJECTIVES: A novel Super-Pulse Thulium Fiber laser has recently been developed and used for urolithiasis. The initial results show a better efficacy than conventional Holmium laser lithotripsy. The goal of our in-vitro study was to compare the temperature changes between activated High Power Holmium and Super-Pulse Thulium Fiber lasers.

METHOD(S): A Super-Pulse Thulium fiber (SPTF) laser prototype with 200µm fibre and a High-Power Holmium (HPH) laser (Lumenis Pulse 120H) with 230µm fibre were used. An isothermal box was created and filled with saline (Fig. 1). The temperature of the saline was maintained constantly at 36.5°C using an automated pump which was able to control the pressure and temperature. A urinary tract silicone model was placed in the box with two temperature sensors, one placed within the saline inside the box and the other in the silicone model itself. A LithoVue single-use flexible ureteroscope was introduced through the silicone model without an UAS. Laser fibre tip was placed into a mid calix at 5 mm from the sensor. Laser was activated using different settings until the temperature reached 45°C or for maximum 10 minutes. Experiments were performed without irrigation, with saline irrigation at 40 cm H₂O pressure at 20°C and 37°C temperature respectively. All tests were repeated five times.

RESULT(S): Our results showed the use of SPTF and HPH laser both caused the temperature to reach 45°C with power greater than 16W, especially when used without irrigation. The time taken (in minutes) to reach this temperature was higher for cooler irrigant fluids. With similar energy and frequency settings using both SPTF and HPH laser, no significant differences on temperature was noted for dusting, pop-dusting, fragmenting or pop-coring when using irrigation fluid at 20°C and 37°C (Table 1). On comparison to HPH laser, when similar power but a lower energy SPTF laser was used the later took longer time to reach 45°C although this was not statistically significant (Table 2)

CONCLUSION(S): Our results show that both SPTF and HPH laser have similar temperature changes for all stone treatment settings.

Status

CONFERENCE ABSTRACT

Institution

(Dragos) GhirodaRomania (Somani) SouthamptonUnited Kingdom

(Keller Etienne, De Coninck Vincent, Steeve, Olivier) ParisFrance

(Cumpanas Alin, Martis Sandra) TimisoaraRomania

(Wiseman Oliver) CambridgeUnited Kingdom

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361.

Superpulse thulium fiber laser for lithotripsy of large renal stones: Initial experience.

Keller E.X., De Coninck V., Vinnichenko V., Chiron P., Doizi S., Guseynov M., Ergakov D., Martov A., Traxer O.

Embase

Journal of Urology. Conference: American Urological Association Annual Meeting, AUA 2019.

Chicago, IL United States. 201(4 Supplement 1) (pp e88), 2019. Date of Publication: April 2019.

[Conference Abstract]

AN: 629387645

INTRODUCTION AND OBJECTIVES: The SuperPulse Thulium fiber laser may present as a valuable alternative to Holmium laser for lithotripsy. Its operating wavelength is closer to a major water absorption peak, which results in a higher ablation efficiency at low pulse energy compared to Holmium lithotripsy. Pulsed energy can be delivered through silica fibers as small as 50 microns, which may allow for miniaturization of the endourological instruments. Also, pulse shape can easily be modulated, because the Thulium fiber laser is pumped by a diode laser, which in turn can be electronically modulated to adapt its temporal beam profile. In this video we present the applicability of Thulium fiber laser for lithotripsy of large renal stones.

METHOD(S): Three cases were operated by flexible uretero-scopy for large renal stones with a SuperPulse Thulium fiber laser generator at the Federal Medical-Biological Agency of Russian Federation State Institute of Continuous Medical Education, Division of Urology, Moscow, Russia. The whole procedures were recorded and key findings were reported in this video footage.

RESULT(S): The first case was a 55 years old female who presented with stones up to 12 mm in the left kidney. Low pulse energy settings (0.1 J, 250 Hz) achieved effective stone dusting. Stone dusting was complete thirty minutes after first laser activation. Pop-corning was used for clearance of residual fragments. This could be achieved without any change of laser settings. Ten minutes of pop-corning were sufficient for complete stone disintegration. The second case was a 56 years old female who presented with a single stone of 15 mm in the left renal pelvis. It took a total of 24 minutes of operative time complete lithotripsy with breakdown products adhering to the snow globe effect, which is characteristic of stone dust. The third case was a 64 years old male who presented with a single stone of 30 mm in the left renal pelvis. It took 23 minutes for stone dusting and 14 minutes for pop-corning, resulting in a total operative time of 37 minutes for complete lithotripsy.

CONCLUSION(S): From this initial experience, we conclude that the SuperPulse Thulium fiber laser is applicable for lithotripsy of large renal stones in humans. At low pulse energy, it achieves effective stone dusting. Future studies are warranted to define optimal lithotripsy settings and further detail safety profile of the SuperPulse Thulium fiber laser.

Status

CONFERENCE ABSTRACT

Institution

(Keller) ZurichSwitzerland (De Coninck) BrasschaatBelgium

(Vinnichenko, Guseynov, Ergakov, Martov) MoscowRussian Federation

(Chiron, Doizi, Traxer) ParisFrance

Publisher

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Ex-vivo ureteroscopy treatment of deceased donor kidney calculi on perfusion machine.

Chelly S., Panayotopoulos P., Bigot P., Culty T.

Embase

Journal of Urology. Conference: American Urological Association Annual Meeting, AUA 2019. Chicago, IL United States. 201(4 Supplement 1) (pp e87), 2019. Date of Publication: April 2019. [Conference Abstract]

AN: 629387556

INTRODUCTION AND OBJECTIVES: The incidence of renal lithiasis found in brain-dead donors and by cardiac-arrest is rare. Management of urolithiasis on these donors is not codified. Should they be treated before or after transplantation? A few teams proposed ex-vivo rigid or flexible ureteroscopy treatment before transplantation. This video is focused on two cases of kidney stones treatment by flexible ureteroscopy performed on a perfusion machine. We have developed an ex-vivo flexible ureteroscopy technique on the graft that has been put on an hypothermic perfusion machine.

METHOD(S): Two patients received a transplant. According to French kidney transplantation guidelines, the grafts were placed on an infusion machine and maintained at a temperature of 4 degrees Celsius. Both kidneys had lithiasis discovered on pre-organ procurement imaging. An ex-vivo flexible ureteroscopy was performed on transplant held on Lifeport* perfusion machine.

RESULT(S): A 4mm stone localized in the upper calicel of the first kidney was treated by laser fragmentation and then basket extraction. A 7mm stone was observed on the CT-scan, which turned out to be a cluster of micro-lithiasis. Largest fragments were recovered with a extraction basket. The rest was fragmented into dust. The cold ischemia time was 31h30 and 10h49.

Concerning the first patient, after 28-monthes follow-up, there was neither lithiasis recurrence, nor urological complication. The second patient developed a type-B lymphoma, for which a transplantectomy was performed at 8 months. Nadirs of creatinine levels were 90 $\mu\text{mol/L}$ and 154 $\mu\text{mol/L}$ respectively. No lithiasic events occur during monitoring of the contralateral kidneys and their creatinine nadirs were 177 $\mu\text{mol/L}$ and 101 $\mu\text{mol/L}$ respectively.

CONCLUSION(S): When the procedure is feasible and does not prolong cold-ischemia time, ex-vivo flexible ureterorenoscopy on machine-perfused kidneys appears to be a good alternative to treat graft lithiasis.

Status

CONFERENCE ABSTRACT

Institution

(Chelly, Panayotopoulos, Bigot, Culty) AngersFrance

Publisher

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363.

Forgotten DJ stent for 10 years.

Yilmaz M., Celik M., Odabas O.

Embase

European Urology, Supplements. Conference: EAU 19th Central European Meeting. Vienna Austria. 18(2) (pp e2483-e2484), 2019. Date of Publication: 2019.

[Conference Abstract]

AN: 2002860491

Introduction & Objectives: Ureteral stent is the frequently used devices in urological operations. If the time of removal of ureteral stents increases, the severity of the complications caused by the stent increases. These complications are occlusion, encrustation, breakage, stone formation, urosepsis, renal failure and even death. Herein, we report the approach of our clinic to a patient with a 10-year indwelling ureteral stent.

Material(s) and Method(s): A 60-year-old male patient was admitted to our urology outpatient department with dysuria. It was learnt, he had undergone bilateral ureteral DJ stent for bilateral ureteral calculi at another hospital 10 years ago. In direct urinary system graphy, a broken proximal and distal part of right DJ was seen (Figure1b). CT revealed retained bilateral ureteral stents with associated heavy encrustations around them (Figure1a). Firstly, we had performed ureterorenoscopy for removing of impacted ureteral stents. To mobilization of encrusted stent, we have used pneumatic lithotripsy (Figure1c-d), broken distal part and middle part of right DJ were extracted with forceps (Figure1f). A new DJ stent replaced to right side (Figure1e). Then patient underwent left PCNL for encrusted proximal part of left side (Figure1g). In another session, patient underwent right PCNL (Figure1h). The patient was discharged after fourth days of operation.

[Figure Presented] Results: Encrustation is the most common complication of indwelling DJ stents. The mechanism is obscure. DJ fragmentation occurs in 0.3% to 10% of patients. Loss of renal function, pyonephrotic kidney causing nephrectomy have been declared. To evaluate encrustation, stone formation burden on the stents; non contrast CT can be used. There are some approach ways such as shockwave lithotripsy, ureteroscopy with or without laser, basket extraction, percutaneous nephrolithotomy, open, laparoscopic surgery.

Conclusion(s): To avoid complications, DJ stents should be registered in the hospital system properly and patients should be informed.

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Status

CONFERENCE ABSTRACT

Institution

(Yilmaz, Celik, Odabas) Health Science University Turkey Yuksek Ihtisas Research and Training Hospital, Dept. of Urology, Ankara, Turkey

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364.

Blue spritz technique-a simple way to identify the elusive calyceal diverticulum ostium.

Low W.X.A.

Embase

BJU International. Conference: Best Practices and Emerging Trends in Urology, UROFAIR 2019. Singapore Singapore. 123(Supplement 4) (pp 50), 2019. Date of Publication: April 2019.

[Conference Abstract]

AN: 627695734

Introduction and Objectives: Calyceal diverticuli are hypothesised to be congenital outpouchings of the renal parenchyma lined with non-secretory urothelium; acquired diverticuli have been proposed to be the sequelae of calyceal obstruction secondary to calculi or a localised cortical abscess draining into a calyx. Urinary stasis within the diverticuli promotes stone formation resulting in renal colic or recurrent infections. When indicated, the treatment of calyceal calculi can be challenging when getting endoscopic access to the stone-bearing calyceal diverticuli, especially if the ostium/neck of the diverticuli is narrowed.

Method(s): In this video, we showcase the endoscopic treatment of a 53-year-old male patient who presented with recurring left flank ache. The KUB Xray showed a cluster of calculi in the upper pole of the left kidney. An intravenous urogram was subsequently performed which demonstrated a dilated left upper pole calx with multiple small clustered calculi. After thorough discussion regarding ureteroscopic and percutaneous approaches, he elected to proceed with the ureteroscopic approach. In the first procedure, it was noted that the distal ureter was tight, hence decision was made to proceed with staged pre-stenting. Subsequently, in the second procedure, there was difficulty identifying the ostium of the stone-bearing calyx. The ostium became apparent only after utilising the "blue spritz" technique - methylene blue was instilled into the collecting system via the flexible ureteroscope and then suctioned out; normal saline irrigation fluid was then introduced into the collecting system, with the residual blue dye seen escaping from the ostium of the stone-bearing calyx. A guidewire was then inserted into the calyx with subsequent laser infundibulotomy. The cluster of multiple calyceal calculi was visualised and extracted with a zero-tip basket.

Result(s): A total of 105 small calculi were extracted from the calyceal diverticulum, each measuring about 1-3 mm in size. The patient was rendered stone-free at the end of the procedure with the placement of a ureteral stent. At 1 week post-procedure, he was reviewed in the clinic; KUB X-ray showed no residual calculi and the ureteral stent was removed successfully.

Conclusion(s): The "blue spritz" technique is an effective way to identify the elusive ostium of the renal calyceal diverticulum, saving the patient the need for percutaneous nephrostomy access.

Status

CONFERENCE ABSTRACT

Institution

(Low) Singapore General Hospital

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365.

Bigger is better when it comes to holmium:YAG laser lithotripsy.

Heywood S., Douglas S., Bruce A., McCredie S., Gilbourd D.

Embase

BJU International. Conference: 2019 Annual Scientific Meeting of the Urological Society of Australia and New Zealand. Brisbane, QLD Australia. 123(Supplement 2) (pp 55-56), 2019. Date of Publication: April 2019.

[Conference Abstract]

AN: 627464924

Introduction and Objectives: Holmium: YAG laser lithotripsy is the cornerstone of the management of urolithiasis. Newer (Figure presented) laser machines offer higher power as well as more adjustability in frequency, power, and pulse duration. Despite this it is unclear if these factors translate into clinical benefits. The aim of this study was to compare the performance of a new 60W holmium: YAG laser with an older holmium:YAG 30W laser. The primary outcome was the rate of relook ureteropyeloscopy (RLU). The secondary outcome was operative time.

Method(s): A retrospective cohort study was performed. All consecutive patients presenting for their index retrograde intrarenal surgery and laser lithotripsy between February 2016 and January 2017, and February 2018 to October 2018 were included. Patients with a stone burden > 30 mm, encrusted stent, cystine stones, or undergoing a concurrent procedure were excluded. Data on patient demographics, stone size, location, burden, and composition, management techniques used including the laser machine, length of stay, length of surgery, and need for RLU were collected. Variables important in the management of urolithiasis were compared between the two laser groups.

Result(s): A total of 153 patients underwent management during the study period, 13 patients were excluded. 92 patients underwent treatment with 30W laser and 48 with the 60W laser. There was no difference between the two groups when comparing age, gender, primary

ureteropyeloscopy rate, location of calculi, number of calculi, stone burden, stent indwelling time, stone composition, rate of registrar performed procedures, type of ureteroscope used, use of an access sheath, use of a basket device, fibre size, or operative time. When comparing the 30W group to the 60W group there were differences in the rate of stones sent for analysis (71.7% vs 55.1%, $p = 0.047$), rate of dusting technique (40% vs 57.1%, $p = 0.055$), and rate of RLU (18.7% vs 4.1%, $p = 0.005$). When using the 60W laser the absolute risk reduction for RLU was 0.14, giving a number needed to treat of 7.

Conclusion(s): In the management of urolithiasis with retrograde intrarenal surgery, a newer and higher powered holmium: YAG laser machine leads to a reduction in the number patients who require relook ureteropyeloscopy. This provides support for investment in new holmium:YAG laser machines by health care services.

Status

CONFERENCE ABSTRACT

Institution

(Heywood, Douglas, Bruce, McCredie, Gilbourd) Calvary Public Hospital, Bruce, Australia

(Heywood, McCredie, Gilbourd) Canberra Hospital, Garran, Australia

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366.

Urosepsis and fever after laser lithotripsy procedures in a single Australian institution.

Lockhart K., McIlwain E., David G., Raman A.

Embase

BJU International. Conference: 2019 Annual Scientific Meeting of the Urological Society of Australia and New Zealand. Brisbane, QLD Australia. 123(Supplement 2) (pp 31-32), 2019. Date of Publication: April 2019.

[Conference Abstract]

AN: 627464897

Introduction and Objectives: Urolithiasis is common in Australia (estimated lifetime prevalence of 15% in men and 8% in women), and is most commonly managed with ureteropyeloscopy and laser lithotripsy. The objective of this retrospective analysis is to identify predictive and modifiable risk factors associated with fever and urosepsis in the post-operative period of laser lithotripsy procedures in Australia.

Method(s): Records from 284 consecutive patients over 18 years old undergoing laser lithotripsy at Royal Newcastle Centre/John Hunter Hospital between the period of January 2013 and December 2017 were retrospectively reviewed. Patient demographics, comorbidities, urine cultures, anaesthetic and operative data were compared between those who developed infectious complications (defined as fever ≥ 38 or sepsis from a urinary source within 30 days post-operatively) and those who did not.

Result(s): A total of 372 cases of holmium: YAG laser lithotripsy were included for analysis. (Table presented) 10.2% ($n = 38$) of patients developed post-operative infectious complications; 81.6% of these occurred within 24 h and the remainder between post-operative day 2-14. Three cases required ICU admission. The proportion of female cases developing infectious complications was higher (16.7% of all female cases, compared to 7.1% of male cases). Current smokers were more likely to suffer from infectious complications postlaser lithotripsy (42.1% of uroseptic cases, compared to 19.8% in cases without ($p = 0.0017$)). 23.7% of cases with infectious complications had an operative time ≥ 120 mins, compared to 13.0% ($p = 0.0731$), with a mean of 87.0 min compared to 83.0 min ($p = 0.4644$). When comparing pre-operative urine cultures of the cases complicated by urosepsis to those who weren't, 39.4% grew an organism (compared to 20.6%) ($p = 0.0148$), 30.3% had mixed growth (compared to 7.9%) ($p = 0.0001$) and 30.3% had no growth (compared to 71.5%) ($p < 0.0001$). Incomplete stone clearance was also a significant risk factor, found in 31.6% of uroseptic cases, compared to 12.3% ($p = 0.0013$). There was no significant difference in proportion of age ≥ 65 years, obesity, diabetes or other immunosuppressive comorbidities, ASA, stone size ≥ 10 mm, intra-operative use of basket retrieval or pre-operative stent dwelling time.

Conclusion(s): Infectious complications post laser lithotripsy remain a common complication in the Australian setting despite high rates of appropriate antibiotic prophylaxis. Pre-operative urine culture, current smoking status and incomplete stone clearance were identified as statistically significant risk factors in this cohort. We propose that high risk patients should be monitored

closely in the immediate post-operative period with a low threshold for continuing antibiotics, and every opportunity taken for smoking cessation counselling prior to lithotripsy procedures.

Status

CONFERENCE ABSTRACT

Institution

(Lockhart, McIlwain, David, Raman) Hunter New England Health, New Lambton Heights,
Australia

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367.

Awareness reduces radiation exposure during flexible ureteroscopy - a prospective multicenter evaluation.

Hein S., Wilhelm K., Miernik A., Salem J., Karapanos L., Netsch C., Becker B., Secker A., Veser J., Neisius A., Fritsche H.-M., Schnabel M.J.

Embase

European Urology, Supplements. Conference: EAU19: 34th Annual EAU Congress. Barcelona Spain. 18(1) (pp e35-e36), 2019. Date of Publication: March 2019.

[Conference Abstract]

AN: 2001680862

Introduction & Objectives: Retrograde intrarenal surgery (RIRS) can necessitate extensive X-ray usage. We evaluated the impact of a preoperative surgeon briefing regarding inclusion and evaluation of fluoroscopy time (FT) and radiation dose (RD) into a multicenter study on the applied

X-ray usage. We postulate that an increased awareness of the RIRS performing endourologist leads to a significant decrease of applied radiation.

Material(s) and Method(s): A multicenter study with 6 centers (Regensburg/GER, Hamburg/GER, Cologne/GER, Vienna/AUT, Munster/GER & Freiburg/GER) was performed. Each center was obliged to recruit 25 prospective patients which were scheduled for RIRS for renal stones of any size requiring laser lithotripsy. Prior study start all surgeons were briefed by the local investigator about hazards of radiation and how to avoid high doses in endourologic surgery, as well as FT and RD will be assessed according to study protocol. This prospective study arm was compared to past RIRS procedures in each study center, prior surgeon's X-ray training. The study was approved by the leading ethic committee: University of Regensburg, GER, IRB No16-101-0064.

FT was defined as primary outcome parameter. To examine the procedures outcome and safety, endoscopic stone-free rate (SFR) and complications were evaluated according to Clavien-Dindo, SATAVA and postretroscopic lesion scale (PULS), respectively. Results were analyzed using T-test, chi-square test, univariate analysis and confirmed in a multivariate regression model.

Result(s): Overall, 303 patients were included (145 retro- & 158 prospective patients). Regarding potentially FT influencing parameters (e.g. stone burden, lower pole stones, prestenring, poststenring) the two study arms were balanced. Overall, mean FT and RD (no unit available due to different units of the study centers) were reduced from 130.8s/565.8 down to 77.4s/357.8 ($p<0.05$). SFR was improved from 85.5% to 93% in the prospective study arm ($p<0.05$).

Complications were not different according to Clavien ($p=0.081$), PULS ($p=0.65$) and SATAVA ($p=0.33$). In univariate variance analysis neither stone position ($p=0.57$), prestenring ($p=0.42$), surgeons' experience (>100 RIRS), nor PULS ($p=0.055$) had significant impact on FT. Significant univariate parameters were confirmed in a multivariate model, revealing X-ray training to be radiation-protective (OR 44, $p=0.001$), while an increased FT was confirmed for postprocedural JJ (OR 68, $p=0.028$), laser setting dusting vs. fragmenting (OR 92, $p<0.001$), UAS usage (OR 59, $p<0.001$) and to SATAVA classification (OR 26, $p=0.02$).

Conclusion(s): Increased surgeon awareness regarding X-ray has a significant impact on FT and RD. This "awareness effect" is a simple way to reduce RD for the patient and OR-staff while procedures outcome and safety are not affected. This study is the result of GeSRU Academics, a network of residents within the German Society of Residents in Urology.

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Status

CONFERENCE ABSTRACT

Institution

(Hein, Wilhelm, Miernik) Medical Center, University of Freiburg, Dept. of Urology, Division of Urotechnology, Freiburg, Germany (Salem, Karapanos) University Hospital Cologne, Dept. of Urology, Cologne, Germany

(Netsch, Becker) Asklepios Hospital Barmbek, Dept. of Urology, Hamburg, Germany

(Secker) Westfälische Wilhelms-Universität, Dept. of Urology, Münster, Germany

(Veser) Medical University, General Hospital Vienna, Dept. of Urology, Vienna, Austria

(Neisius) Barmherzige Brüder Hospital Trier, Dept. of Urology, Trier, Germany

(Fritsche) Surgical Clinic Munich-Bogenhausen, Dept. of Urology, Munich, Germany

(Schnabel) University of Regensburg, Caritas St. Josef Medical Centre, Dept. of Urology, Regensburg, Germany

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368.

Prospective transurethral lithotripsy study with SuperPulse™ fiber laser.

Traxer O., Martov A.G., Ergakov D.V., Guseynov M.

Embase

European Urology, Supplements. Conference: EAU19: 34th Annual EAU Congress. Barcelona Spain. 18(1) (pp e2222), 2019. Date of Publication: March 2019.

[Conference Abstract]

AN: 2001680576

Introduction & Objectives: Laser lithotripsy is widely accepted as a first-line modality for treatment of many diagnoses of urinary tract stones. The de facto gold standard laser source for lithotripsy is a Ho:YAG laser emitting at the wavelength of 2.10 µm. Recently, a novel SuperPulse™ fiber

laser emitting at 1.94 μm has been introduced for this purpose. In this work, we evaluated performance of the SuperPulse™ Fiber Laser system in a prospective clinical study.

Material(s) and Method(s): SuperPulse™ fiber laser has been cleared for clinical use by the Ministry of Health of Russian Federation. The study protocol has been approved by the institutional Ethical Review Board. SuperPulse™ fiber laser system capable of operation with up to 40 W average power, 0.025 - 6 J pulse energy and 1600 Hz rep rate was used in this study. The study is on-going. Up to October 2018, total of 214 subjects (age range 19-83) have been enrolled into the study and total of 238 stones have been surgically treated with the device. Routine preoperative exam included multispiral CT (MCT) scan with the evaluation of stone density and location. Total procedure time, laser on time, stone extraction (when applicable) time were assessed. Control exam with kidney MCT was provided 30 days after operation.

Result(s): Stone free-rates (no residual fragments) were 94% for kidney stones, 96% for ureter stones and 100% for bladder stones 30 days post treatment. On the dataset obtained and analyzed so far, the operation time and the laser on time varied between 4 to 38 min and 12 s to 14.4 min, respectively. No accidental damage of soft tissues was observed. The post-operative hospital stay time was 2.4 days on average. Optimal parameters in this study were found to be 0.1 - 0.2 J and rep rate 100 - 300 Hz for fine dusting and pop corning, 0.2 - 0.5 J and 50 - 150 Hz for dusting and 1 - 5 J and 10 to 40 Hz for fragmentation.

Conclusion(s): Data available so far indicate that SuperPulse Thulium fiber laser is efficacious and safe for lithotripsy. Longer-term follow ups are necessary to validate this conclusion.

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Status

CONFERENCE ABSTRACT

Institution

(Traxer) Hospital Tenon, Dept. of Urology, Paris, France (Martov, Ergakov, Guseynov) Federal Medical-Biological Agency of Russian Federation, State Institute of Continuous Medical Education, Dept. of Urology, Moscow, Russian Federation

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369.

In vitro and in vivo new evidence for flexor vue deflecting endoscopic system use: Optimization of the stone free rate (SFR)after RIRS.

Saita A.R., Villa L., Paciotti M., Fasulo V., Casale P., Lughezzani G., Buffi N.M., Hurle R., Domanico L., Bevilacqua G., Peschechera R., Lazzeri M., Guazzoni G.

Embase

European Urology, Supplements. Conference: EAU19: 34th Annual EAU Congress. Barcelona Spain. 18(1) (pp e2012), 2019. Date of Publication: March 2019.

[Conference Abstract]

AN: 2001680530

Introduction & Objectives: Stone extraction devices have become a routine tool after RIRS. Basketing increases the surgical duration and can lead to serious complications such as perforation and avulsion of the ureter wall. In this video we present in vitro experiment for a new conception of Flexor Vue™ Deflecting Endoscopic System (FVDES)use and its in vivo application/implementation. The aim of our study is to create and test a new system that is able to routinely, effectively clear the fragments remaining after RIRS.

Material(s) and Method(s): FVDES includes a disposable sheath and a visualization source, originally designed as a flexible endoscope. We placed an irrigator within optical channel so to have the flexor carry out a new function. We created an in vitro study that modelled the lithic fragments remaining post-RIRS. The device was implemented in vivo on 11 consecutive patients treated for primary or recurrent renal stones of medium size (1,5-2,5 cm). All the procedures were performed using a 200 mum holmium fiber using a flexible ureterorenoscope (Olympus URF-V2)and standard UAS. The FVDES was positioned at the end of procedure in order to improve SFR. The outcomes of interest are feasibility, safety and efficacy. Feasibility was defined as the capacity of positioning and favouring fragment removal according to the Bernulli's principle by the Flexor device. Safety was defined by complication analysis. Efficacy outcomes measured operative time, SFR, hospital stay, re-treatment and rehospitalization. SFR was defined as fragments less than 4 mm assessed by ultrasound and CT.

Result(s): The experimental in vitro model showed the efficacy of the device, allowing the removal of about 90% of fragments. In vivo, 11 patients (M/F ratio: 7/4, mean age 63.5 +/- 8.3)were

treated. The stones were located in the lower calyces, and the renal pelvis in 3 and 8 patients, respectively. Medium stone size was 1.8 mm +/- 3.2. The procedure with FVDES was feasible in all the patients. Eight patients underwent preoperative ureteral stent. Mean operative time was 82 min +/- 13.7 and median hospital stay was of 1.5 day. The SFR after 30 days was 81% (9/11). Post-operatively we had no significant bleeding. 1 patient had fever and required antibiotic treatment for 5 days. No cost/effectiveness study was performed.

Conclusion(s): Our in vitro results confirmed the rationale for new conception of FVDES use. In vivo results showed it to be feasible, safe and effective for patients with medium size (1.5 to 2.5 cm)renal stones. The technique we described could allow to avoid the basketing whilst increasing the SFR after RIRS. The removal of the residual stones could lead to a reduction of the risk of disease reoccurrence and also lower the chances of patients requiring re-treatments. The positive impact may extend to include a reduction in the costs of the procedure.

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Status

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Institution

(Saita, Paciotti, Fasulo, Casale, Lughezzani, Buffi, Hurle, Domanico, Bevilacqua, Peschechera, Lazzeri, Guazzoni) Humanitas Clinical and Research Center, Dept. of Urology, Rozzano, Italy (Villa) San Raffaele Hospital, Dept. of Urology, Rozzano, Italy

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370.

Perioperative outcomes of flexible ureterorenoscopy for urolithiasis using the sheathless technique: A comparative study.

Pradere B., Peyronnet B., Khene Z.E., Freton L., Alimi Q., Mathieu R., Manunta A., Bensalah K.
Embase

European Urology, Supplements. Conference: EAU19: 34th Annual EAU Congress. Barcelona Spain. 18(1) (pp e2024-e2025), 2019. Date of Publication: March 2019.

[Conference Abstract]

AN: 2001680380

Introduction & Objectives: Treatment of renal stones by flexible ureterorenoscopy using a ureteral access sheath (UAS) is recommended by many surgeons. Nevertheless, a sheathless technique (SLT) has been developed especially to prevent ureteral trauma. Our objective was to assess the SLT compared to the access sheath technique (AST).

Material(s) and Method(s): All the patients operated for renal stones by flexible ureteroscopy (fURS) were included in a university center. All the preoperative patients and stones characteristics were collected. Operative outcomes of fURS using the SLT were compared to fURS using the AST. We assessed the operative time, the need of a basket, residual fragments rate at the end of the procedure, stone free rate at 3 months and the re intervention rate.

Comparison between groups were performed using Chi2 test and Fisher exact test for discrete variables and Mann-Whitney test for continuous variables.

Result(s): We included 400 patients in the study. Stones size was similar between AST and SLT groups (17.4 vs. 16.4; $p=0.43$) (Table 1). Operative time was shorter in the AST group ($p=0.0001$) with a higher use of basket (80% vs. 64%; $p<0.001$). Residual fragments rate at the end of surgery was similar in both groups. More patients required a double J at the end of the procedure in the AST group (84% vs. 70%; $p=0.001$). Complications rate, stone-free rate and reintervention were similar between groups (Table 1). [Table Presented][Table Presented]

Conclusions: The sheathless technique does not impact stone-free rate and re intervention rate. Nevertheless, operative time is significantly longer. The sheathless technique is a good alternative to reduce the procedures cost (less basket and postoperative drainage used) without impacting operative outcomes and prevent ureteral trauma.

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Status

CONFERENCE ABSTRACT

Institution

(Pradere) CHRU Tours, Dept. of Urology, Tours, France (Peyronnet, Khene, Freton, Alimi, Mathieu, Manunta, Bensalah) CHU Rennes, Dept. of Urology, Rennes, France

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371.

What is the exact definition of stone dust? An in vitro evaluation.

Keller E.X., De Coninck V., Doizi S., Daudon M., Traxer O.

Embase

European Urology, Supplements. Conference: EAU19: 34th Annual EAU Congress. Barcelona Spain. 18(1) (pp e484), 2019. Date of Publication: March 2019.

[Conference Abstract]

AN: 2001680374

Introduction & Objectives: An exact definition of stone dust after laser lithotripsy is still lacking, although a growing enthusiasm for dusting techniques has emerged over the last years. We herein propose a definition of stone dust relating to the size of stone breakdown products.

Material(s) and Method(s): Stone dust was defined as particles small enough to adhere to the following criteria: 1. Spontaneous floating under irrigation through a flexible ureteroscope (40 cmH₂O irrigation pressure); 2. Mean sedimentation time of >2 seconds through 10 cm saline solution; 3. Can be fully aspirated through the working channel of a flexible ureteroscope. Stone samples with a given size range (≤ 2 mm, ≤ 1 mm, ≤ 500 μ m, ≤ 250 μ m, ≤ 125 μ m and ≤ 63 μ m) were obtained after sieving stone breakdown products. All experiments were conducted in vitro and each experiment was repeated 5 times for each of the following stone types: calcium oxalate monohydrate, calcium oxalate dihydrate, uric acid, carbapatite, struvite, brushite and cystine.

Result(s): Spontaneous floating of stone dust was observed for particles ≤ 250 μ m for all stone composition types, except for struvite where floating of dust was only achieved by particles

≤ 125 microm. A size limit of ≤ 250 microm was found for mean sedimentation time of >2 seconds through 10 cm saline solution for all stone composition types, except for calcium oxalate monohydrate and cystine stones where this size limit was ≤ 500 microm. All particles ≤ 500 μm could be fully aspirated through a flexible ureteroscope, except for brushite where the size limit was ≤ 250 μm for full aspiration.

Conclusion(s): A critical size limit of ≤ 250 μm seems to generally adhere to our definition of stone dust, which is based on floating and sedimentation properties of stone dust particles as well as on the ability to be fully aspirated through the working channel of a flexible ureteroscope.

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Status

CONFERENCE ABSTRACT

Institution

(Keller) University Hospital Zurich, University of Zurich, Dept. of Urology, Zurich, Switzerland

(De Coninck) AZ Klina, Dept. of Urology, Brasschaat, Belgium

(Doizi, Traxer) Sorbonne Universite, Hopital Tenon, Dept. of Urology, Paris, France

(Daudon) Sorbonne Universite, Hopital Tenon, CRISTAL Laboratory, Paris, France

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372.

Comprehensive clinical study of SuperPulse™ fiber laser for treatment of stone disease.

Traxer O., Dymov A.M., Rapoport L.M., Enikeev D.V., Tsarichenko D.G., Sorokin N.I., Proskura A.V., Akopyan G.N., Ali S.K.H., Lekarev V.Y., Klimov R.E., Korolev D.O.

Embase

European Urology, Supplements. Conference: EAU19: 34th Annual EAU Congress. Barcelona Spain. 18(1) (pp e2221), 2019. Date of Publication: March 2019.

[Conference Abstract]

AN: 2001680339

Introduction & Objectives: Recently, SuperPulse Thulium (Tm) fiber laser (NPO IRE-Polus) with wavelength of 1.94 μm was introduced as a promising lithotripsy tool. In preclinical study, we have found its efficacy to be higher than the leading Ho:YAG laser for fragmentation (x1.7 times) and dusting (x2.3 to 4 times) for equal energy and repetition rate settings. In this work, we report results of the on-going clinical study aimed at comprehensive evaluation of safety and efficacy of the new laser.

Material(s) and Method(s): The SuperPulse Tm fiber laser device has been cleared for clinical use by the Ministry of Health of Russian Federation and the protocol has been approved by the institutional Ethical Review committee. We prospectively analyzed 268 patients (173 - kidney, 80 - ureteral, 15 - bladder stones) who underwent SuperPulse Tm fiber laser lithotripsy. Stone size, its density, operative and "laser on" time (LOT) were measured. Based on surgeon's feedback, retropulsion and intraoperative visibility were assessed.

Result(s): For kidney stones, the average size was 11.4 mm (7 - 25 mm), for ureteral stones - 7.6 mm (3 - 18 mm), for bladder stones - 22.2 mm (9 - 36 mm). The average stone density for kidney stones was 987 HU (330 - 1960 HU), for ureteral stones - 995 HU (460 - 1700 HU), for bladder stones - 980 HU (860 - 1050 HU). The average time to complete renal stone fragmentation (to dust or small fragments) was 27.2 min, for ureteral stones - 17.1 min, for bladder stones - 19 min. LOT was 24.3; 12.7 and 14.5 min for kidney, ureter and bladder stones, respectively. The retropulsion was insignificant in all cases with energy level less than 0.5 J. Visibility was estimated as optimal by surgeons in most cases. Fragmentation mode with energy level 2 to 5 J and repetition rate 5-10 Hz was most suitable for bladder stone disintegration. Overall, the settings of 0.1-0.2 J/15-30 W; 0.2-0.5 J/10-15 W and 2-5 J/30-50 W were identified as optimal for kidney (dusting), ureter (dusting and fragmentation), and bladder (fragmentation) stones, respectively. No urinary tract injuries and optic or working channel damages were observed. There were no complications graded higher than IIIa according to Clavien-Dindo classification in this cohort.

Conclusion(s): Based on the analysis of data on 268 subjects available today, the SuperPulse Tm fiber laser is safe and efficacious for all types of urinary stones in all relevant anatomic locations.

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Status

CONFERENCE ABSTRACT

Institution

(Traxer) Tenon Hospital, Dept. of Urology, Paris, France (Dymov, Rapoport, Enikeev, Tsarichenko, Sorokin, Proskura, Akopyan, Ali, Lekarev, Klimov, Korolev) Sechenov University, Institute for Urology and Reproductive Health, Moscow, Russian Federation

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373.

The management of urinary stones in pediatrics: Overcoming traditional challenges with Moses technology.

Tasian G.

Embase

European Urology, Supplements. Conference: EAU19: 34th Annual EAU Congress. Barcelona Spain. 18(1) (pp e2225), 2019. Date of Publication: March 2019.

[Conference Abstract]

AN: 2001680332

Introduction & Objectives: Lithotripsy using a holmium laser is the gold standard for endourological procedures to surgically remove stones. However, retropulsion of stone fragments is frequently seen during laser lithotripsy, especially when using high energies for ureteral stones. Additional challenges and special considerations are found when treating children; including the need for shorten procedures and reduced morbidity due to stenting. The recently introduced Lumenis 120 watt laser with Moses technology has been shown to improve lithotripsy efficiency and reduce stone retropulsion in in vitro studies and among adult patients, but has not been

evaluated in pediatric patients. We evaluated Moses technology in children and adolescents with kidney and ureteral stones.

Material(s) and Method(s): We prospectively evaluated the Lumenis 120W laser with Moses technology in 8 patients undergoing ureteroscopy at The Children's Hospital of Philadelphia. The mean age of these patients was 17 years. Four patients (50%) had stones in the kidney and 4 had both kidney and ureteral stones. The mean sizes of stones was 14mm. The Lumenis Moses 120H laser with a 200 micron fiber was used in all cases. Dusting settings (pulse energy of 0.2-0.3 J and frequency of 30-80Hz) with the Moses contact mode was used in all patients. For those stones that did not dust well, fragmentation settings (pulse energy of 0.6 to 1J and frequency of 15Hz) were used. Fragmentation was performed using contact mode and the "popcorning" technique with the Moses distance mode. Pre-stents and ureteral access sheaths were not routinely used.

Result(s): Stone retropulsion was absent to minimal in 88% of patients. No patients required pre-stenting or staged ureteroscopy. All stones were successfully removed using Moses technology with dusting and/or fragmentation settings.

Conclusion(s): This is the first report demonstrating the usage of Moses technology for pediatric patients. Retrograde intrarenal surgery using a high-power holmium laser with Moses technology for children and adolescents with urinary tract stones demonstrated potential advantages to traditional Holmium laser lithotripsy that should be evaluated in comparative studies.

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Status

CONFERENCE ABSTRACT

Institution

(Tasian) The Children's Hospital of Philadelphia, Dept. of Urology, Philadelphia, United States

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374.

Prospective clinical study on superpulse thulium fiber laser: Initial analysis of optimal laser settings.

Dymov A.M., Rapoport L., Enikeev D., Tsarichenko D., Sorokin N., Proskura A., Akopyan G., Ali S., Klimov R., Lekarev V., Korolev D.

Embase

European Urology, Supplements. Conference: EAU19: 34th Annual EAU Congress. Barcelona Spain. 18(1) (pp e500), 2019. Date of Publication: March 2019.

[Conference Abstract]

AN: 2001680293

Introduction & Objectives: Recently, SuperPulse Thulium (Tm) fiber laser (NPO IRE-Polus) with wavelength of 1.94 μm was introduced as a promising lithotripsy tool. In preclinical study, we have found its efficacy to be higher than the leading Ho:YAG laser for fragmentation (x1.7 times) and dusting (x2.3 to 4 times) for equal energy and repetition rate settings. In this work, we report results of the on-going clinical study aimed at comprehensive evaluation of safety and efficacy of the new laser.

Material(s) and Method(s): The SuperPulse Tm fiber laser device has been cleared for clinical use by the Ministry of Health of Russian Federation and the protocol has been approved by the institutional Ethical Review committee. We prospectively analyzed 268 patients (173 - kidney, 80 - ureteral, 15 - bladder stones) who underwent SuperPulse Tm fiber laser lithotripsy. Stone size, its density, operative and "laser on" time (LOT) were measured. Based on surgeon's feedback, retropulsion and intraoperative visibility were assessed.

Result(s): For kidney stones, the average size was 11.4 mm (7 - 25 mm), for ureteral stones - 7.6 mm (3 - 18 mm), for bladder stones - 22.2 mm (9 - 36 mm). The average stone density for kidney stones was 987 HU (330 - 1960 HU), for ureteral stones - 995 HU (460 - 1700 HU), for bladder stones - 980 HU (860 - 1050 HU). The average time to complete renal stone fragmentation (to dust or small fragments) was 27.2 min, for ureteral stones - 17.1 min, for bladder stones - 19 min. LOT was 24.3; 12.7 and 14.5 min for kidney, ureter and bladder stones, respectively. The retropulsion was insignificant in all cases with energy level less than 0.5 J. Visibility was estimated as optimal by surgeons in most cases. Fragmentation mode with energy level 2 to 5 J and repetition rate 5-10 Hz was most suitable for bladder stone disintegration. Overall, the settings of 0.1-0.2 J/15-30 W; 0.2-0.5 J/10-15 W and 2-5 J/30-50 W were identified as optimal for

kidney (dusting), ureter (dusting and fragmentation), and bladder (fragmentation)stones, respectively.

Conclusion(s): Based on the analysis of data on 268 subjects available today, the SuperPulse Tm fiber laser is safe and efficacious for all types of urinary stones in all relevant anatomic locations.

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Status

CONFERENCE ABSTRACT

Institution

(Dymov, Rapoport, Enikeev, Tsarichenko, Sorokin, Proskura, Akopyan, Ali, Klimov, Lekarev, Korolev) Sechenov University, Institute for Urology and Reproductive Health, Moscow, Russian Federation

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375.

Super-pulse thulium fiber versus high power holmium lasers. What about temperature?.

Dragos L.B., Somani B., Keller E., De Coninck V., Doizi S., Wiseman O., Sener E., Martis S., Cumpanas A., Botoca M., Minciu R., Traxer O.

Embase

European Urology, Supplements. Conference: EAU19: 34th Annual EAU Congress. Barcelona Spain. 18(1) (pp e505-e508), 2019. Date of Publication: March 2019.

[Conference Abstract]

AN: 2001680203

Introduction & Objectives: A novel Super-Pulse Thulium Fiber laser has recently been developed and used for urolithiasis. The initial results show a better efficacy than conventional Holmium laser lithotripsy. The goal of our in-vitro study was to compare the temperature changes between activated High Power Holmium and Super-Pulse Thulium Fiber lasers.

Material(s) and Method(s): A Super-Pulse Thulium fiber (SPTF)laser prototype with 200µm fibre and a High-Power Holmium (HPH)laser (Lumenis Pulse 120H)with 230µm fibre were used. An isothermal box was created and filled with saline (Fig.1). The temperature of the saline was maintained constantly at 36.5°C using an automated pump which was able to control the pressure and temperature. A urinary tract silicone model was placed in the box with two temperature sensors, one placed within the saline inside the box and the other in the silicone model itself. A LithoVue single-use flexible ureteroscope was introduced through the silicone model without an UAS. Laser fibre tip was placed into a mid calix at 5 mm from the sensor. Laser was activated using different settings until the temperature reached 45°C or for maximum 10 minutes. Experiments were performed without irrigation, with saline irrigation at 40 cm H₂O pressure at 20°C and 37°C temperature respectively. All tests were repeated five times.

Result(s): [Figure presented][Table presented]Our results showed the use of SPTF and HPH laser both caused the temperature to reach 45°C with power greater than 16W, especially when used without irrigation. The time taken to reach this temperature was higher for cooler irrigant fluids. With similar energy and frequency settings using both SPTF and HPH laser, no significant differences on temperature was noted for dusting, pop-dusting, fragmenting or pop-corning when using irrigation fluid at 20°C and 37°C (Table 1). On comparison to HPH laser, when similar power but a lower energy SPTF laser was used the later took longer time to reach 45°C although this was not statistically significant (Table 2)**Conclusions:** Our results show that both SPTF and HPH laser have similar temperature changes for all stone treatment settings.

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Status

CONFERENCE ABSTRACT

Institution

(Dragos, Wiseman) Cambridge University Hospital NHS Foundation Trust, Addenbrooke's Hospital, Dept. of Urology, Cambridge, United Kingdom (Somani) University Hospital Southampton NHS Trust, Dept. of Urology, Southampton, United Kingdom
(Keller, De Coninck, Doizi) Tenon Hospital, Dept. of Urology, Paris, France
(Sener) Marmara University, Dept. of Urology, Istanbul, Turkey

(Martis, Cumanas, Botoca, Minciu) Clinical Emergency County Hospital Timisoara, Dept. of Urology, Timisoara, Romania

(Traxer) Tenon Hospital, Sorbonne University, Dept. of Urology, Paris, France

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376.

When is the best time to assess the stone free rate after laser lithotripsy?.

Dymov A.M., Rapoport L., Enikeev D., Tsarichenko D., Sorokin N., Proskura A., Akopyan G., Klimov R., Ali S., Lekarev V., Korolev D.

Embase

European Urology, Supplements. Conference: EAU19: 34th Annual EAU Congress. Barcelona Spain. 18(1) (pp e2032), 2019. Date of Publication: March 2019.

[Conference Abstract]

AN: 2001680172

Introduction & Objectives: Stone Free rate is routinely used to assess the efficiency of surgical treatment for kidney stones. However, there is an inconsistency in the definition of 'stone-free' due to differences in the timing of the assessment and the size and location of stone fragments. It is widely accepted to perform CT scanning on postoperative day (POD)1 to evaluate residual stones after PCNL. But this timing may not be optimal for SFR assessment after RIRS since dust accumulations can mimic real residual fragments at short-term follow-ups. This study evaluates the SFR on POD 3 and POD 90 after RIRS. We defined "Stone-free" as an absence of any stone fragments after surgery.

Material(s) and Method(s): 32 patients who underwent RIRS for renal stones between January, 2018 and July, 2018 were enrolled into the study. Stone size ranged 7 - 25 mm (medium size - 11,4 mm) and stone density varied from 330 to 1960 HU (mean density 987 HU). SuperPulse Thulium fiber laser (IRE Polus, Russia) was used for stone disintegration with different settings in dusting and fragmentation modes (0.1 - 4J, 7-300Hz, 6-40W). Low dose CT scanning was performed on POD 3 and POD 90 to assess SFR.

Result(s): SFR on POD 1 was achieved in 7% of cases. In those 93% of cases with residuals the stone size was less than 3 mm in 39%, 4 - 6 mm in 22%, 7 - 9 mm in 22%, more than 10 mm in 17%. SFR on POD 90 was achieved in 91% of cases. In those 9% of cases with residuals the stone size was less than 2 mm in 75% and 3 mm in 25%.

Conclusion(s): High rate of artifacts on POD 1 after RIRS is likely to be due to dust accumulations in the collecting system of the kidney. Apparently, more time is required for dust and small fragments wash-out. Seemingly, CT scanning to assess SFR on POD 90 is more reasonable.

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Status

CONFERENCE ABSTRACT

Institution

(Dymov, Rapoport, Enikeev, Tsarichenko, Sorokin, Proskura, Akopyan, Klimov, Ali, Lekarev, Korolev) Sechenov University, Institute for Urology and Reproductive Health, Moscow, Russian Federation

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High power laser machines - a game changer in the field of endourology? The impact of stone density on laser time using Lumenis laser p120 compared to standard 20w laser.

Mekayten M., Lorber A., Katafigiotis I., Leotsakos I., Sfouggaristos S., Heifetz E.M., Abu Sbeih B., Yutkin V., Latke A., Gofrit O.N., Duvdevani M.D.

Embase

European Urology, Supplements. Conference: EAU19: 34th Annual EAU Congress. Barcelona Spain. 18(1) (pp e492-e493), 2019. Date of Publication: March 2019.

[Conference Abstract]

AN: 2001679994

Introduction & Objectives: Ureteroscopy is the gold standard for most urinary tract calculi. At our institute recently incorporated powerful 120w holmium laser machine integrating innovative technology (Lumenis MOSES Pulse™120H Holmium: YAG laser, Lumenis Ltd.). In this retrospective comparative study, we evaluated the influence of stone density on laser dusting time in high power 120W laser machine and in standard 20W (Dornier Medilas H20 Holmium: YAG laser, Dornier Ltd.)
Materials & Methods: Retrospective review of medical records of patients underwent ureteroscopy during 2013-2018 for solitary stone. Stone and clinical characteristics, among laser parameters been evaluated including total laser time until complete stone dusting.
Result(s): Among 631 eligible patients 462 treated with 20W standard laser and 169 patients with 120W laser machine. Stone free rate (SFR) was better in the Lumenis group (89.06% vs 81.26% p-value=0.035). Overall laser time was less than half with Lumenis laser vs d20w (195 sec vs 397.14 sec, p-value<0.001). Multivariate regression demonstrated 234.91 seconds shorter laser time when using lumenis laser while controlling confounders as stone volume, hydronephrosis and location (p=value<0.0001). This pattern was demonstrated in all stone densities. The association between laser dusting time per stone density (figure 1) demonstrates shifted curves and relatively constant laser time when using Lumenis laser, even for hard stones, above 1200 Hounsfield Units, whereas, when using the standard 20W laser the laser time increased exponentially.

Conclusion(s): Time to complete stone dusting using Lumenis laser is extremely shorter, approximately half, comparing to standard 20W laser. This pattern is robust and even exponential when evaluating laser time per stone density, especially in hard stones. A new horizon of powerful, innovative laser technology will enable improve endourology practice and patients care [Figure presented]

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Status

CONFERENCE ABSTRACT

Institution

(Mekayten, Lorber, Katafigiotis, Leotsakos, Sfouggaristos, Abu Sbeih, Yutkin, Latke, Gofrit, Duvdevani) Hadassah Hebrew University Medical Center, Dept. of Urology, Jerusalem, Israel
(Heifetz) Jerusalem College of Technology, Dept. of Health Informatics, Jerusalem, Israel

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378.

Prospective randomized study of fixed laser settings vs variable laser settings for a better stone free rate.

Vaddi C.M., Siddalingaswamy P., Ramakrishna P., Manoj Kumar Y., Gopi P., Roopa P., Agarwal M., Panda A.

Embase

European Urology, Supplements. Conference: EAU19: 34th Annual EAU Congress. Barcelona Spain. 18(1) (pp e489), 2019. Date of Publication: March 2019.

[Conference Abstract]

AN: 2001679973

Introduction & Objectives: Endoscopic treatment for renal calculi has seen an increased trend towards retrograde intrarenal surgery (RIRS). With progressive advancements in technology even larger kidney stones are amenable to RIRS. When dealing with larger stones, stone free rate (SFR) is decreased and in these cases laser settings play a major role. Many studies have described laser settings with respect to energy, frequency and pulse width but they have used the same setting throughout the procedure. We observed that systematic painting of stone coupled with modifying laser settings during the procedure tended to improve the SFR. We conducted this

randomized controlled study to know the outcomes of fixed versus variable or modified laser settings. The objective of this study is to assess the effect of variable laser settings verses fixed settings on the stone free rate and complications.

Material(s) and Method(s): We conducted a prospective, single-blind randomized controlled study. Hospital ethical committee clearance was obtained for the study. A total of 113 Patients were randomly divided in to two groups. In group A, fixed laser settings were used at 1.0J energy and 12Hz frequency during the entire procedure. In Group B, variable laser settings were used; initial fine fragmentation was performed @ 1.0J X 12Hz. Once the residual stone reduced enough to wobble, the energy was reduced to 6 W. Settings were further reduced to 2.5W as required to complete the fragmentation process with minimal migration.

Result(s): Group A had 58 patients and Group B 55 patients for analysis of perioperative variables. SFR is in favor of systematic stone dusting with variable frequency (95.8% vs 83.6%, $p = 0.055$), especially in stones larger than 15 mm (80% vs 57.7% $p = 0.03$). Post-operative fever and pain were not statistically significant between the groups.

Conclusion(s): The solitary hard stones of 10 to 20 mm can be treated with more than 95% SFR using systematic dynamic painting technique with variable laser settings producing fine dust, without increasing significant postoperative complications or hospital stay.

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Status

CONFERENCE ABSTRACT

Institution

(Vaddi, Siddalingaswamy, Ramakrishna, Manoj Kumar, Gopi, Roopa) Preeti Urology and Kidney Hospital, Dept. of Urology, Hyderabad, India (Agarwal) Ramesh Hospital, Dept. of Urology, Guntur, India

(Panda) KIMS Hospital, Dept. of Urology, Hyderabad, India

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379.

High-power holmium laser with Moses technology: Our initial experience.

Angerri Feu O., Sabiote L., Mayordomo O., Mosquera L., Flores L.D., Emiliani E., Kanashiro A., Sanchez-Martin F., Millan F., Palou J.

Embase

European Urology, Supplements. Conference: EAU19: 34th Annual EAU Congress. Barcelona Spain. 18(1) (pp e2226), 2019. Date of Publication: March 2019.

[Conference Abstract]

AN: 2001679731

Introduction & Objectives: Holmium laser lithotripsy is currently the gold standard for intracorporeal lithotripsy. However, retropulsion of stone fragments is a frequent problem, especially in the case of ureteral stones. Lumenis has developed a new laser technology called Moses which is able to control the laser energy in two stages: it first sends first a portion of energy that separates the water (this is known as the Moses effect) and subsequently emits the rest of the energy through the first bubble. The aim is to achieve a more efficient use of the energy and less retropulsion due to the vacuum effect. Here we present two cases in which this technological innovation was used, one involving mini percutaneous nephrolithotomy and one, retrograde intrarenal surgery (RIRS) on the left kidney.

Material(s) and Method(s): The first case is a 55-year-old woman with history of diabetes, hypertension, and uric acid lithiasis who underwent left minipercutaneous nephrolithotomy due to two 10-cm pyelic stones. In the supine decubitus position, percutaneous access with a 0-90 technique was performed to the left middle calyceal kidney group. Dilation was executed to 14 Ch sheath. High-power holmium lasertripsy of both lithiasis was then performed using the Moses technology in contact mode, with a 365-um fiber at 0.8 J/40 Hz. Subsequently, the stones were pulverized at 0.4 J/60 Hz. We confirmed the absence of lithiasis with a digital flexible ureteroscope. A retrograde JJ catheter and nephrostomy tube were placed. The second case is an 84-year-old patient with a 7-mm calcium oxalate monohydrate lithiasis in the left calyceal group who underwent left RIRS. The patient had history of diabetes, hypertension, dyslipidemia, COPD, and aortobifemoral bypass. Digital flexible ureteroscopy was performed after ureteral sheath placement of 12/14 Ch. The lithiasis was transferred with a basket to the upper calyceal group. We lasertrized with a 200 um fiber in contact mode at 0.5 J/25 Hz. Pulverization was done in distance mode at 1.5 J/25 Hz (popcorn effect).

Result(s): There were no surgical postoperative complications and patients were discharged at 48 h. Both double J were removed after 3 weeks once the absence of lithiasis had been confirmed.

Conclusion(s): Our initial experience suggests that Moses technology is safe, with a feeling of less retropulsion and it seems to have no changes with deflection in comparison to regular software. Further studies are required to corroborate these findings and to assess the effectiveness of this new technology.

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Status

CONFERENCE ABSTRACT

Institution

(Angerri Feu, Sabiote, Mayordomo, Mosquera, Flores, Emiliani, Kanashiro, Sanchez-Martin, Millan, Palou) Fundacio Puigvert, Dept. of Urology, Barcelona, Spain

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380.

Robotic uretero-ureterostomy for proximal ureteric stricture in adult: A new add in robotic armamentarium.

Parashar S., Chipde S., Vajpayee V., Kalathia J., Mishra U., Tyagi A., Arora S.

Embase

Indian Journal of Urology. Conference: 52nd Annual National Conference of the Urological Society of India, USICON 2019. Bhubaneswar India. 35(Supplement 1) (pp S39), 2019. Date of Publication: January 2019.

[Conference Abstract]

AN: 627398778

Introduction: Ureteric stricture is a complication of ureteroscopy with incidence ranges from 0.5-3.5%. This data increases with use of dormia basket for impacted stones extraction. Objective of this case study is to demonstrate that Robotic technology is one of the alternative for dealing with such cases.

Material(s) and Method(s): A 35 yr old male reported with left 1.9 cm upper ureteric stricture, at L-4 level with moderate hydronephrosis. Patient underwent Left ureteroscopic stone extraction, 9 month ago. Dormia stone basket entrapment injury happened during stone extraction, open ureteric repair done over double j stent. In follow up patient has to undergo re stenting thrice, whenever stent was removed because of acute loin pain. Patient diagnosed as a case of proximal ureteric stricture and posted for robotic ureteroureterostomy. Patient was placed in 60degree flank position with the ipsilateral arm positioned on the side of the patient. Five ports were placed in a straight line configuration lateral to the rectus muscle and the robot was docked. After colonic mobilization ureterolysis was done strictured segment recognised and excised After spatulation of ureteric ends ureteric anastomosis was done with interrupted sutures over double j stent.

Result(s): Patient withstood the procedure well without any complications. Operative time- 5 hours including console time Estimated Blood loss- 70 ml, drain removed after 3 days. Patient was discharged after 5 days the Double j stent removal was done after 6 weeks. Patient is asymptomatic in his follow-up of 6 months post operative renal us scan on fourthmonth is showing subsidence of ureteropelvic dilatation.

Conclusion(s): Robotic ureteroureterostomy is a feasible and safe surgical option for the proximal ureteric stricture repair.

Status

CONFERENCE ABSTRACT

Institution

(Parashar, Chipde, Vajpayee, Kalathia, Mishra, Tyagi, Arora) SAIMS, Indore, Madhya Pradesh, India

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381.

Dusting efficiency comparison between Moses technology of Ho: YAG laser and superpulse thulium fiber laser.

De Coninck V.M.J., Keller E.X., Kovalenko A., Vinnichenko V., Traxer O.

Embase

European Urology, Supplements. Conference: EAU19: 34th Annual EAU Congress. Barcelona Spain. 18(1) (pp e1757-e1758), 2019. Date of Publication: March 2019.

[Conference Abstract]

AN: 2001681238

Introduction & Objectives: At present, the Ho:YAG laser is the most commonly used laser for treating urolithiasis. A new technology of the Ho:YAG laser - Moses technology - was designed to increase ablation efficiency and to reduce stone retropulsion. Recently, a thulium fiber laser (TFL) has been suggested as an alternative laser source, with a potential for higher ablative efficiency and lower retropulsion. The aim of this study was to compare the efficiency of stone dusting between a Ho:YAG laser with Moses technology and a SuperPulse TFL.

Material(s) and Method(s): A SuperPulse TFL generator was compared to a Ho:YAG laser generator with Moses technology. 200 microm fibers were used in all experiments. Laser lithotripsy was performed with a flexible ureteroscope (Pusen) for direct vision and fiber control. Uric acid stones were used in this study. Irrigation pressure was 40 cm H₂O. Lithotripsy was performed in a specially constructed vessel of 13 mm in diameter, with 2 mm holes drilled in the walls at a height of 40 mm to allow collection of stone dust from irrigation overflow. The laser parameters for both systems were 0.2 J and 80 Hz (16 W). Lithotripsy was performed during 2'30". After lithotripsy, the solution from the outer cuvette was filtered through filter paper with a pore size of 2 microm allowing stone dust collection. The weight of stone dust was calculated as the difference between weight of the dried filter with the stone dust and the initial weight of the filter. Experiments were repeated 5 times. [Figure presented] Results: Initial stone mass was 210+/-24 mg. The weight of stone dust after lithotripsy was 69+/-32 mg for Ho:YAG laser lithotripsy with Moses technology and 138+/-25 mg for the SuperPulse TFL. [Figure presented]

Conclusion(s): The SuperPulse TFL produced twice as much stone dust as the Ho:YAG laser with Moses technology. When these promising results are confirmed in future studies, the SuperPulse TFL may be able to significantly reduce operating times.

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Status

CONFERENCE ABSTRACT

Institution

(De Coninck) AZ Klina, Dept. of Urology, Brasschaat, Belgium (Keller, Traxer) Tenon Hospital, Assistance-Publique Hopitaux de Paris. Pierre et Marie Curie University, Dept. of Urology, Paris, France

(Kovalenko, Vinnichenko) National Research Nuclear University MEPhI, Dept. of Engineering, Moscow, Russian Federation

Publisher

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Year of Publication

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382.

Ureteroscopy and holmium laser lithotripsy outcomes of high-power laser settings in large urinary tract stones (> 15 mm): Results from a university teaching hospital.

Whitehurst L., Pietropaolo A., Geraghty R., Jones P., Somani B.

Embase

Journal of Clinical Urology. Conference: British Association of Urological Surgeons Section of Endourology Meeting, BAUS 2018. Oxford United Kingdom. 12(1) (pp 88-89), 2019. Date of Publication: January 2019.

[Conference Abstract]

AN: 625863339

Introduction: Developments in laser technology have brought notable improvement in stone treatment. With the new high-power machines, it is possible to ablate big stones utilizing a technique called pop-dusting. This study aims to show our unit's outcomes after the introduction of a 100-W Holmium laser.

Method(s): Over a period of 16 months (January 2017- April 2018), 50 patients underwent ureteroscopy and stone laser lithotripsy in the same urology department. Data on patient and stone demographics, and operative and post-operative results were collected prospectively.

Result(s): Our 50 patients had a male:female ratio of 35:15 and mean age of 56.8. Energy settings were adjusted according to stone composition, location and size, varying from 0.5-0.8 J and rate between 30-50 Hz. The mean single and overall stone sizes were 10.3 and 21.2 mm, respectively, with 35 patients with multiple stones in the urinary tract. With a mean operating time of 52.3 minutes, the stone-free rate was 92%. An access sheath was used in 28 cases (56%): 5 were 9.5/11.5 Fr, 20 were 12/14 Fr and 2 were 14/16 Fr, in one case a bilateral 12/14 Fr access sheath has been used. Three patients (6%) developed complications: one developed urosepsis requiring intensive care unit admission (a patient with previous sepsis), one stent stuck in the calyceal system and required removal under general anaesthetic and one encrusted stent fractured in the kidney.

Conclusion(s): Ureteroscopy and laser lithotripsy with a high-power laser is safe and reliable. It enables treatment of large stone burden, and bilateral or abnormal stone scenarios with limited operative time and complications.

Status

CONFERENCE ABSTRACT

Institution

(Whitehurst, Pietropaolo, Geraghty, Jones, Smani) Southampton General Hospital,
Southampton, United Kingdom

Publisher

SAGE Publications Ltd

Year of Publication

2019

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383.

Miniature ureteroscope distal tip designs for potential use in thulium fiber laser lithotripsy.

Wilson C., Kennedy J.D., Irby P., Fried N.

Embase

Journal of biomedical optics. 23(7) (pp 1-9), 2018. Date of Publication: 01 Jul 2018.

[Article]

AN: 629285295

Thulium fiber laser lithotripsy using smaller optical fibers may enable development of miniature ureteroscopes. Two ureteroscope distal tip prototypes were built and characterized. The first design was 4.5-French (Fr) [1.5-mm outer diameter (OD)], five channel tip, housing 200- μ m inner diameter (ID) dedicated central channel for insertion of 100- μ m core fibers and four surrounding channels, each with 1.5 Fr (510- μ m ID) for instrumentation, irrigation, imaging, and illumination, respectively. The second design was 6.0-Fr (2.0-mm OD), three-dimensional printed tip with larger, hemispherical common working channel and separate detection port integrated with ring lighting. Standard instruments, including optical fibers, guidewires, and stone baskets, were inserted through working channels to demonstrate feasibility. Gravitational and manual pump-assisted saline irrigation rates were measured. Luminous intensity distribution curves (LIDCs) were modeled for both ring and conventional lighting designs. Imaging was conducted using 3000, 6000, and 10,000 pixel, miniature, flexible endoscopes with 0.4-, 0.6-, and 0.9-mm OD, to differentiate between urinary stones and ureter wall, for potential clinical application. The multichannel ureteroscope tip with 1.5-Fr working channel yielded a gravitational saline flow rate of 3.9 $\pm$ 0.2 mL/min compared to 31.3 $\pm$ 0.6 mL/min for standard (3.6 Fr) ureteroscope channel. Manual, pump-assisted irrigation increased flow rate to 32.5 $\pm$ 3.0 mL/min. The 6000 pixel, 0.6-mm OD, flexible endoscope provided a balance of clear differentiation between stones and ureter wall and sufficiently small OD. A ring lighting configuration provided more uniform illumination than conventional cross-lighting geometry as demonstrated by LIDCs. With further development, these miniature ureteroscope tip designs may be integrated into a fully functional ureteroscope to permit ureteral access with minimal trauma and improved patient safety and comfort.

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PMC Identifier

29981222 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=29981222>]

Institution

(Wilson, Kennedy, Fried) Univ. of North Carolina at Charlotte, United States (Irby, Fried)
Carolinas Medical Ctr., United States

Publisher

NLM (Medline)

Year of Publication

2018

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384.

A New Automatically Fixating Stone Basket (2.5 F) Prototype with a Nitinol Spring for Accurate Ureteroscopic Stone Size Measurement.

Cordes J., Nguyen F., Pinkowski W., Merseburger A.S., Ozimek T.

Embase

Advances in Therapy. 35(9) (pp 1420-1425), 2018. Date of Publication: 01 Sep 2018.

[Article]

AN: 623406654

Introduction: Intraoperative assessment of stone size is crucial for the successful and safe extraction of stones. The first automatically fixating measuring stone basket prototype showed a mismatch between the steel spring and the nitinol basket; therefore, to improve this prototype, the steel spring was replaced with a nitinol spring and a modified scale was implemented on the basket handle for accurate intraoperative stone size measurement.

Method(s): The proposed tipped basket was composed of nitinol. A standard handle with a spring-supported self-closing mechanism (2.5 F, Urotech) was used, and a modified nonlinear millimeter scale was established on the handle. The grasping force was provided by the new nitinol spring mechanism in the handgrip. Various colors associated with the stone size were applied on the scale.

Result(s): The material difference between the basket and the spring was eliminated. The measuring scale ranged from 2 mm (green) through 5 mm (yellow) to 8 mm (red), and the scale was nonlinear because of the nonlinear relationship between the diameter of the stone and the distance marked on the scale.

Conclusion(s): The proposed automatically fixating stone basket with a nitinol spring has the potential to improve the safety and effectiveness of endourological stone retrieval. Further validation of this new scale and basket should follow.

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Status

Embase

Institution

(Cordes, Merseburger, Ozimek) Department of Urology, University Hospital Schleswig-Holstein, Luebeck, Germany (Nguyen) Dr. Ing. h.c. F. Porsche AG, Stuttgart, Germany

(Pinkowski) europ medical GmbH, Aschheim, Germany

Publisher

Springer Healthcare (E-mail: kathleen.burke@springer.com)

Year of Publication

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385.

Dusting versus Basketing during Ureteroscopy-Which Technique is More Efficacious? A Prospective Multicenter Trial from the EDGE Research Consortium.

Humphreys M.R., Shah O.D., Monga M., Chang Y.-H., Krambeck A.E., Sur R.L., Miller N.L., Knudsen B.E., Eisner B.H., Matlaga B.R., Chew B.H.

Embase

Journal of Urology. 199(5) (pp 1272-1276), 2018. Date of Publication: May 2018.

[Article]

AN: 2000606463

Purpose: There is scant evidence in the literature to support dusting vs active basket extraction during ureteroscopy for kidney stones. We prospectively evaluated and followed patients to determine which modality produced a higher stone-free rate with the fewest complications.

Material(s) and Method(s): Members of the Endourologic Disease Group for Excellence research consortium prospectively enrolled patients with a renal stone burden ranging from 5 to 20 mm in this study. A holmium laser was used and all patients were stented postoperatively. Ureteral access sheaths were used in 100% of basketing cases while sheaths were optional when dusting. The primary study outcome was the stone-free rate at 6 weeks as determined by x-ray and ultrasound.

Result(s): A total of 84 and 75 patients were enrolled in the basketing and dusting arms, respectively. Stones in the dusting group were significantly larger (mean +/- SD stone area 96.1 +/- 65.3 vs 63.3 +/- 46.0 mm², p <0.001). The stone-free rate was significantly higher in the basketing group on univariate analysis (74.3% vs 58.2%, p = 0.04) but not on multivariate analysis (1.9 OR, 95% CI 0.9-4.3, p = 0.11). In patients who underwent a basketing procedure operative time was 37.7 minutes longer than in those treated with a dusting procedure (95% CI 23.8-51.7, p <0.001). There was no statistically significant difference in complication rates, hospital readmissions or additional procedures between the groups.

Conclusion(s): The stone-free rate was higher for active basket retrieval of fragments at short-term followup on univariate analysis but not on multivariate analysis. There was no difference in postoperative complications or procedures. The 2 techniques should be in the armamentarium of the urologist.

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PMC Identifier

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Status

Embase

Institution

(Humphreys, Chang) Mayo Clinic, Phoenix, Arizona, United States (Shah) Columbia University, New York, New York, United States

(Monga) Cleveland Clinic, Cleveland, Ohio, United States

(Knudsen) Ohio State University, Columbus, Ohio, United States

(Krambeck) Indiana University, Indianapolis, Indiana, United States

(Sur) University of California-San Diego, San Diego, California, United States

(Miller) Vanderbilt University, Nashville, Tennessee, United States
(Eisner) Massachusetts General Hospital, Boston, Massachusetts, United States
(Matlaga) Johns Hopkins Hospital, Baltimore, Maryland, United States
(Chew) University of British Columbia, Vancouver, British Columbia, Canada
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Year of Publication
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386.

Ultrasound guided ureteroscopy in children: Safety and success.

Morrison J.C., Van Batavia J.P., Darge K., Long C.J., Shukla A.R., Srinivasan A.K.

Embase

Journal of Pediatric Urology. 14(1) (pp e1-64), 2018. Date of Publication: February 2018.

[Article]

AN: 619453703

Introduction: Ureteroscopy has been shown to be a highly efficacious and safe modality for the treatment of pediatric urolithiasis. However, conventional ureteroscopy relies on fluoroscopy for intraoperative guidance, exposing both patient and operating room personnel to ionizing radiation. Pediatric urolithiasis patients are at a particularly increased risk from this radiation exposure. The use of ultrasound in place of fluoroscopy for intraoperative guidance has emerged as one modification that can reduce radiation exposure during ureteroscopy. Although ultrasound-guided ureteroscopy has been shown to be a safe, and effective approach to stone management in adults, there have been no studies to date utilizing this approach in children.

Objective(s): The aim was to describe our initial experience with ultrasound-guided ureteroscopy in children as a safe and feasible modality to manage pediatric urolithiasis. Study design: A

retrospective review of consecutive patients that underwent ultrasound-guided ureteroscopy by one pediatric urologist (A.K.S.) from 2014 to 2016 for symptomatic urolithiasis was performed. Patient data were extracted from our center's IRB-approved prospectively maintained database of all children with urolithiasis.

Material(s) and Method(s): Real-time ultrasonic guidance was provided by a pediatric urology attending, with fluoroscopy available on standby. With the probe positioned on the patient's flank, ultrasound was used to visualize advancement of guidewire, dual-lumen catheter, and ureteroscope through the ureteral orifice and up to the renal pelvis (Figure). Stones were identified and removed via basket retrieval. At the conclusion of each case, ultrasonography was then used to confirm stent placement of indwelling double pigtail ureteral catheters.

Result(s): Eleven patients were identified that underwent 12 ultrasound-guided ureteroscopic procedures in an outpatient setting. Stones were accessed in various locations and were removed by basket retrieval. Laser calycostomy into calyceal diverticulum and balloon dilations of ureterovesical junction and calyceal infundibulum were also performed. There were Clavien grade I and II complications in four patients; all of which were related to pain control.

Discussion(s): To our knowledge, this is the first study reporting the successful use of ultrasound-guided ureteroscopy in children. The main limitation of this feasibility study is its small sample size. A larger series is needed to corroborate these findings and make them generalizable to a wider population.

Conclusion(s): This feasibility study accomplished its aim of demonstrating for the first time that ultrasound-guided ureteroscopy can be safely used in children to manage urolithiasis.[Figure presented]

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PMC Identifier

29239803 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=29239803>]

Status

Embase

Author NameID

Van Batavia, Jason P.; ORCID: <http://orcid.org/0000-0002-1592-7824>

Institution

(Morrison, Van Batavia, Long, Shukla, Srinivasan) Division of Urology, Children's Hospital of Philadelphia, Perelman School of Medicine at University of Pennsylvania, Philadelphia, PA, United States (Darge) Division of Body Imaging, Department of Radiology, The Children's Hospital of Philadelphia, Philadelphia, PA, United States

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387.

Editorial Comment on: Ureteroscopic High-Frequency Dusting Utilizing a 120-W Holmium Laser
by Tracey et al.

Kronenberg P.

Embase

Journal of Endourology. 32(4) (pp 296), 2018. Date of Publication: April 2018.

[Editorial]

AN: 621798982

PMC Identifier

29495879 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=29495879>]

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Embase

Institution

(Kronenberg) Department of Urology, Hospital Prof. Doutor Fernando Fonseca, IC-19, Amadora
2720-276, Portugal

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Year of Publication

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388.

Ureteroscopic High-Frequency Dusting Utilizing a 120-W Holmium Laser.

Tracey J., Gagin G., Morhardt D., Hollingsworth J., Ghani K.R.

Embase

Journal of Endourology. 32(4) (pp 290-295), 2018. Date of Publication: April 2018.

[Article]

AN: 621798950

Introduction and Objective: Recently there has been interest in a dusting technique for lithotripsy during ureteroscopy (URS) utilizing high-frequency and low-pulse energy (HiFr-LoPE) settings. We assessed a 120-W holmium laser that permits high-frequency (>50 Hz) dusting.

Material(s) and Method(s): Consecutive URS cases performed by a single surgeon using the P120H (Lumenis, San Jose, CA) were reviewed. Lithotripsy was performed using HiFr-LoPE settings (50-80 Hz/0.2-0.5 J [10-40 W]). Residual fragments (RFs) were determined on postoperative radiography, ultrasonography, or CT. Complications were classified using the Clavien-Dindo grade.

Result(s): URS was performed on 82 renal units (71 patients). Renal stones constituted the majority (73%), including four partial staghorn stones. Mean stone size and density (HU) were 12.5 mm (SD 8.7; range 5.0-50.0) and 993 (SD 353; range 230-1580), respectively. Ureteral access sheath was used in 15 (21%) patients. Mean total laser energy per case was 5.2 kJ (range 0.1-42.1). Dusting was exclusively performed in 84% of cases. Postoperative stents were placed in 91% (41% string). Zero-fragment and ≤ 2 mm RF rates were 62.1% and 74.2%, respectively. There were 11 complications (13%) (grade 1 = 5, grade 2 = 6). The emergency department visit rate was 5.6%. There were no hospitalizations or reinterventions.

Conclusion(s): Refinements in laser technology have expanded methods to ablate urinary stones. Outcomes utilizing a dusting technique demonstrated acceptable RF and complication rates. However, not all stones are amenable to dusting, and further study is needed to define the optimal role of this technique during laser lithotripsy.

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29239225 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=29239225>]

Status

Embase

Institution

(Tracey, Gagin, Morhardt, Hollingsworth, Ghani) Department of Urology, University of Michigan, North Campus Research Complex, Building 16, 114W 2800 Plymouth Road, Ann Arbor, MI 48109-290, United States (Ghani) Ann Arbor Veterans Affairs Healthcare System, Ann Arbor, MI, United States

Publisher

Mary Ann Liebert Inc. (E-mail: info@liebertpub.com)

Year of Publication

2018

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389.

Comparison of Outcomes between Two Methods to Extract Stone Fragments during Flexible Ureteroscopic Lithotripsy.

Tabei T., Ito H., Kobayashi K., Kawahara T., Matsuzaki J.

Embase

BioMed Research International. 2018 (no pagination), 2018. Article Number: 4526721. Date of Publication: 2018.

[Article]

AN: 622569708

Objectives. To retrospectively compare the operative and clinical outcomes of flexible ureteroscopic lithotripsy (fURSL) with stone extraction performed either by a surgeon (SE) who manipulates the retrieval basket or by having the surgical assistant (AE) manipulate the retrieval basket with the aim of clarifying which method provides a greater stone-free postoperative status.

Methods. The study group consisted of patients who underwent fURSL with SE or AE at our

institution between April 2015 and December 2016. Demographic, clinical, stone, and operative variables were compared between the two groups. Multivariate logistic regression was used to identify risk factors associated with a stone-free and non-stone-free status postoperatively.

Results. Our analysis included 196 cases of renal stones treated using fURSL, with 109 who underwent AE and 87 who underwent SE. The rate of stone-free status was higher for the SE group (90.8%) than for the AE group (61.5%; $P<0.001$). The method of extraction was identified as an independent predictor of stone-free status ($P<0.001$, odds ratio (SE compared to AE), 9.133, 95% confidence interval, 3.736-22.322). Conclusion. The stone-free rate is improved by having the surgeon perform the stone extraction as part of the fURSL procedure.

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PMC Identifier

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Status

Embase

Author NameID

Tabei, Tadashi; ORCID: <http://orcid.org/0000-0003-1416-4877> Kawahara, Takashi; ORCID: <http://orcid.org/0000-0002-7049-3379>

Matsuzaki, Junichi; ORCID: <http://orcid.org/0000-0003-3950-1358>

Institution

(Tabei, Kobayashi) Department of Urology, Yokosuka Kyosai Hospital, 1-16 Yonegahama-Dori, Yokosuka, Kanagawa, Japan (Ito) Department of Urology, Yokohama City University Graduate School of Medicine, 3-9 Fukuura, Kanazawa-ku, Yokohama, Kanagawa, Japan

(Kawahara) Departments of Urology and Renal Transplantation, Yokohama City University Medical Center, 4-57 Urafune-Cho, Minami-ku, Yokohama, Kanagawa, Japan

(Matsuzaki) Department of Urology, Ohguchi Higashi General Hospital, 2-19-1 Irie, Kanagawa-ku, Yokohama, Kanagawa, Japan

Publisher

Hindawi Limited (410 Park Avenue, 15th Floor, 287 pmb, New York NY 10022, United States)

Year of Publication

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390.

Unplanned Emergency Department Visits and Hospital Admissions Following Ureteroscopy: Do Ureteral Stents Make a Difference?.

Mittakanti H.R., Conti S.L., Pao A.C., Chertow G.M., Liao J.C., Leppert J.T., Elliott C.S.

Embase

Urology. 117 (pp 44-49), 2018. Date of Publication: July 2018.

[Article]

AN: 2000751853

Objective: To evaluate unplanned medical visits within the early postoperative period after ureteroscopy in patients with and without ureteral stent placement.

Material(s) and Method(s): We identified all ureteroscopic procedures for urinary stone disease in the California Office of Statewide Health Planning and Development database from 2010 to 2012. The primary outcome was any emergency department visit or inpatient hospital admission in the first 7 days following ureteroscopy. Patients were subcategorized by type of ureteroscopy (ie, laser lithotripsy vs basket retrieval) and were analyzed for significant differences between stented and unstented patients. Multivariable logistic regression was performed to determine if ureteral stent placement was independently associated with unplanned visits.

Result(s): Our analytic cohort included 16,060 patients undergoing 17,716 ureteroscopy procedures. A ureteral stent was placed in 86.2% of patients undergoing laser lithotripsy and in 70.5% of patients receiving basket retrieval. In the 7 days following ureteroscopy, 6.6% of patients were seen in the emergency department and 2.2% of patients were admitted to a hospital. In a fully adjusted model, the utilization of a ureteral stent was not associated with emergency department visits or inpatient admissions.

Conclusion(s): Ureteral stent placement during ureteroscopy is not associated with an increased odds of emergency department visits and inpatient admissions in the early postoperative period.

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PMC Identifier

29601836 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=29601836>]

Status

Embase

Institution

(Mittakanti, Conti, Liao, Leppert, Elliott) Department of Urology, Stanford University School of Medicine, Stanford, CA, United States (Conti, Pao, Liao, Leppert) Veterans Affairs Palo Alto Health Care System, Palo Alto, CA, United States
(Pao, Chertow, Leppert) Department of Medicine, Stanford University School of Medicine, Stanford, CA, United States
(Elliott) Division of Urology, Santa Clara Valley Medical Center, Santa Clara, CA, United States
Publisher
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Year of Publication
2018

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391.

Sensitivity of Noncontrast Computed Tomography for Small Renal Calculi With Endoscopy as the Gold Standard.

Bhojani N., Paonessa J.E., El Tayeb M.M., Williams J.C., Hameed T.A., Lingeman J.E.

Embase

Urology. 117 (pp 36-40), 2018. Date of Publication: July 2018.

[Article]

AN: 2000751574

Objective: To compare the sensitivity of noncontrast computed tomography (CT) with endoscopy for detection of renal calculi. Imaging modalities for detection of nephrolithiasis have centered on abdominal x-ray, ultrasound, and noncontrast CT. Sensitivities of 58%-62% (abdominal x-ray), 45% (ultrasound), and 95%-100% (CT) have been previously reported. However, these results have never been correlated with endoscopic findings.

Method(s): Idiopathic calcium oxalate stone formers with symptomatic calculi requiring ureteroscopy were studied. At the time of surgery, the number and the location of all calculi within

the kidney were recorded followed by basket retrieval. Each calculus was measured and sent for micro-CT and infrared spectrophotometry. All CT scans were reviewed by the same genitourinary radiologist who was blinded to the endoscopic findings. The radiologist reported on the number, location, and size of each calculus.

Result(s): Eighteen renal units were studied in 11 patients. Average time from CT scan to ureteroscopy was 28.6 days. The mean number of calculi identified per kidney was 9.2 +/- 6.1 for endoscopy and 5.9 +/- 4.1 for CT ($P < .004$). The mean size of total renal calculi (sum of the longest stone diameters) per kidney was 22.4 +/- 17.1 mm and 18.2 +/- 13.2 mm for endoscopy and CT, respectively ($P = .06$).

Conclusion(s): CT scan underreports the number of renal calculi, probably missing some small stones and being unable to distinguish those lying in close proximity to one another. However, the total stone burden seen by CT is, on average, accurate when compared with that found on endoscopic examination.

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Embase

Institution

(Bhojani) Department of Urology, University of Montreal, Montreal, Quebec, Canada (Paonessa)

Department of Urology, Syracuse University, Syracuse, NY, United States

(El Tayeb) Department of Urology, Baylor Scott and White Health, Temple, TX, United States

(Williams) Department of Anatomy and Cell Biology, Indiana University School of Medicine, Indianapolis, IN, United States

(Hameed) Department of Radiology, Indiana University School of Medicine, Indianapolis, IN, United States

(Lingeman) Department of Urology, Indiana University School of Medicine, Indianapolis, IN, United States

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392.

The Clinical Efficacy of Dual-Lumen Catheter Technique in Retrograde Intrarenal Surgery for the Management of Nephrolithiasis: A Propensity Score Analysis.

Kim H.S., Yoo S., Cho S.Y.

Embase

Journal of Endourology. 32(12) (pp 1093-1099), 2018. Date of Publication: December 2018.

[Article]

AN: 626014350

Objective: To assess the clinical efficacy of dual-lumen catheter technique in retrograde intrarenal surgery (RIRS) in terms of stone-free rate.

Method(s): The data of 172 patients who underwent RIRS for renal stones between 2010 and 2017 were retrospectively reviewed. Patients were classified into two groups depending on whether the dual-lumen catheter technique was used (group 1, n = 25) or not (group 2, n = 147) during RIRS. In turn, all patients of group 1 were compared with those of group 2 using propensity score analysis methods. Clinical variables, including post-RIRS residual fragments (RFs) (≥ 2 mm) and dusts (sandy stones) (≤ 1 mm), were compared between both groups. Logistic regression analyses were conducted to identify the predictors of postoperative RFs and dusts.

Result(s): According to propensity score analysis, no other clinical variables were significantly different between the two groups, except the dust-free rate was significantly higher in group 1 than in group 2 (92% vs 40%, $p < 0.001$). In multivariate analysis, the performance of dual-lumen catheter technique was an independent predictor of the absence of dusts after RIRS (odds ratio [OR], 0.040; 95% confidence interval [CI], 0.070-0.220). In addition, on performing multivariate analyses in another matched population, it was found that although the technique adversely affected the removal of RFs (OR, 4.711; 95% CI, 1.203-18.447), it showed an excellent effect on the evacuation of dusts (OR, 0.049; 95% CI, 0.007-0.347).

Conclusion(s): Our analyses suggest that the use of dual-lumen catheter during RIRS can facilitate the evacuation of sandy stones. However, further prospective randomized trials are required to verify the usefulness of this technique in real clinical practice.

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Status

Embase

Institution

(Kim) Department of Urology, Dongguk University Ilsan Medical Center, Goyang, South Korea

(Yoo, Cho) Department of Urology, Seoul National University Boramae Medical Center,

Sindaeabang 2-dong 395, Dongjak-gu, Seoul 156-707, South Korea

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Year of Publication

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393.

Dusting technique for lithotripsy: what does it mean?.

Doizi S., Keller E.X., De Coninck V., Traxer O.

Embase

Nature Reviews Urology. 15(11) (pp 653-654), 2018. Date of Publication: 01 Nov 2018.

[Note]

AN: 622648237

Kidney stones are currently managed using laser lithotripsy and the most recent generation of laser generators have enabled the possibility of the dusting technique. Dusting avoids the use of a basket, as stone fragments are spontaneously evacuated; however, no consensus on the definition of dust currently exists.

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PMC Identifier

29921906 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=29921906>]

Status

Embase

Institution

(Doizi, Keller, De Coninck, Traxer) Sorbonne Universite, Service d'Urologie, AP-HP, Hopital Tenon, Paris, France (Doizi, Keller, De Coninck, Traxer) Sorbonne Universite, GRC ndegree20, Groupe de Recherche Clinique sur la Lithiase Urinaire, Hopital Tenon, Paris, France

Publisher

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394.

The effect of surgeon versus technologist control of fluoroscopy on radiation exposure during pediatric ureteroscopy: A randomized trial.

Kokorowski P.J., Chow J.S., Cilento B.G., Kim D.-S., Kurtz M.P., Logvinenko T., MacDougall R.D., Nelson C.P.

Embase

Journal of Pediatric Urology. 14(4) (pp 334.e1-334.e8), 2018. Date of Publication: August 2018.

[Article]

AN: 2000898156

Background: Fluoroscopy is commonly used during pediatric ureteroscopy (PURS) for urolithiasis, and the most important contributor to overall radiation exposure is fluoroscopy time (FT). One factor that may impact FT is who controls activation of the fluoroscope: the urologist (with a foot pedal) or the radiation technologist (as directed by the urologist). While there are plausible reasons to believe that either approach may lead to reduced FT, there are no

systematic investigations of this question. We sought to compare FT with surgeon-control versus technologist control during PURS for urolithiasis.

Method(s): We conducted a randomized controlled trial (Clinicaltrials.gov ID number: NCT02224287). Institutional Review Board approval was sought and obtained for this study. All subjects (or their legal guardians) provided informed consent. Each patient (age 5-26 years) was randomized to surgeon- or technologist-controlled fluoroscope activation. Block randomization was stratified by the surgeon. For technologist control, the surgeon verbally directed the technologist to activate the fluoroscope. For surgeon control, a foot pedal was used by the surgeon. The technologist controlled c-arm positioning, settings, and movement. The primary outcome was total FT for the procedure. Secondary outcomes included radiation exposure (entrance surface air kerma [ESAK] mGy). We also analyzed clinical and procedural predictors of FT and exposure. Mixed linear models accounting for clustering by surgeon were developed.

Result(s): Seventy-three procedures (5 surgeons) were included. The number of procedures per surgeon ranged from seven to 36. Forty-three percent were pre-stented. Thirty-one procedures were left side, 35 were right side, and seven were bilateral. Stones were treated in 71% of procedures (21% laser, 14% basket, and 65% laser/basket). Stone locations were distal ureter (11.5%), proximal/mid-ureter (8%), renal (69%), and ureteral/renal (11.5%). An access sheath was used in 77%. Median stone size was 8.0 mm (range 2.0-20.0). Median FT in the surgeon control group was 0.5 min (range 0.01-6.10) versus 0.55 min (range 0.10-5.50) in the technologist-control group ($p = 0.284$). Median ESAK in the surgeon control group was 46.02 mGy (range 5.44-3236.80) versus 46.99 mGy (range: 0.17-1039.31) in the technologist-control group ($p = 0.362$). Other factors associated with lower FT on univariate analysis included female sex ($p = 0.015$), no prior urologic surgeries ($p = 0.041$), shorter surgery ($p = 0.011$), and no access sheath ($p = 0.006$). On multivariable analysis only female sex ($p = 0.017$) and no access sheath ($p = 0.049$) remained significant. There was significant variation among surgeons ($p < 0.0001$); individual surgeon median FT ranged from 0.40 to 2.95 min.

Conclusion(s): Fluoroscopy time and radiation exposure are similar whether the surgeon or technologist controls fluoroscope activation. Other strategies to reduce exposure might focus on surgeon-specific factors, given the significant variation between surgeons. [Table presented]

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Status

Embase

Author NameID

Nelson, Caleb P.; ORCID: <http://orcid.org/0000-0001-7072-6120>

Institution

(Kokorowski) Children's Hospital Los Angeles, Los Angeles, CA, United States (Chow, Cilento, Kim, Kurtz, Logvinenko, MacDougall, Nelson) Boston Children's Hospital, Boston, MA, United States

Publisher

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395.

Editorial Comment on: Ureteroscopic Laser Lithotripsy: A Review of Dusting vs Fragmentation with Extraction by Matlaga et al.

Gomez-Nunez J.G.

Embase

Journal of Endourology. 32(1) (pp 7-9), 2018. Date of Publication: January 2018.

[Note]

AN: 620336715

PMC Identifier

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Institution

(Gomez-Nunez) Departamento de Urologia, Centro Universitario de Ciencias de la Salud

(CUCS), Universidad de Guadalajara, Guadalajara, Jalisco, Mexico (Gomez-Nunez)

Urologo/Endourologo, Hospital General Regional (HGR) 180, Instituto Mexicano Del Seguro

Social (IMSS) Delegacion Jalisco, Tlajomulco de Zuniga, Jalisco, Mexico

(Gomez-Nunez) Departamento de Urologia, Urologo/Endourologo, Instituto Jalisciense de Cancerologia, Secretaria de Salud Jalisco, Coronel Calderon 715, Col. El Retiro, Guadalajara, Jalisco 44280, Mexico

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396.

Intra-operative Postperfusion Micronephrolithotomy for Renal Allograft Lithiasis: A Case Report.

Favi E., Raison N., Zanetti S., Sampogna G., Montanari E., Ferraresso M.

Embase

Transplantation Proceedings. 50(10) (pp 3950-3953), 2018. Date of Publication: December 2018.

[Article]

AN: 2001385389

Increasing demand drives the expansion of criteria for kidney donation, and nephrolithiasis is now considered a relative contraindication. We report for the first time a case of intra-operative, postperfusion kidney allograft micronephrolithotomy. A 64-year-old man with end-stage renal disease secondary to Alport syndrome underwent primary deceased donor kidney transplantation at our center. Pre-operative ultrasound of the donor identified a 7-mm calculus in the anterior, lower pole calyx. The kidney was extra-peritoneally implanted in the right iliac fossa and reperfused homogenously. Stone retrieval with a flexible ureteroscope failed due to the narrow calyceal infundibulum. Instead, the calculus was removed using the micropercutaneous nephrolithotomy system under ultrasonographic guidance. The calyx was punctured using a 4.85 Fr needle and the stone was fragmented to dust using a Holmium laser. No bleeding was observed. The post-operative course was uneventful. Outpatient follow up demonstrated good

function of the graft which was stone free on ultrasound. Postperfusion micropercutaneous nephrolithotomy for kidney allograft calculi offers a safe and feasible option when pre-operative or intra-operative retrograde intrarenal surgery fails.

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Institution

(Favi, Ferraresso) Kidney Transplantation, Fondazione IRCCS Ca' Granda, Ospedale Maggiore Policlinico, Milan, Italy (Raison) MRC Centre for Transplantation, King's College London, London, United Kingdom

(Zanetti, Sampogna, Montanari) Urology, Fondazione IRCCS Ca' Granda, Ospedale Maggiore Policlinico, Milan, Italy

(Ferraresso) Department of Clinical Sciences and Community Health, University of Milan, Milan, Italy

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397.

Ureteroscopic Laser Lithotripsy: A Review of Dusting vs Fragmentation with Extraction.

Matlaga B.R., Chew B., Eisner B., Humphreys M., Knudsen B., Krambeck A., Lange D., Lipkin M., Miller N.L., Monga M., Pais V., Sur R.L., Shah O.

Embase

Journal of Endourology. 32(1) (pp 1-6), 2018. Date of Publication: January 2018.

[Review]

AN: 620336680

Introduction: Ureteroscopic laser lithotripsy is becoming the most commonly utilized treatment for patients with urinary calculi. The Holmium:YAG (yttrium aluminum garnet) laser is integral to the operation and is the preferred flexible intracorporeal lithotrite. In recent years, there has been increasing interest in examining the effect of varying the laser settings on the effectiveness of stone treatment. Herein, we review the two primary laser treatment approaches: dusting and fragmentation with extraction.

Method(s): We reviewed PubMed and MEDLINE databases from January 1976 through January 2017. All authors participated in the development of consensus definitions of dusting and fragmentation with extraction. The review protocol adhered to preferred reporting items for systematic reviews and meta-analyses (PRISMA) methodology.

Result(s): When the Holmium:YAG laser is used to treat stones, there are two parameters that can be adjusted: power (J) and frequency (Hz). In one treatment paradigm, which became termed "fragmentation with extraction," laser settings that relied on high energy and low frequency were used. Another paradigm, which became termed "dusting," utilized low energy and high frequency settings, which had the effect of breaking off exceedingly small fragments from the stone.

Conclusion(s): Both dusting and fragmentation with extraction approaches to ureteroscopic stone treatment are effective. In fact, there is little evidence that one approach is better than the other. However, each does have relative advantages and disadvantages, which should be considered. Although dusting tends to be associated with shorter procedure times and a lower risk of ureteral damage, this approach may place the patient at increased risk for future stone events should all of the resultant debris not be expelled from the collecting system. The active removal associated with fragmentation with extraction, in contrast, may provide for a more complete initial stone clearance.

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Status

Embase

Institution

(Matlaga) James Buchanan Brady Urological Institute, Johns Hopkins Medical Institutions, 600 North Wolfe Street, Park 221, Baltimore, MD 21287, United States (Chew, Lange) Department of Urologic Sciences, University of British Columbia, Vancouver, British Columbia, Canada (Eisner) Department of Urology, Massachusetts General Hospital, Boston, Massachusetts, United States

(Humphreys, Krambeck) Department of Urology, Mayo Clinic, Indianapolis, Indiana, United States
(Knudsen) Division of Urology, Department of Surgery, Ohio State University Medical Center, Columbus, Ohio, United States

(Lipkin) Department of Surgery and Urology, Duke University Medical Center, Durham, North Carolina, United States

(Miller) Department of Urologic Surgery, Vanderbilt University School of Medicine, Nashville, Tennessee, United States

(Monga) Cleveland Clinic Foundation, Cleveland, Ohio, United States

(Pais) Department of Urology, Dartmouth Hitchcock Medical Center, New Hampshire, United Kingdom

(Sur) Department of Surgery/Urology, UC San Diego, San Diego, California, United States

(Shah) Department of Urology, NYU, New York, NY, United States

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398.

Endoscopic Stone Measurement during Ureteroscopy.

Ludwig W.W., Lim S., Stoianovici D., Matlaga B.R.

Embase

Journal of Endourology. 32(1) (pp 34-39), 2018. Date of Publication: January 2018.

[Article]

AN: 620336678

Introduction: Currently, stone size cannot be accurately measured while performing flexible ureteroscopy (URS). We developed novel software for ureteroscopic, stone size measurement, and then evaluated its performance.

Method(s): A novel application capable of measuring stone fragment size, based on the known distance of the basket tip in the ureteroscope's visual field, was designed and calibrated in a laboratory setting. Complete URS procedures were recorded and 30 stone fragments were extracted and measured using digital calipers. The novel software program was applied to the recorded URS footage to obtain ureteroscope-derived stone size measurements. These ureteroscope-derived measurements were then compared with the actual-measured fragment size.

Result(s): The median longitudinal and transversal errors were 0.14 mm (95% confidence interval [CI] 0.1, 0.18) and 0.09 mm (95% CI 0.02, 0.15), respectively. The overall software accuracy and precision were 0.17 and 0.15 mm, respectively. The longitudinal and transversal measurements obtained by the software and digital calipers were highly correlated ($r = 0.97$ and 0.93). Neither stone size nor stone type was correlated with error measurements.

Conclusion(s): This novel method and software reliably measured stone fragment size during URS. The software ultimately has the potential to make URS safer and more efficient.

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Institution

(Ludwig, Stoianovici, Matlaga) Department of Urology, James Buchanan Brady Urological Institute, School of Medicine, Johns Hopkins University, 600 North Wolfe Street j Marburg 134, Baltimore, MD 21287, United States (Lim, Stoianovici) Robotics Laboratory, School of Medicine, Johns Hopkins University, Baltimore, Maryland, United States

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399.

Rapid ablation of large urinary stones using a novel, high peak power, thulium fiber laser.

Hardy L.A., Gonzalez D.A., Irby P.B., Fried N.M.

Embase

Journal of Endourology. Conference: 32nd Annual Meeting of the Engineering and Urology Society. Boston, MA United States. 32(3) (pp A18), 2018. Date of Publication: March 2018.

[Conference Abstract]

AN: 622517701

Introduction: Our laboratory is studying the Thulium fiber laser (TFL) as a potential alternative to the clinical gold standard Holmium: YAG laser for lithotripsy. The TFL wavelength of 1940nm is 4-5 times more strongly absorbed by water in tissue than the Holmium (Figure Presented) wavelength of 2120 nm, enabling TFL lithotripsy at lower energy per pulse. However, previously reported studies were limited by use of a TFL with peak power of only 70 W (35mJ / 500 ls). This required operation in "dusting" mode with energy of only 35mJ, compensated by high pulse rates of 300 Hz. In this study, a new TFL, capable of operation at up to 500 W peak power (7x higher than old TFL), up to 50 W average power, and pulse rates up to 2000Hz, was tested. We studied the efficacy of the laser for ablation of large urinary stones using three different techniques: dusting, fragmentation, and mixed mode (fragmentation then dusting).

Method(s): A compact, air-cooled, high-power, Thulium fiber laser (IPG Medical, Marlborough, MA) with 1940 nm wavelength was used (Figure 1A). A total of 23 uric acid stones (1.2-2.5 cm, 1.3-2.7 g) were separated into three groups with similar average mass (1.9 - 0.5 g, 1.9 - 0.5 g, and 1.9 - 0.4 g). Each group was exposed to average power of 10 W and pulse duration of 500 ls, using a 270-lmcore fiber. In Group 1 (Dusting), TFL was operated at 33 mJ and 300 Hz (n = 9). In Group 2 (Fragmentation), TFL was operated at 200 mJ and 50 Hz (n = 7). In Group 3 (Mixed Mode), the stone was fragmented at 200 mJ/50 Hz, followed by dusting at 33 mJ/300 Hz (n = 7). All experiments were performed with the fiber tip held manually in contact with the stone resting on a 2-mm-mesh sieve and immersed in a bath with saline flow. Ablation rates were determined by dividing initial stone mass by total treatment time.

Result(s): Procedure times measured 918 - 312 s, 855 - 245 s, and 436 - 118 s, and ablation rates were calculated to be 2.3 - 0.8 mg/s, 2.3 - 0.2 mg/s, and 4.4 - 0.8 mg/s for Groups 1, 2, and

3, respectively (Figure 1B). The combination of fragmentation and dusting provided two times faster stone ablation.

Conclusion(s): A novel, high peak power, TFL rapidly ablated large uric acid stones in fragmentation, dusting, and combined modes. Preliminary results with this new TFL provide higher ablation rates than reported in earlier TFL studies. Future studies will explore a wider range of stone types and laser parameters to determine if the TFL is a viable alternative to Holmium laser for treatment of large stones.

Status

CONFERENCE ABSTRACT

Institution

(Hardy, Gonzalez, Fried) Department of Physics and Optical Science, University of North Carolina at Charlotte, United States (Irby, Fried) McKay Department of Urology, Carolinas Medical Center, Charlotte, NC, United States

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400.

Minimally Invasive Management of Uroliths in Cats and Dogs.

Cleroux A.

Embase

Veterinary Clinics of North America - Small Animal Practice. 48(5) (pp 875-889), 2018. Date of Publication: September 2018.

[Review]

AN: 2001012804

Urolithiasis commonly affects cats and dogs. The American College of Veterinary Internal Medicine established guidelines for the treatment of uroliths that reflect modern techniques prioritizing minimally invasive procedures with an emphasis on prevention strategies to limit morbidity and mortality. Extracorporeal shockwave lithotripsy and endoscopic nephrolithotomy constitute some of the minimally invasive treatment modalities available for upper urinary tract uroliths. Cystoscopic-guided basket retrieval, cystoscopic-guided laser lithotripsy, and percutaneous cystolithotomy are minimally invasive options for the management of lower urinary tract uroliths. Following stone removal, prevention strategies are essential to help reduce morbidity and mortality associated with stone recurrence.

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Institution

(Cleroux) Department of Clinical Studies, School of Veterinary Medicine, University of Pennsylvania, 3900 Spruce Street, PA 19104, United States

Publisher

W.B. Saunders

Year of Publication

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401.

Retrograde intrarenal surgery using the single - use flexible ureteroscope uscope 3022

(Pusen™): Evaluation of clinical results.

Salvado J.A., Olivares R., Cabello J.M., Cabello R., Moreno S., Pfeifer J., Roman C., Velasco A.

Embase

Central European Journal of Urology. 71(2) (pp 202-207), 2018. Date of Publication: 2018.

[Article]

AN: 625063317

Introduction Reusable endoscopes have some limitations regarding their continued use. To sort out these problems, several disposable devices have appeared on the market. Our objective is to show our clinical results with a new digital flexible single-use ureteroscope. Materials and methods This study presents a prospective series of patients who underwent endoscopic surgery as treatment for renal stones using the digital disposable endoscope Uscope 3022TM.

Demographic, procedure and stone information were registered including surgery time, stone-free rate, need of ureteral catheterization and complications, among others. The behavior of the ureteroscope in terms of image quality and problems associated with flexibility and the working channel were also registered. Results A total of 71 procedures were included in the analysis. The mean age was 49.9 years old, with 70.4% of male patients. Mean stone size was 11.4 mm (4 to 40 mm). The most frequent stone location was in the lower calyces (28.2%). The stone burden was high (>2 cm) in 8.4% of patients. The mean surgical time was 56.6 minutes (15-180 min). In 94.4% of the cases, a laser was used with dusting parameters. The global stone-free rate (SFR) was 95.2%, but in the subgroups analysis SFR were significantly superior in stones less than 10 mm (97.9%) versus stones between 10 and 20 mm (94.5%) and greater than 20 mm (78.3%) ($p < 0.01$). The postoperative placement of double-J stents was required in 66.2% of patients. Two minor complications were recorded and they were related to the ureteral access sheath used.

There were no problems regarding the performance of the ureteroscope. Conclusions The clinical data observed in this series does not differ from the results traditionally obtained with other reusable devices. To our knowledge, this series is the first worldwide report evaluating the clinical behavior and results in humans of the Uscope 3022.

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Status

Embase

Institution

(Salvado, Olivares, Cabello, Pfeifer, Roman, Velasco) Universidad Finis Terrae, Santiago, Chile
(Salvado, Olivares, Cabello, Cabello, Moreno, Pfeifer, Roman, Velasco) Urology Department,
Clinica Santa Maria, Santiago, Chile

Publisher

Polish Urological Association (E-mail: urologiawroclaw@poczta.onet.pl)

Year of Publication

2018

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402.

Holmium:Yttrium-aluminum-garnet laser induced lithotripsy: In-vitro investigations on fragmentation, dusting, propulsion and fluorescence.

Eisel M., Strobl S., Pongratz T., Strittmatter F., Sroka R.

Embase

Biomedical Optics Express. 9(11) (pp 5115-5128), 2018. Article Number: #335764. Date of Publication: 01 Nov 2018.

[Article]

AN: 624872060

The fragmentation efficiency on Bego artificial stones during lithotripsy and the propulsive effect (via video tracking) was investigated for a variety of laser settings. A variation of the laser settings (pulse energy, pulse duration, repetition rate) altered the total application time required for stone fragmentation, the stone break up time, and the propulsion. The obtained results can be used to develop lithotripsy devices providing an optimal combination of low stone propulsion and high fragmentation efficacy, which can then be evaluated in a clinical setting. Additionally, the fluorescence of human kidney stones was inspected endoscopically in vivo. Fluorescence light can be used to detect stone-free areas or to clearly distinguish calculi from surrounding tissue or operation tools.

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Status

Embase

Institution

(Eisel, Strobl, Pongratz, Sroka) Laser-Forschungslabor, LIFE-Zentrum, University Hospital of Munich, Munich, Germany (Eisel, Strobl, Pongratz, Strittmatter, Sroka) Department of Urology, University Hospital of Munich, Munich, Germany

Publisher

OSA - The Optical Society (E-mail: custserv@osa.org)

Year of Publication

2018

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403.

Dual usage of a stone basket: Stone capture and retropulsion prevention.

Krocak T., Ghiculete D., Sowerby R., Ordon M., Lee J.Y., Pace K.T., Honey J.R.

Embase

Canadian Urological Association Journal. 12(8) (pp 280-283), 2018. Date of Publication: August 2018.

[Article]

AN: 623412760

Introduction: Stone migration during ureteroscopy (URS) for proximal ureteric calculi is a constant challenge. Several retropulsion prevention devices have been developed to optimize URS outcomes. Our technique involves capturing the stone within a four-wire Nitinol stone basket and then performing laser lithotripsy to dust the stone while it is engaged in the basket. The dusted fragments wash out with the irrigation fluid and once small enough, the remaining stone is removed intact.

Method(s): A retrospective chart review was performed of all proximal semi-rigid URS procedures for a solitary calculus (2000-2016). We compared our new technique introduced in 2010 to URS control procedures that did not use retropulsion prevention techniques or devices.

Result(s): One hundred and forty patients underwent URS for proximal ureteric calculi. Mean stone diameter was 9.3+/-3.4 mm, with similar impaction rate between both groups (44.1% vs. 43.1% control; p=n/s). The mean surgical procedure time was 53.3+/-17.9 minutes for the new technique and 65.2+/-29.2 minutes for the control group (p=0.005). Compared to the new technique, the control group had a higher rate of retropulsion (33.3% vs. 14.7%; p=0.01) and

required flexible URS more often to exclude or remove residual fragments (24.1% vs. 59.1%; $p=0.001$). Using the new technique, stone-free rates were higher (79.1% vs. 69.4%; $p=n/s$) and there was a lower likelihood of leaving residual fragments both <3 mm and ≥ 3 mm ($p=0.001$).

Conclusion(s): Our novel technique results in shorter operative times, lower retropulsion rates, and decreases postoperative residual stone fragments.

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Status

Embase

Institution

(Krocak, Ghiculete, Sowerby, Ordon, Lee, Pace, Honey) Department of Surgery, Division of Urology, University of Toronto, St. Michael's Hospital, Toronto, ON, Canada

Publisher

Canadian Urological Association (E-mail: josephine.sciortino@cua.org)

Year of Publication

2018

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404.

Application of systematic simulation training program in flexible ureteroscopy training.

Wang Z.-Y., Li L., Peng Y.-H., Wang Q., Ming S.-X., Fang Z.-Y., Gao X.-F.

Embase

Academic Journal of Second Military Medical University. 39(6) (pp 671-674), 2018. Article Number: 0258-879X(2018)06-0671-04. Date of Publication: 2018.

[Article]

AN: 623038067

Objective To evaluate the value of systematic simulation training program in the training of flexible ureteroscopy. Methods The training course was divided into three parts: shifting and

positioning of flexible ureteroscope, stone-grasping with basket and lithotripsy by holmium laser. Thirty trainees in the flexible ureteroscopy training class in our hospital in March 2017 were prospectively selected and divided into 2 groups: standardized systematic training group and autonomous training group, with 15 trainees in each group. The trainees in the standardized systematic training group gradually completed the training contents of the three parts in strict accordance with the contents and forms of the training courses using in vitro training dry simulator, spending 60 min in each course, while the trainees in the autonomous training group completed the training by self-study using in vitro training dry simulator for 180 min. After completing the training, the trainees in the two groups were assessed by the in vitro training dry simulator and pig animal surgery, and the examination items included the shifting and positioning of the flexible ureteroscope in the animal surgery system or the dry simulator, stone-grasping with basket, and lithotripsy by holmium laser. The operating time and global rating scale (GRS) score for the operation by tutor were compared between the two groups. Results The operating time for the shifting and positioning of the flexible ureteroscope in the animal surgery system or the dry simulator, stone-grasping with basket, and lithotripsy by holmium laser in the standardized systematic training group were significantly shorter than those in the autonomous training group (all $P<0.05$). The GRS scores for the above operations in the standardized systematic training group were higher than those in the autonomous training group (all $P<0.05$). Conclusion The systematic simulation training program divides the flexible ureteroscopy training course into three separate parts, improves the learning efficiency and enthusiasm of the trainees, helps the trainees quickly mastering the operation skills of flexible ureteroscopy, and shortens the learning curve.

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Status

Embase

Institution

(Wang, Li, Peng, Wang, Ming, Fang, Gao) Department of Urology, Changhai Hospital, Navy Medical University (Second Military Medical University), Shanghai 200433, China

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405.

Moses technology in a stone simulator.

Ibrahim A., Badaan S., Elhilali M.M., Andonian S.

Embase

Canadian Urological Association Journal. 12(4) (pp 127-130), 2018. Date of Publication: April 2018.

[Article]

AN: 621661037

Introduction: The objective of this study was to compare fragmentation efficiency of the conventional regular mode of holmium laser to the Moses contact mode on a stone simulator.

Method(s): The Lumenis Pulse™ P120 H holmium laser system, together with Moses D/F/L fibers were used to compare regular mode with Moses contact mode in a stone simulator model using flexible ureteroscopy with artificial stones. Efficiency of laser lithotripsy was measured by procedural time. Degree of stone retropulsion was also compared between regular and Moses modes using a Likert scale from 0 (no retropulsion) to 3 (maximum retropulsion).

Result(s): Using the stone simulator model, a significant reduction in stone retropulsion was noticed when comparing regular mode to the Moses contact mode (mean Grade 2.5 vs. Grade 1; $p < 0.01$). When compared with the regular mode, the Moses contact mode was associated with significantly shorter procedural time during fragmentation (13.9 vs. 9.1 minutes; $p \leq 0.01$) and dusting (9.3 vs. 7.1 minutes; $p \leq 0.01$). In addition, when compared with the regular mode, the laser pedal was pressed significantly less often with the Moses mode during fragmentation (86 vs. 43 times; $p < 0.01$) and dusting (50 vs. 26 times; $p < 0.01$). Moses contact mode was associated with significantly higher percentage of lasing vs. pausing when compared with the regular mode for both fragmentation (0.8 J/10 Hz) and pulverization (0.4 J/50 Hz) settings (both $p < 0.05$).

Conclusion(s): Using the stone simulator setup, Moses technology was associated with more efficient laser lithotripsy (shorter operative time) due to significantly reduced stone retropulsion.

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Status

Embase

Institution

(Ibrahim, Elhilali, Andonian) Department of Urology, Royal Victoria Hospital, McGill University Health Centre, Montreal, QC, Canada (Ibrahim) Department of Urology, Alhussain University Hospital, Al-Azhar University, Cairo, Egypt

(Badaan) Department of Urology, Rambam Health Care Campus, Haifa, Israel

Publisher

Canadian Urological Association (E-mail: josephine.sciortino@cua.org)

Year of Publication

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406.

Assessment of urology postgraduate trainees' competencies in flexible ureteroscopic stone extraction.

Aloosh M., Couture F., Fahmy N., Elhilali M.M., Andonian S.

Embase

Canadian Urological Association Journal. 12(2) (no pagination), 2018. Date of Publication: February 2018.

[Article]

AN: 620200288

Introduction: We aimed to assess flexible ureteroscopic stone extraction skill of urology postgraduate trainees (PGTs) at an Objective Structured Clinical Examination (OSCE) and to determine whether previous experience in the operating theatre or practice on the simulator correlated with performance.

Method(s): After obtaining ethics approval, PGTs from postgraduate years (PGYs) 3-5 were recruited from all four Quebec urology training programs during an OSCE. After a short orientation to the UroMentor™ simulator, PGTs were asked to perform Task 10 for 15 minutes, where two small stones from the left proximal ureter and renal pelvis were extracted using a

basket. Competency of PGTs in performing the task was assessed using objective assessment from the simulator and subjective evaluations using Ureteroscopy-Global Rating Scale (URS-GRS). Simulator performance reports and URS-GRS scores were analyzed.

Result(s): Thirty PGTs (9 PGY-3, 11 PGY-4, 10 PGY-5) participated in this study. PGTs had performed a mean of 55.9 semi-rigid and 45.7 flexible ureteroscopies prior to the study. Mean URS-GRS score of the participants was 20.04.4. Using norm-referenced method with three experts, cutoff score of 19 on the URS-GRS was determined to indicate competency. Sixty percent (18/30) of PGTs were competent. All eight PGTs who had practiced on the simulator were competent. Previous experience in the operating theatre and PGY level did not correlate with performance.

Conclusion(s): This study confirmed the feasibility of incorporating the UroMentor at OSCEs to assess competency of urology PGTs in ureteroscopic stone extraction skill. PGTs who practiced on the simulator scored significantly higher than those who did not practice; however, the software needs to be updated to improve its face validity and to include more complex tasks, such as holmium laser lithotripsy. Future studies with larger sample sizes and more complex cases are needed to confirm these results.

Status

Embase

Institution

(Aloosh, Couture, Fahmy, Elhilali, Andonian) Division of Urology, McGill University, Montreal, QC, Canada

Publisher

Canadian Urological Association (E-mail: josephine.sciortino@cua.org)

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Furs entrapment inside the access sheath during retrograde intrarenal surgery: Risk factors and management.

Mmdouh A., Gamal W.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A428), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626876486

Introduction & Objective: We prospectively evaluate the risk factors and how to deal with the FURS entrapment inside the access sheath.

Method(s): Data on a total of 117 consecutive patients who underwent RIR for renal stones were prospectively collected. The age of the patients was (34+/-6 years), the stone sizes was (1.7+/-0.5 cm), the Hounsfield unit of the stones was (920+/-180 HU), the stones was single in 88 cases and multiple in 29 cases. A fibrooptic FURS flex x2 and an access sheath 10/12 fr. was used in all cases. We follow the principle of stone dusting using low power (0.2 -0.5 j) high frequency (15 - 40 hz). The primary outcome was to evaluate the incidence of this complication and the predisposing factors.

Result(s): Access sheath was successfully inserted in all cases except in 6 cases where the ureter was tight in which a DJ stent was inserted for 2 weeks for passive dilatation. All the stone s was successfully managed with initial stone free rate 91%. Entrapment of the FURS inside the access sheath by gravels collection around it that hinder its in and out movement of was recorded in 13 cases (11%). Extraction of the FURS with difficulty followed by wash and suction of the gravels from the access sheath using 8 fr Ryle catheter was successfully done in 5 cases.

Removal of the access sheath with the FURS, clean it by high pressure wash around the FURS from above and below then reinsert it again was successfully performed in the remaining cases. The stone criteria in the entrapped cases were size >2 cmin 11 cases and the Hounsfield unit was >1000 HU in all cases.

Conclusion(s): Entrapment of the FURS with gravels inside the access sheath is a complication thatmust be suspected if the FURS in and out movement is hindered. It occurs most often when dusting a stone >2 cm with Hounsfield >1000 HU. Sometimes it is managed easily and sometimes we have to go out completely.

Status

CONFERENCE ABSTRACT

Institution

(Mmdouh, Gamal) Sohag University Hospital, Egypt

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408.

Comparing dusting efficiency of holmium laser lithotripsy with and without moses technology.

Keller E.X., De Coninck V., Chiron P.H., Doizi S.S., Traxer O.O.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A46), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626876403

Introduction & Objective: To compare dusting efficiency of holmium yttrium-aluminum-garnet (Ho:YAG) laser lithotripsy with and without Moses technology.

Method(s): All experiments were conducted ex vivo using a Boston Lithovue flexible ureteroscope for direct vision and fiber control, as well as a Lumenis P120H Ho:YAG laser generator with corresponding 200 µm laser fibers. Calcium-oxalate monohydrate (COM) or uric acid (UA) stones were placed into a 4.5 ml glass container. Each stone was submitted to laser lithotripsy for 2'30", using Lumenis' default dusting settings (0.2 J, 80 Hz, short pulse) either with or without Moses technology ("contact" mode) and a constant irrigation pressure of 40 cmH₂O. The resulting stone dust was separated from larger residual fragments based on the floating ability of stone particles. For this, dust from irrigation overflow was collected during lithotripsy, as well as during an additional irrigation phase of 2' after lithotripsy. Experiments were repeated five times for each stone composition. Differences between two groups were compared using Mann-Whitney U tests. Result(s): In the Moses and non-Moses group, initial mean stone weight was 180 mg (SD 48 mg) and 188 mg (SD 52 mg) for COM samples (p = 0.80), and 280 (SD 79) and 266 mg (SD 87) for

UA samples ($p = 0.95$), respectively. For COM stones, there was no significant difference in dust production between both groups (96 mg vs. 87 mg, $p = 0.53$). For UA stones, a trend towards a higher dust production was found in favor of the Moses group (126 mg vs. 99 mg, $p = 0.08$).

Conclusion(s): The dusting effect of Ho:YAG laser lithotripsy with Moses technology seems to differ between stone types. Moses may provide more efficient dusting for UA stones. Contrarily, Moses may not offer any advantage for COM stones. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Keller, De Coninck, Chiron, Doizi, Traxer) Sorbonne Universite, Groupe de Recherche Clinique sur la Lithiase Urinaire, AP-HP, Hopital Tenon, Paris F-75020, France

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Mary Ann Liebert Inc.

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409.

Novel retrieval deployment device allows for fast and ergonomically efficient single surgeon ureteroscopy.

Joice G., Ludwig W., Schwen Z., Gorin M., Matlaga B.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A45-A46), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626876350

Introduction & Objective: Ureteroscopic stone manipulation and retrieval typically requires two experienced individuals: one to drive the ureteroscope and a second to manipulate the stone basket or grasper. Recently, a retrieval deployment device (RDD) has been developed which allows the primary surgeon to activate the stone basket while simultaneously controlling the ureteroscope. We performed a study to characterize the procedure time and ergonomics of this approach.

Method(s): We performed a three-arm evaluation of the ergonomics of flexible ureteroscopy utilizing a simulation model of stone retrieval. In Arm 1, two experienced operators performed stone manipulation and retrieval, one managed the ureteroscope and the other managed the retrieval tool. In Arm 2, a single operator managed both the ureteroscope and retrieval tool. In the Arm 3, a single operator managed the ureteroscope conventionally, but utilized the novel RDD (EmPower™, Boston Scientific, Marlborough, MA) (Figure) to control the retrieval tool. Fifteen tasks were performed for each arm and median procedure time was calculated.

Electromyography was used to compare and quantify cumulative muscular workload (CMW) and average muscular work per second (AWS) of the right and left thenar, flexor carpi ulnaris (FCU), extensor carpi ulnaris (ECU), biceps, triceps, and deltoid muscles.

Result(s): Median procedure time was significantly improved with the RDD when compared to single surgeon URS (29.4 vs. 51.3 seconds, $p < 0.05$). Two surgeon URS also was significantly faster than single surgeon URS (27.9 vs. 51.3 seconds, $p < 0.05$). CMW was similar between RDD and two surgeon URS but both had decreased CMW across all muscle groups compared to single surgeon URS ($p < 0.01$). AWS was overall similar between RDD and two-surgeon URS across all muscle groups. RDD had significantly improved AWS compared to single-surgeon URS specifically in the thenar, FCU, and ECU muscles (<0.05) of the dominant arm.

Conclusion(s): The novel RDD, as tested, permitted a single surgeon to perform flexible ureteroscopy with stone manipulation and retrieval using less muscular workload than single surgeon URS and similar workload to two surgeon URS. Task completion time was also improved with RDD over the single surgeon model and similar to the two surgeon model.

Status

CONFERENCE ABSTRACT

Institution

(Joice, Ludwig, Schwen, Gorin, Matlaga) United States

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410.

Clinical relevance of the bacteria spread into the irrigation fluid during endourological procedures: A novel tool to guide appropriate postoperative antibiotic management?.

De Lorenzis E., Boeri L., Gallioli A., Fontana M., Zanetti S., Palmisano F., Luzzago S., Sampogna G., Longo F., Colombo R., Arghittu M., Piconi S., Salonia A., Albo G., Montanari E.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A210-A211), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626876240

Introduction & Objective: The risk of infections after endourological procedures for lithiasis is associated with positive stone cultures (SC). The presence of bacteria colonizing stones and the release of endotoxins during fragmentation may be the explanation. We assess the correlation between urine culture during stone fragmentation (SFUC), bladder culture (BUC), renal pelvic culture (RPUC) and SC; and their association with the risk of systemic inflammatory response syndrome (SIRS).

Method(s): The study included 71 consecutive patients who underwent percutaneous nephrolithotomy (PCNL, n = 43) or retrograde intrarenal surgery (RIRS, n = 28) from January 2017 to September 2017. Patients underwent a preoperative BUC. Samples for RPUC were obtained by renal catheterization. Stone fragments and irrigation fluid sample during fragmentation were sent for culture. We analysed concordance between cultures and association with SIRS.

Result(s): Overall, mean (SD) age was 54.1 (15.1) years and mean stone size was 15.7 (7.4) mm. Thirteen patients (18.3%) had positive BUC and received specific antibiotic treatment prior to surgery. Tab.1 shows distribution of positive cultures. Concordance between SFUC and SC species was found in 14/15 (93.3%) cases. The most frequently agents were *E. faecalis* and *E.coli*. SFUC predicts positive SC with 78.9% sensitivity, 98.1% specificity and a positive

predictive value (PPV) of 93.8%. SFUC predicts the organism in SC with 82.4% sensitivity, 96.3% specificity with a PPV of 87.5%. SIRS occurred in 13 (18.3%) patients, sepsis in 3 (4.2%). All blood cultures revealed the same agent found in SC and SFUC. Patients who developed SIRS had a higher rate of positive SFUC ($p = 0.03$) and SC ($p = 0.015$) than those without SIRS, but this was not the case for BUC and RPUC.

Conclusion(s): The bacteria spread into the irrigation fluid is clinically relevant because it has high microbiological concordance with SC and is associated with higher risk of SIRS than patients with positive BUC and RPUC. This novel tool could be used to guide appropriate postoperative antibiotic treatment when a SC could not be obtained (e.g. small calculi or complete dusting).

(Table Presented).

Status

CONFERENCE ABSTRACT

Institution

(De Lorenzis, Boeri, Gallioli, Fontana, Zanetti, Palmisano, Luzzago, Sampogna, Longo, Colombo, Arghittu, Piconi, Salonia, Albo, Montanari) Fondazione IRCCS Ca' Granda-Ospedale Maggiore Policlinico, Department of Clinical Sciences and Community Health, University of Milan, Milan, Italy

Publisher

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411.

Use of dormia basket to guard against stone retropulsion : Assesment and outcome.

Tawfik E., Fathelbab T., Abdelhamid A., Galal E., Ali A., Anwar A.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A234-A235), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626876134

Introduction & Objective: Ureteroscopic lithotripsy is considered as the first line treatment for ureteral stones that fail to respond to medical expulsive therapy or SWL. During ureteroscopic lithotripsy, possibility of stone retropulsion or upward migration limit the success rate to a minor extent, to guard against this problem, many devices were used as a solution to this problem. We used the basketed stone entrapment on purpose to avoid proximal stone migration during ureteroscopic pneumatic lithotripsy. Our aim is to evaluate the efficacy and safety of a novel benefit of the dormia basket by using it on purpose to guard against proximal stone migration.

Method(s): Our retrospective study was conducted between January 2015 and March 2017 at Minia university hospital. 282 patients who underwent ureteroscopic removal of ureteric stones were included in the study. Patients were categorized into two groups; group 1 (162 patients) in whom basketed stone entrapment was used to prevent stone migration, and group 2 (120 patients) served as control group in whom no additional anti-retropulsion devices were used. Retropulsion was considered when stone ≥ 5 mm migrates to the kidney.

Result(s): This study included 282 patients. The patients were divided into two groups, group 1 included 162 patients assigned as treatment group, and group 2 included 120 patients assigned as control group. The mean stone burden was 13.1 ± 4.2 , ranging from 6.5-16 mm, while it was 13.8 ± 3.5 in control group with no statistically significant difference ($P = 0.7$). Lower ureteric stones were 64.2% and 63.3%, while upper ureteric stones were 13.6% and 13.3% respectively.

Calcium oxalate stones were the predominant stone composition (52.5%). We recorded a significant difference regarding the operative time, with mean operative time 58.3 ± 12.4 and 50.9 ± 11.2 in both groups respectively. Retropulsion rate (fragments of ≥ 5 mm) showed a significant difference among both groups recording 1.2% (2 patients) in group 1, those patients were underwent SWL compared to 30 cases (25%) in the control group, in whom SWL was done for 21 patients, and 9 patients referred to flexible ureteroscopy. Minor mucosal lacerations were recorded in 16.6% and 14.1% in group 1 and group 2 respectively. In group 1 we recorded 4 cases in which inadvertently, wires of the dormia were torn without any hazards to the ureter.

Conclusion(s): We concluded that using on purpose basketed stone entrapment during ureteroscopic pneumatic lithotripsy is feasible, efficient and reproducible tool in preventing proximal stone migration with minimal morbidity, and with minimal or no extra cost.

Status

CONFERENCE ABSTRACT

Institution

(Tawfik, Fathelbab, Abdelhamid, Galal, Ali, Anwar) Faculty of Medicine, Minia University, Egypt

Publisher

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412.

Cost-effectiveness of dusting vs. basketing intrarenal stones.

Ursiny M., Yaghoubian A., Humphries M., Chew B., Monga M., Krambeck A.E., Sur R.L., Miller N.L., Chang Y., Knudsen B.E., Matlaga B., Shah O., Pais V., Eisner B.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A291-A292), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626876132

Introduction & Objective: To assess the cost-effectiveness of ureteroscopic laser fragmentation techniques for the treatment of renal stones using a decision analysis model.

Method(s): Outcomes data from a prospective trial of "dusting" versus "basketing" trial performed by the EDGE consortium were utilized. A decision analysis model was constructed to compare the cost-effectiveness of two methods of ureteroscopic lithotripsy: dusting stones completely versus fragmentation with basket removal. For basketing procedure costs, a basket, ureteral stent, and ureteral access sheath were used for each procedure; for dusting costs, a ureteral stent was used in 16% of procedures and there was no basket use. Expected value calculations with Markov modeling and sensitivity analysis was used to determine the optimal method based on overall cost-effectiveness inclusive of equipment, time, secondary costs from complications, emergency department visits, hospital readmission, and reinterventions. Cost of operating room disposables were obtained from manufacturers. Costs of emergency department visits,

readmissions, immediate and delayed re-interventions were calculated based on published figures from the literature and carried out to 3 years post-operatively.

Result(s): One hundred fifty nine patients were included in the study-84 ureteroscopy with dusting, 75 ureteroscopy with basketing. Decision analysis modeling demonstrated that on a perprocedure basis, dusting and basketing procedures had average costs of \$6,324 and \$7,667, respectively. The difference in cost for the 2 procedures was largely driven by differences in operative time (mean operative time for basketing = 67 min, mean operative time for dusting = 37 min). This represents an estimated savings of \$1343 per procedure when using the dusting technique.

Conclusion(s): Our decision analysis model demonstrates superior cost-effectiveness for ureteroscopy with dusting compared to ureteroscopy with basketing for intrarenal stones. The costsavings are primarily due to a substantially shorter operative time. Based on these findings, careful stratification and selection of stone patients may enable surgeons to improve costeffectiveness of ureteroscopic lithotripsy for intrarenal stones.

Status

CONFERENCE ABSTRACT

Institution

(Ursiny, Yaghoubian, Humphries, Chew, Monga, Krambeck, Sur, Miller, Chang, Knudsen, Matlaga, Shah, Pais, Eisner) United States

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413.

Dusting efficiency comparison between moses technology of ho:yag laser and super pulse thulium fiber laser.

De Coninck V., Keller E.X., Chiron P.H., Kovalenko A., Vinnichenko V., Traxer O.O.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A42-A43), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626876117

Introduction & Objective: At present, the Ho:YAG laser is the most commonly used laser for treating urolithiasis. A new technology of the Ho:YAG laser - Moses technology - was designed to increase ablation efficiency and to reduce stone retropulsion. Recently, a thulium fiber laser (TFL) has been suggested as an alternative laser source, with a potential for higher ablative efficiency and lower retropulsion. The aim of this study was to compare the efficiency of stone dusting between a Ho:YAG laser with Moses technology and a Super Pulse TFL.

Method(s): A Super Pulse TFL generator was compared to a Ho:YAG laser generator with Moses technology. 200 μ m fibers were used in all experiments. Laser lithotripsy was performed with a flexible ureteroscope (Pusen) for direct vision and fiber control. Uric acid stones were used in this study. Irrigation pressure was 40 cm H₂O. Lithotripsy was performed in a specially constructed vessel of 13mm in diameter, with 2mm holes drilled in the walls at a height of 40mm to allow collection of stone dust from irrigation overflow. The laser parameters for both systems were 0.2 J and 80 Hz (16 W). Lithotripsy was performed during 2'30". After lithotripsy, the solution from the outer cuvette was filtered through filter paper with a pore size of 2 μ m allowing stone dust collection. The weight of stone dust was calculated as the difference between weight of the dried filter with the stone dust and the initial weight of the filter. Experiments were repeated 5 times.

Result(s): Initial stone mass was 210 $\pm$ 24mg. The weight of stone dust after lithotripsy was 69 $\pm$ 32mg for Ho:YAG laser lithotripsy with Moses technology and 138 $\pm$ 25mg for the Super Pulse TFL.

Conclusion(s): The Super Pulse TFL produced twice as much stone dust as the Ho:YAG laser with Moses technology. When these promising results are confirmed in future studies, the Super Pulse TFL may be able to significantly reduce operating times.

Status

CONFERENCE ABSTRACT

Institution

(De Coninck, Keller, Chiron, Kovalenko, Vinnichenko, Traxer) Sorbonne Universite, Groupe de Recherche Clinique sur la Lithiase Urinaire, AP-HP, Hopital Tenon, Paris F-75020, France

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414.

Ureteroscopic holmium laser lithotripsy using the Moses technology.

Ghani K.R., Aldoukhi A.H.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A496-A497), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626876035

Introduction & Objective: Advances in pulse modulation during holmium laser lithotripsy has led to the development of the "Moses technology" in which the laser emits part of the energy to create an initial bubble, and the remaining energy is discharged once the bubble is formed so that it can pass through the already formed vapor channel. A recent preclinical study demonstrated better ablation efficiency when using the Moses mode compared to a regular holmium mode. The aim of this video is to outline the technical capabilities of the Moses technology in treating renal and ureteral stones.

Method(s): We present two cases of renal stones and one distal ureteral stone treated using a 120W holmium laser (P120, Lumenis, San Jose, CA) with the Moses technology. Moses has two distinct modes - "Contact" and "Distance" optimized for operation at a distance of around 1mm, and at 2 to 3mm from the stone surface, respectively. For the renal stones, we used dusting settings of low pulse energy and high frequency (LoPE-HiFr) at 0.4 to 0.5 J and 70- 80 Hz utilizing Moses "Contact" and "Distance" modes, while for the ureteral stone we used fragmentation of 1 J x 8Hz on "Contact" mode. A 230 um Moses ball-tip laser fiber was used for all cases.

Result(s): In the first renal stone case, stone dusting with Moses Contact mode followed by noncontact laser lithotripsy (popcorning) in the calyx at a setting of 0.5J x 80Hz resulted in complete stone clearance (post-operative CT showed zero fragments). The second renal stone case required a hybrid technique with predominantly dusting followed by basket retrieval, utilizing a combination of Moses Contact and Distance modes. Activating the Moses Contact mode for fragmenting the ureteral stone demonstrated significant reduction in retropulsion and stone migration.

Conclusion(s): In our early experience, the Moses technology allows utilization of a Contact mode that facilitates energy ablation, which can be helpful when dusting large renal stones in a single stage. For fragmentation, Moses Contact mode can reduce retropulsion, and is advantageous for treating ureteral stones. Further studies are needed to better understand the safety aspects, especially Distance mode when working in the ureter.

Status

CONFERENCE ABSTRACT

Institution

(Ghani, Aldoukhi) University of Michigan, United States

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415.

Outcomes of kidney stone treatment using the avicenna roboflex urs system: A single center institutional experience.

Charalampogiannis N., Klein J., Fiedler M., Gozen A., Weiss H., Rieker P., Scheitlin W., Achinas S., Rassweiler J.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A41), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626875992

Introduction & Objective: To evaluate our experience in retrograde intrarenal surgery using the Avicenna Roboflex System and stratify intra- and postoperative complications.

Method(s): From June 2014 until December 2017 a total of 208 patients (123 men and 85 women) suffering from nephrolithiasis underwent robotic retrograde intrarenal stone treatment in our Center using the Avicenna Roboflex robotic device. We analyzed the preoperative and the operative data from the patients. Intraoperative complications were recorded according to modified Satava classification system and postoperative complications based on Clavien classification.

Result(s): The mean age was 51.89 yr (range: 17-82 yr) and the mean BMI 28.1 (range: 17.6-49.5). The mean stone burden was: 2957mm³ (range: 400-4100mm³). The mean Hounsfield in CT Kidney was 736 (range: 276-1423). The mean number of stones in the kidney was 1.98 (range: 1-9). The majority of patients (98%) were pre-stented. We used access sheath in all patients. 87.01% of patients (181) underwent Stone Fragmentation. The statistical analysis from the operative parameters showed that the mean operative time was 85.21 min. (range: 10-263), the mean robot docking time 4,72 min (range: 1-17), the mean console time 68.60 min (10-229) and mean console time to Stone contact was 5.91 min (30 sec-20 min). Mean fragmentation time was 22.49 min. (range: 1-129 min.) corresponding to a mean Stoneclearance rate 44.8mm³/min. Mean remove fragments from the Kidney with basket was 20.49 min (range: 1-125). The overall incidence of intraoperative complications was 9.13%. The most common complications were mucosal injury (4.8%) and Stein migration (1.92%). According to modified Satava classification system, there were 6.73% grade 1; 1,44% grade 2a; 0,9% grade 2b. In relation with postoperative complications 2 patients died; one due to severe sepsis and the other on 3rd postoperative day time due to Myocardial Infarction. 4 patients developed complications of Grade II (1 patient subcapsular Kidney Hematoma, 1 blood transfusion and 2 fever without Sepsis) and 1 complication Grade IIIB (urine leakage-U/S guided drainage). After treatment the stone free rate (SFR) was 94%. DJ stents were placed in 199 patients, 91 DJ-stents were removed in the first postoperative day, 108 DJ-stents in a short period of 7 to 14 days.

Conclusion(s): Roboflex Avicenna provides a suitable and a safe platform for robotic FURS. The new robotic device provides a non exhausting environment for the surgeon especially during long FURS. Ongoing refinement is likely to expand the role of this technology in retrograde intrarenal surgery in the near future.

Status

CONFERENCE ABSTRACT

Institution

(Charalampogiannis, Klein, Fiedler, Gozen, Weiss, Rieker, Scheitlin, Achinas, Rassweiler) SLK
Kliniken am Gesundbrunnen, Department of Urology, Germany

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Mary Ann Liebert Inc.

Year of Publication

2018

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[SFX](#)

416.

Lithovue use during flexible ureterorenoscopy increases immediate stone free rate and decreases operative time.

Tsirakas K., Lazarou L., Markopoulos T., Berdempes M., Papatsoris A., Dellis A., Varkarakis I., Skolarikos A.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A470-A471), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626875988

Introduction & Objective: To compare the stone free rate and the duration that flexible ureterorenolithotripsy (fURS) lasts when a fiberoptic (FO) or a single use digital flexible ureteroscope (SUDU) were used.

Method(s): Twenty-two patients who underwent fURS with the LithoVue SUDU were paired matched with 38 patients who underwent fURS with the Flex-X2 Karl Storz FO ureteroscope. The main aim of the study was to evaluate whether the new generation scope resulted in a higher immediate stone free rate (SFR) and/or in a shorter operation time.

Result(s): The mean stone size treated was 12.2mm (SD: 4.8). No difference in mean stone size was found between the two groups (11.7mm vs 12.4mm; $p = 0.608$). There was no difference in patient sex ($p = 0.788$) and comorbidities ($p = 0.683$), the kidney treated ($p = 1.000$) or the location of the stone into the pelvicalyceal system ($p = 0.980$). The patients were equally pre-stented (9/13, $p = 0.604$) while hydronephrosis when existed did not differ between the two groups (11/15, $p = 0.589$). An access sheath of similar size was equally used in both groups (30/35, $p = 0.872$) and the size of the laser fibers used ($p = 0.645$) as well as the mean settings of the laser energy applied ($p = 0.994$) did not differ between the two groups. Basketing of the residual fragments was also equally applied among the patients (8/13, $p = 0.981$). Stonefree rate at the first postoperative day was higher in patients treated with the LithoVue (14/22) compared to patients treated with the Flex-X2 (16/38) ($p = 0.04$). Patients treated with the digital scope had a 10 min shorter operation time compared to patients treated with the fiberoptic instrument (52.27 min vs 62.39; $p = 0.02$). There was no difference in postoperative complication rate (1 vs 6 patients; $p = 0.246$).

Conclusion(s): The single use digital ureteroscope increases the immediate postoperative stone-free rate and does it in a shorter operative time.

Status

CONFERENCE ABSTRACT

Institution

(Tsirkas, Lazarou, Markopoulos, Berdempes, Papatsoris, Dellis, Varkarakis, Skolarikos) 2nd Urology Clinic National and Kapodistrian, University of Athens, Greece

Publisher

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2018

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The role of the chemical analysis of the fluid containing stone dust which obtained perioperatively for predicting stone analysis results in minimal invasive stone surgery of the upper urinary system.

Gunseren K., Arslan I., Kiliccarslan H., Cxicek M., Kaygisiz O.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A231), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626875965

Introduction & Objective: The ureterorenoscopic approach for renal and ureteral stones has been used increasingly in recent years in the treatment of stone, and stone can not be obtained for analysis in the vast majority of patients. The purpose of this study is; investigate to fluid containing stone dust which obtained perioperatively for the role of predicting stone analysis results in patients treated with ureterorenoscopic approach.

Method(s): In our clinic, 109 patients treated with ureterorenoscopic approach for stone disease were included. Perioperative fluid containing stone dust was taken with a 10ml syringe. At the end of the operation, ureterorenoscope was removed while 3mm fragment was taken by basket catheter. Chemical analysis of the fluid containing stone dust was performed, the stone fragment was examined at a separate center with X-Ray Diffraction (XRD) technique. Both centers did not know the results of the other center. The sensitivity, specificity, and accuracy of the tests were calculated. The consistency between XRD and chemical analysis results was measured with Cohen's Kappa Coefficient.

Result(s): Sixteen patients were excluded from the study because no stone fragment could be obtained. Struvite stones were found 100%, calcium oxalate stones and uric acid stones 99%, "calcium oxalate + uric acid" stones 98%, "calcium oxalate + calcium phosphate stones" 94% accuracy. In evaluating the density of the stones; The density of "calcium oxalate + uric acid" stones was significantly lower than the "whewellite" group. However, stone densities did not provide additional information about the stone structure, apart from the information we obtained by chemical analysis.

Conclusion(s): After ureterorenoscopic laser lithotripsy treatment of upper urinary system stone disease, the chemical analysis of the fluid which obtained perioperatively in patients who can not obtain a stone fragment, determines stone structure with high accuracy. The fluid containing stone dust, can be easily and perioperatively obtained from all patients so chemical analysis is superior to analyzes made with stone fragments. (Table Presented).

Status

CONFERENCE ABSTRACT

Institution

(Gunseren, Arslan, Kilicarslan, Cxicek, Kaygisiz) Uludag University, School of Medicine,
Department of Urology, Turkey

Publisher

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Year of Publication

2018

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418.

Thulium fiber laser for lithotripsy of large renal stones: Initial experience.

Keller E.X., De Coninck V., Chiron P.H., Doizi S.S., Guseynov M., Ergakov D.V., Martov A.G.,
Traxer O.O.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris
France. 32(Supplement 2) (pp A495), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626875884

Introduction&Objective: The Thulium fiber laser may present as a valuable alternative to Holmium laser for lithotripsy. Its operating wavelength is near the water absorption peak, which results in a higher ablation efficiency at low pulse energy compared to Holmium lithotripsy. Pulsed energy can be delivered through silica fibers as small as 50 microns, which may allow for miniaturization of the endourological instruments. Also, pulse shape can easily be modulated, because the Thulium fiber laser is pumped by a diode laser, which in turn can be electronically modulated to adapt its temporal beam profile. In this video we present the applicability of Thulium fiber laser for lithotripsy of large renal stones.

Method(s): Three cases operated with the SuperPulse Thulium fiber laser at the Martov's Clinic in Moscow, Russia were included in this video. Local ethical committee approval was warranted.

Result(s): For the first case, it took a total of 40 minutes of operative time for lithotripsy of five stones between 6 to 12 mm. For the second case, it took a total of 24 minutes of operative time for lithotripsy of a 15mm renal stone. For the third case, it took 23 minutes for stone dusting and 14 minutes for pop-corning, resulting in a total operative time of 37 minutes for lithotripsy of a 30 millimeters renal stone.

Conclusion(s): From this initial experience, we conclude that the SuperPulse Thulium fiber laser is applicable for lithotripsy of large renal stones in humans. At low pulse energy, it achieves effective stone dusting. Operative time for lithotripsy was less than one hour, including a case with a 30mm stone and a case with multiple stones up 10 mm. Future studies are warranted to define optimal lithotripsy settings and further detail safety profile of the SuperPulse Thulium fiber laser.

Status

CONFERENCE ABSTRACT

Institution

(Keller, De Coninck, Chiron, Doizi, Guseynov, Ergakov, Martov, Traxer) Sorbonne Universite, Groupe de Recherche Clinique sur la Lithiase Urinaire, AP-HP, Hopital Tenon, Paris F-75020, France

Publisher

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2018

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419.

Evaluation of the endo-uro trainer for ureteroscopy training.

Palaneer S., Aydin A., Al Janabi H., Macchione N., Al-Jabir A., Khan S., Dasgupta P., Ahmed K.
Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris
France. 32(Supplement 2) (pp A179), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626875720

Introduction & Objective: Reduction in working time hours have limited the use of Operating
Room (OR) based surgical training and has resulted in an increased interest in simulationbased
training. Several simulator models with different fidelities have been introduced. The aim of the
study is to evaluate the face, content and construct validity for the Endo-Uro Trainer (SAMED,
Dresden, Germany), a new bench model for Endourology.

Method(s): Novices (n = 29), intermediates (n = 18) and experts (n = 20) with a mean age of 30.1
were recruited to participate in the study. Novices were randomly allocated to Groups A and B
using a randomiser tool. All participants received didactic teaching, following which Group A
performed a set procedure using the Uro-Scopic Trainer (Limbs and Things, Bristol, UK) and
Group B used the SAMED Endo-Uro trainer. They were then crossed over and each group
performed the same procedure with the other simulator. Participants repeated the procedure
twice on each model. The intermediate and expert groups performed the procedure on the Endo-
Uro trainer only. A semi-rigid ureteroscopy and mid-ureteric stone basketing was performed by
all. Participants were scored using the Objective Structured Assessment of Technical Skills
(OSATS) tool and the timings were analysed. All participants were invited to a final questionnaire,
which used a 5- point Likert scale to demonstrate face and content validity.

Result(s): Face validation revealed a realism rating in all aspects with mean Likert rating of 4.29/5
(+/-0.72). Construct validity in time taken was demonstrated between novices and experts (mean
281.4 secs +/-74.9 vs 204.9 +/- 33.2, p = 0.0015) as well as between intermediates and experts
(mean 245.4s +/- 59 vs 204.9 +/- 33.2, p = 0.0120). Construct validity was also demonstrated in
OSATS rating between all 3 participant groups. Comparison of Group B participants'
performances showed statistically significant improvement in time (373.5s vs 224.3, p = 0.0012)
and OSATS score (15.64 vs 18.09, p = 0.0439) after the cross over. Group A and Group B post
cross over performances showed significant difference in time (p = 0.0025) but difference in
OSATS was not statistically significant (p = 0.0984).

Conclusion(s): The study demonstrated the face, content and construct validity for the Endo-Uro
trainer. However, compared to the well-validated Uro-Scopic trainer, a larger study is required to
demonstrate better results using the Endo-Uro trainer.

Status

CONFERENCE ABSTRACT

Institution

(Palaneer, Aydin, Al Janabi, Macchione, Al-Jabir, Khan, Dasgupta, Ahmed) Faculty of Life Sciences and Medicine, King's College London, United Kingdom

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420.

Exploring thermodynamics of kidney stone compounds to optimize calcium oxalate kidney stone dissolution and crystallization.

Grooms N., Bird N., Arce S., Bird V.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A11-A12), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626875300

Introduction & Objective: Prevalence of kidney stones is increasing throughout the world. Laser lithotripsy via ureteroscopy is performed to break up the stones into 0.5 mm, which may remain behind. This "dust" may become a nidus for crystal deposition and lead to recurrence of kidney stones. Our aim is to explore thermodynamic theories to aid in determination of ideal conditions for crystallization and dissolution of calcium oxalate kidney stone fragments.

Method(s): Based on the study by Thongboonkerd et. al, dissolution agent and chelator will be the solution of interest. We use the Gibbs equation ($\Delta G = \Delta H - T\Delta S$) to calculate and predict ideal conditions for stone dissolution. Calcium oxalate crystals were formed by combining salts containing both calcium and oxalate in accordance with the chemical equation: $\text{Ca}^{2+} + \text{C}_2\text{O}_4^{2-} \rightarrow \text{CaC}_2\text{O}_4$. Dissolution agent sodium citrate and EDTA chelator are optimal compounds

for calcium oxalate dissolution. For creation of a stone crystal model, OPN at physiologic pH, protein matrix (lab made Human Placental Matrix-HPM), and calcium oxalate were combined in artificial urine.

Result(s): The measured dissolution enthalpies of the various calcium oxalate hydrates were determined via calorimetric experiments observed. In water, calcium oxalate monohydrate requires 21.1 kJ/mol for dissolution, and the formation of sodium oxalate produces approximately 16.6 kJ, both at 25 C. Calcium- EDTA produces 50 kJ of energy in TRIS buffer at pH 7.5 which provides the required energy for breaking calcium oxalate and hydrogen bonds. The isoelectric point of OPN is 4.7, thus at pH close to 6.5, free calcium ions will primarily bind OPN which will result in less COM crystallization observed under microscopy. Crystals were observed under fluorescent and light microscopy. HPM grown crystals promoted crystal growth over its matrix. With no OPN present, there is more crystal growth compared to the crystals grown in the presence of OPN which may indicate crystallization suppression activity by OPN.

Conclusion(s): Theoretically, ideal dissolution agent was found to be sodium citrate with EDTA on TRIS at physiologic pH, due to its favorable thermodynamic interactions. Osteopontin, will either enhance or inhibit stone formation depending on the pH related to its isoelectric point.

Crystallization occurred more readily at low pH for the agents used.

Status

CONFERENCE ABSTRACT

Institution

(Grooms, Bird, Arce, Bird) University of Florida, United States

Publisher

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2018

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Fragments and dust after holmium laser lithotripsy with or without "moses technology": Are they really different?.

Keller E.X., De Coninck V., Doizi S.S., Bazin D., Daudon M., Traxer O.O.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A351), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626875106

Introduction & Objective: Growing enthusiasm for laser dusting techniques has emerged over the last years. It is unknown whether alterations of crystalline stone constitution may be found after holmium lithotripsy and whether "Moses technology" may produce differing stone breakdown products. This study evaluates whether residual fragments and stone dust produced during holmium laser lithotripsy differ based on morpho-constitutional analyses.

Method(s): Seven constitutional stone types were analyzed: calcium oxalate monohydrate and dihydrate (COM/COD), uric acid (UA), carbapatite (CA), brushite (BRU), magnesium ammonium phosphate (MAP) and cystine (CYS). Dusting holmium lithotripsy (0.2J, 40Hz, long pulse) was performed ex vivo during 5 minutes either with or without "Moses technology". A 200µm laser fiber was continuously moved over stone surface by the use of a flexible ureteroscope. Floating stone dust particles were collected from irrigation overflow, thus separating them from residual fragments (RF). Air-dried samples were analyzed by stereoscopic microscopy, scanning electron microscopy and Fourier transform infrared spectroscopy.

Result(s): Stone dust particles from COM, UA and CYS were found to have the same crystalline organization as in RF, without any evidence for constitutional changes. In contrast, stone dust from COD, CA, BRU and MAP showed distinctivemorpho-constitutional changes. These included conversion of COD towards COM, changes in CA spectra towards an amorphous phase, changes of MAP towards a differing amorphous and crystalline phase and the appearance of hydroxyapatite on BRU fragments. Changes were more pronounced after Moses lithotripsy.

Conclusion(s): Depending on major crystalline constituents, stone dust either conserves all attributes found in larger RF or shows important changes in crystalline organization. Moses technology seems to produce more pronounced changes. These findings suggest a photothermal effect of holmium laser on stones.

Status

CONFERENCE ABSTRACT

Institution

(Keller, De Coninck, Doizi, Bazin, Daudon, Traxer) Sorbonne Universite, Groupe De Recherche Clinique sur La Lithiase Urinaire, AP-HP, Hopital Tenon, Paris F-75020, France

Publisher

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2018

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422.

Moses technology improves the lithotripsy of ureteral stones: Initial experience from China.

Gao X., Peng Y., Li L., Liu M., Sun Y.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A487-A488), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626875097

Introduction & Objective: To study the feasibility, safety and efficacy of Moses technology in Holmium laser combined with semi-rigid and flexible ureteroscopy in the treatment for proximal ureteral and renal stones ≤ 2.0 cm.

Method(s): Patients were prospectively recruited, who were going to undergo treatment using the Lumenis Pulse™ 120H holmium laser system and fiber with Moses technology. Moses mode and adjustable pulse width mode were compared during fragmentation, and parameters were set as 0.5~1.2 J/20~80 Hz in exploring. Duration, outcome and complications of surgery were recorded. KUB was taken the next day to evaluate the residual stone > 2 mm.

Result(s): In the treatment of proximal ureteral stones with laser energy ≤ 1.0 J, uncontrollable movement of stones happened in traditional mode, while in situ fragmentation was achieved mostly in Moses mode, with displacement of stones to kidney in only 4 cases. In Moses mode, energy setting needed to be down regulated to reduce retropulsion when stones were getting smaller. Energy was set as 1.0 J for stones ≥ 1.0 cm, 0.6-0.8 J for stones ≥ 0.5 -0.8 cm and 0.5 J

for stones <0.5 cm. The mean fragmentation time of semi-rigid ureteroscopy was (12.1 +/- 7.4) min, with a speed of 16.3 mm²/min. In the treatment of renal stones, energy settings were similar to ureteral stones to reduce stone movement. For stones <0.5 cm, Moses mode had advantage over both wide and narrow pulse width modes in furtherly complete dusting, with shorter fragmentation time. The mean fragmentation time of flexible ureteroscopy was (15.7 +/- 5.1) min, with a speed of 21.3mm²/min. No severe complications occurred intraoperatively or postoperatively, and KUB showed negative results of residual stones.

Conclusion(s): Moses technology in Holmium laser resulted in pronounced reduction of stone movement during ureteroscopy, with suggestion of energy setting <=1.0 J, and had advantages over traditional mode in dusting of smaller stones, demanding adjustable energy setting according to the size of stones.

Status

CONFERENCE ABSTRACT

Institution

(Gao, Peng, Li, Liu, Sun) Shanghai Changhai Hospital, China

Publisher

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2018

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423.

Initial experience with moses technology for upper urinary tract calculi.

Large T., Anderson B., Heiman J., Krambeck A.E.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A487), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626875055

Introduction&Objective: A major challenge when performing laser lithotripsy (LL) for ureteral calculi is stone retropulsion caused by the acoustic pulse of the holmium laser. The Lumenis Moses technology is a proprietary fiber and energy delivery algorithm that optimizes the laser pulse characteristics to improve stone fragmentation without stone retropulsion. The objective of this study was to assess our experience with the Moses technology for upper tract stone procedures.

Method(s): From November 2016 to May 2017, 32 patients underwent LL using the Lumenis Pulse 120W laser system with Moses technology at a single high volume center. In total, 16 patients underwent both percutaneous nephrolithotomy (PCNL) and ureteroscopy (URS), and 16 of the patients underwent URS alone. All operations were performed by a single surgeon who also rated degree of retropulsion on a scale of 0-3 (0 = none, 1 = mild, 2 = moderate, 3 = severe). Basket extraction of fragments was used in all cases per the typical practice of the surgeon. Groups were made based on stone composition defined by $\geq 50\%$ on stone analysis: calcium oxalate (CaOx), calcium phosphate (CaP), struvite (Str) and uric acid (UA). Statistical tests performed were Fisher exact and ANOVA.

Result(s): Twenty patients were female. The average age of patients who underwent LL using the Moses technology was 48 years (21-81). Average stone volume for was 23.2 and 15.8mm for PCNL with URS and URS alone. There were no differences in age, gender, recurrent stones, stone location or number of stones among the stone type groups. Stone volume (mm³) was similar between groups (18.3 CaOx vs. 20.7 CaP vs. 21.0 Str vs. 18.7 UA, $p = 0.99$). Comparing all stone types, there were no differences in total energy applied, ureteral stent placement or stone free rate at the conclusion of the procedure (all $p > 0.05$). Overall, 28 patients (87.5%) were deemed stone free at the end of the case. Stone retropulsion was noted in one patient from the entire cohort (3%). The stone type was CaP. No difference in fragmentation was observed between stone types ($p = 0.6$) using Moses. There were no complications associated with the Moses technology in this series.

Conclusion(s): We experienced minimal stone retropulsion (3%) with the Lumenis Moses technology. Stone fragmentation with the Moses Technology was as effective across all stone type groups. Reduction in stone retropulsion with comparison to regular holmium pulse may lead to overall higher efficiency of LL, but further large scale studies are needed.

Status

CONFERENCE ABSTRACT

Institution

(Large, Anderson, Heiman, Krambeck) Indiana University, School of Medicine, United States

Publisher

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2018

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424.

Role of 'Dusting and Pop-Dusting' using a 100W laser machine in the treatment of large stones (>15mm): Results from a high-volume stone center.

Pietropaolo A., Jones P., Somani B.K.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A278), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626875045

Introduction&Objective: The development in laser technology has brought notable improvements in technique and outcome related to ureteroscopy and laser stone (URSL) fragmentation. With the more powerful laser systems, it is possible to 'dust'; and 'popdust'; the stone. We wanted to look at the outcomes of this method for large stones (>15mm) using our new 100W holmium laser. Method(s): Over a period of 16 months (January 2017-April 2018), 50 patients underwent ureteroscopy and stone laser lithotripsy for minimum cumulative stone size of >15mm. Data was collected prospectively on patient and stone demographics and outcomes of URSL. The laser setting used was a power of 0.3-0.8 J and a frequency of 30-50Hz using a long-pulse setting with a 272-lm fiber.

Result(s): 50 patients underwent 54 URSL procedures (4 bilateral procedures) using 'Dusting' or 'Pop-dusting' setting. The mean age was 57 years (range: 2-88 years) with a male:female ratio of 35:15. The mean single and overall stone size was 10.3mm (3-23mm) and 21mm (range: 15-50mm) respectively, with a third of all patients having multiple stones. With a mean operating time

of 52 minutes (range: 15-100min), the stone free rate was 92% and three of these patients needed a second URSL for becoming stone free. An access sheath was inserted in 56% with a post-op stent in all patients. There was one major complication where a patient with a history of urosepsis required a brief ICU admission postoperatively. There were no other major or minor complications.

Conclusion(s): Ureteroscopy using a high-powered laser seems to achieve an excellent SFR with low risk of complications. This might set a new bench-mark for treating large stones, bilateral or multiple stones in a single setting without the need for a second procedure in most cases.

Status

CONFERENCE ABSTRACT

Institution

(Pietropaolo, Jones, Somani) University Hospital Southampton, United Kingdom

Publisher

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425.

Management of impacted ureteral stones.

Fareed K.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A504), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626875008

Introduction & Objective: Impacted ureteral stones present a unique challenge. They could be impacted as a result of chronic mucosal overgrowth, or attempted retrieval of an oversized calculus. Presented here is a video of practical ways of dealing with these difficult operative situations.

Method(s): In the first case, an attempt to retrieve an oversized calyceal calculus using 1.5 Fr Halo Nitinol Basket resulted in the stone being caught at the ureteral mucosa proximal to the edge of a 11/13 Fr ureteral access sheath. A 200 microns Laser fiber was introduced through the working channel of the flexible ureteroscope parallel to the basket and the stone was fragmented inside the basket. The second case, the mucosa overlying the stone was unroofed and the stone was dusted. The third case, the patient was undergoing robotic partial nephrectomy and he had a known stone in the proximal ipsilateral ureter. Robotic Ureterolithotomy was performed. A ureteral JJ stent was placed in all three cases.

Result(s): The impacted stones were treated successfully and the stents were removed cystoscopically in the office after 3 weeks in the ureteroscopy patients and 6 weeks in the ureterolithotomy patient.

Conclusion(s): Impacted stones can be managed endoscopically or laparoscopically based on the situation and other comorbidities.

Status

CONFERENCE ABSTRACT

Institution

(Fareed) Cleveland Clinic, United States

Publisher

Mary Ann Liebert Inc.

Year of Publication

2018

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Moses and the Stone: In vitro comparison of a novel laser technology to short and long pulse in a stone dusting model.

Winship B.B., Wollin D., Carlos E., Li J., Peters C., Terry R.S., Simmons W., Scales C.D., Ferrandino M., Preminger G.M., Lipkin M.E.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A277), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626874975

Introduction & Objective: Moses technology is a novel Holmium: YAG laser pulse delivery system designed to minimize urinary stone retropulsion and improve stone fragmentation even when the laser is not in contact with the stone. Our aim was to assess the ablation efficiency of Moses technology in laser lithotripsy using an in vitro "dusting model" of stone comminution.

Method(s): All tests were conducted using a Lumenis Pulse 120H Holmium:YAG laser with a 365µm Moses fiber. "Hard" (15:3) and "soft" (15:6) Begostones mimicking calcium oxalate monohydrate and calcium oxalate dihydrate stones, respectively, were used. To assess comminution efficiency and fiber tip degradation a dusting model was employed: the laser tip was moved by a 3-dimensional positioning system in a spiral motion across a flat Begostone surface submerged in water. Comminution efficiency was measured as the loss of stone mass after 4kJ of energy delivery. Fiber tip degradation was measured at 1kJ intervals. Comparative trials at short pulse, long pulse, Moses-contact and Moses-distance settings were completed with the laser tip positioned at 0, 1, and 2mm distances from the stone surface at energy settings of 0.4J delivered at 70Hz. Each pulse type was tested 4 times on each stone type.

Result(s): In our dusting model, comminution was significantly greater the closer the laser tip was to the stone surface. On hard stones, pulse type did not have a significant impact on stone comminution at any distance. On soft stones at 0mm, Mosescontact produced the greatest amount of comminution, significantly greater than long pulse ($p < 0.05$) and trending toward significance relative to short pulse. At 1mm, Moses-distance produced significantly greater comminution than all other settings ($p = 0.025$) and was as effective as long or short pulse at 0mm (Figure). Fiber tip degradation was minimal and there was no significant difference between any laser settings.

Conclusion(s): In an in vitro dusting model, the novel Moses Holmium:YAG laser technology provides greater comminution of soft stones when in contact with the stone surface and enables effective comminution at 1mm from the stone surface. Further clinical studies are warranted to assess the clinical utility of this new technology (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Winship, Wollin, Carlos, Li, Peters, Terry, Simmons, Scales, Ferrandino, Preminger, Lipkin)
Duke University Medical Center, Division of Urology, United States

Publisher

Mary Ann Liebert Inc.

Year of Publication

2018

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427.

Dual channel sensor flexible ureteroscope and laser lithotripsy can replace percutaneous nephrolithotomy in treating large kidney stones >2cm: A single surgeon experience.

Feghali J.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A300-A301), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626874535

Introduction & Objective: Introduction: Kidney stones larger than 2 cm are traditionally removed with Percutaneous Nephrolithotomy (PCNL). With advancement in technology more surgeons are using flexible ureteroscopy for treating kidney stones >2cm.

Objective(s): To evaluate the efficacy of Dual Channel Sensor Flexible Ureteroscope (COBRA vision) in treating large kidney stones >2cm.

Method(s): Between 2015 and 2017, Patients with Kidney stones >2cm who accepted to be treated by COBRA vision and laser lithotripsy as an alternative to PCNL, were treated in two different centers by single surgeon. Data was collected on prospective database for Patients

characteristics (Table1A): number of patients, male to female ratio, mean age, mean stone size, stone location, number of patients with stent prior to procedure; and Procedures characteristics (Table1B): number of procedures, mean number of procedures per patient, mean operating room time, stone free rate (fragment (s) $\leq 2\text{mm}$ on standard radiograph and/or Uroscan) 1month after treatment completion, use of access sheath (AS) during procedure and its size, size of stent placed during procedure, and complications rate.

Result(s): 76 patients; 48 men and 28 women were treated by COBRA vision and laser lithotripsy (Fig1) (dusting then fragmentation with extraction) with mean age 51.8 years (22-89) and mean stone size 2.78cm; 14.5% of patients had stone in Upper pole, 7.9% in Mid pole, 29% in Lower pole, 36.8% in Renal pelvis and 11.8% at the Ureteropelvic junction (UPJ)/Proximal ureter; 64.5% of patients had a stent prior to procedure. A total of 83 procedures were done with mean operating room time 117.2mns (63-215), mean number of procedures per patient 1.09 ; stone free rate 93.4%. 86.84% of cases had (AS) (48.5% (11/13), 45.5% (12/14), 6% (13/15)). A 6 Fr stent was used in 33.7% of cases, 7 Fr (62.7%), and 8 Fr (3.6%). Complication rate was 4.8%; two patients had hematuria, one had postoperative pain, and one had sepsis.

Conclusion(s): In experimental hands, COBRA vision and laser Lithotripsy can replace PCNL in treating kidney stones larger than 2cm with low complication rate and high stone free rate.

Status

CONFERENCE ABSTRACT

Institution

(Feghali) SZUMC; NINI; KMC-AUB Hospital, Lebanon

Publisher

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2018

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Efficacy and safety of ureteroscopic lithotripsy for the management of impacted ureteral stones.
Kim B., Min K., Chung J., Ha Y., Jung W., Chun S., Choi S., Lee J., Kim H., Kim T., Yoo E., Kwon
T., Chung S.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris
France. 32(Supplement 2) (pp A323), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626874472

Introduction & Objective: Ureteroscopic lithotripsy (URSL) is a standard surgical option for ureteral stones with high success and low complication rates. Impacted ureteral stones, which are fixed in the ureteral lumen, inducing complete ureteral obstruction, have been known to be difficult to be managed even with URSL. However, with the recent advancement of instruments and surgical technique of URSL, improved success and less complications of URSL for impacted ureteral stones are expected. We analyzed surgical outcomes of URSL for impacted ureteral stones.

Method(s): From January 2011 to December 2016, a total of 245 patients underwent URSL by a single surgeon. Impacted ureteral stone was defined as the ureteral stone causing complete ureteral obstruction, which the guide wire cannot pass beside the stone during URSL. We retrospectively reviewed medical records and compared surgical outcomes, including success rates and complications, between impacted ureteral stone group and the other group.

Result(s): Of 245 cases, impacted ureteral stones were 55 cases (22.5%), and there were no significant differences in preoperative patients' characteristics between the two groups. Meanwhile, significantly larger stone size (8.4 vs 11.8 mm, $p < 0.001$), higher hounsfield units (816.7 vs 1052.0, $p < 0.001$), and longer operation time (50.9 vs 68.0min, $p < 0.001$) were observed in impacted stone group. Although the rate of holmium laser usage as lithotripter (40.0 vs 63.6%, $p = 0.002$) was higher in impacted stone group, the rate of anti-retropulsion device usage, such as stone basket (90.5 vs 94.5%, $p = 0.348$), complication rate (14.2 vs 18.2%, $p = 0.469$) and stone free rate (91.6 vs 89.1%, $p = 0.570$) were not significantly different between the two groups.

Conclusion(s): The results of this study showed that URSL for Impacted ureteral stones tends to need longer operation time due to relatively larger and harder stones. However, URSL can be safely and effectively performed for impacted ureteral stones with proper devices, such as holmium laser and stone basket.

Status

CONFERENCE ABSTRACT

Institution

(Kim, Min, Chung, Ha, Jung, Chun, Choi, Lee, Kim, Kim, Yoo, Kwon, Chung) Department of Urology, School of Medicine, Kyungpook National University, South Korea

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429.

Total radiation-free method for Percutaneous Nephrolithostomy.

Huang W., Fang J., Chen W.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A502), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626874428

Introduction & Objective: Percutaneous NephroLithotomy (PCNL) is the preferred technique for treating larger kidney stones (over 2cm in diameter) located within the kidney. nlt involves keyhole surgery that is performed through a 1cm incision in the skin. Stone clearance rate is better than RIRS. A research from Frence mentioned that Radiation would let physician get posterior subcapsular cataract. So we should avoid radiation as much as possible. Today we present a method is total radiation free without the risk of pelvis perforation.

Method(s): We usde echo guide to set guidewire first then use DVIU to make PCN tract. Use stone basket for remove stone burden and set D-J antegradely.

Result(s): OP time: 41min, Almost stone clean. PCN tract making time: 4min 11sec Blood loss:30ml.

Conclusion(s): We should avoiding radiation as much as possible. With this method, we can perform PCNL without C-arm. It is a total radiation free procedure.

Status

CONFERENCE ABSTRACT

Institution

(Huang, Fang, Chen) EveranHospital, Taiwan (Republic of China)

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430.

Moving from four hands to two during flexible ureteroscopy with stone manipulation.

Matlaga B., Healy K.A., Kaplan A., Leavitt D.A.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A273-A274), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626874391

Introduction & Objective: Ureteroscopy typically requires two individuals a surgeon who manipulates the endoscope and an assistant who operates the basket or grasper. The skill level of the assistant can vary from inexperienced to experienced. A novel device designed for the LithoVue ureteroscope (Boston Scientific, Marlborough, MA) enables a single-surgeon approach to ureteroscopy (URS), as the surgeon simultaneously manipulates the ureteroscope and operates a stone retrieval device. We sought to assess the workloads of these ureteroscopy paradigms.

Method(s): We performed an in vitro evaluation of ureteroscopic stone manipulation with an experienced assistant (EA), an inexperienced assistant (IA), and a device designed for single-surgeon ureteroscopic stone manipulation (Empower, Boston Scientific). Four fellowship-trained endourologists were the primary surgeons and also served as the EA for one another. The IA was a nurse naive to URS. Stone manipulation was performed with Dakota, Zero Tip, and Escape (Boston Scientific, Marlborough, MA). Time to stone capture and communication between surgeon and assistant were recorded. Workload was characterized by the NASA Task Load Index (TLX) instrument, which quantifies mental, physical, and temporal demand as well as performance, effort, and frustration of a task. Statistical analysis was performed for each item on the TLX, time to stone retrieval, and number of communications during stone capture, using Kruskal-Wallis or Tukey-Kramer tests as appropriate.

Result(s): Four surgeons performed nine trials, each of which removed 10 stones (360 total stone retrievals). There were 3 arms of the trial: (1) EA; (2) IA, and (3) Empower. Time to basket was similar among the three arms (median: 12, 16, and 15 seconds, respectively). Empower required no communications during stone capture; the IA required significantly more communications than did the EA ($p < 0.05$) (Figure 1). Compared to the IA, Empower demonstrated significantly lower temporal demands and frustration scores on the TLX ($p < 0.05$). No differences were found between Empower and EA (Figures 2 and 3).

Conclusion(s): The novel device permitted single-surgeon URS and stone capture without sacrificing efficiency. The device eliminated the need for surgeon-assistant communication during stone capture, and improved certain TLX metrics. The findings of this pilot study are encouraging and further evaluation with Lithovue Empower is warranted. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Matlaga, Healy, Kaplan, Leavitt) United States

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431.

A dissolution agent for calcium oxalate stone fragments: Efficiency and toxicologic analysis.

Dill M., DeNapoli R., Arce S., Bird V.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A346), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626874388

Introduction & Objective: The prevalence of nephrolithiasis has increased to 10.6% and 7.1% in 2010 from 6.3% and 4.2% in 1994 in males and females, respectively¹. Treatment methods include ureteroscopy with laser lithotripsy and stone fragment basket retrieval. Dusting is used to break the stone into very small fragments which are left in the renal pelvis and calices and can contribute to patient discomfort, stone recurrence, and potential further related procedures.

Objective(s): Our aim is to develop a biosafe dissolution agent for calcium oxalate calculi fragments.

Method(s): Our dissolution agent: $\text{Na}_3\text{C}_6\text{H}_5\text{O}_7$ is derived from the following equation: $3\text{CaC}_2\text{O}_4(\text{s}) + 2\text{Na}_3\text{C}_6\text{H}_5\text{O}_7(\text{aq}) \rightarrow \text{Ca}_3(\text{C}_6\text{H}_5\text{O}_7)_2(\text{aq}) + 3\text{Na}_2\text{C}_2\text{O}_4(\text{aq})$. This reaction forms two soluble salts. EDTA in a biosafe range of 700 ppm, was added to further increase dissolution. The dissolution agents were incorporated in varying quantities and tested with calcium oxalate (200 microns) crystal fragments. Dissolution was noted over time with a light microscope. Resulting images were analyzed via MATLAB software to quantify percent dissolution over time.

Transitional cell epithelium cultured cells were used to test the cytotoxicity of the dissolution agents. Presto Blue was used to quantify metabolic activity of cells after 30 minutes and 24 hours post exposure. Fluorescence readings at 590 nm were corrected and normalized by cell count. Percent viability was determined considering controls as having 100% viability.

Result(s): Decrease in crystal size over time (<5 microns) following submersion in solutions of varying sodium citrate and EDTA concentrations were observed when compared to controls. Optimal results were obtained with sodium citrate 100mM and EDTA 8.3mM rinse solution, which resulted in a 91% decrease in crystal size in 15 minutes. Cell viabilities after 30 minutes of exposure and 24 hours post exposure to this rinse solution and a 100mM/1.66mM citrate/EDTA solution were optimal, with viabilities that were greater than the control based on cell count, suggesting that the cells immediately recover after a lengthy direct exposure to rinse solutions.

Conclusion(s): It is possible to use sodium citrate and EDTA as dissolution agent for calcium oxalate fragments with low toxicity potential. Future studies testing toxicity in vivo, in addition to testing solution on real time virtual ureteroscopy will be done to determine efficacy.

Status

CONFERENCE ABSTRACT

Institution

(Dill, DeNapoli, Arce, Bird) Biomedical Engineering, College of Engineering, United States

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432.

Can high-frequency ventilation (HFV) improve laser dusting efficacy in retrograde intrarenal surgery (RIRS) for medium and large kidney stones?.

Popiolek M., Andersson S., Wagenius M., Andren O.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A298-A299), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626874363

Introduction & Objective: From surgeon's perspective the respiratory-induced kidney movements (RIKM) during RIRS are undesirable and may be disturbing. However, their real negative impact on RIRS outcomes has not been yet studied. According to previous reports from our center, high-frequency ventilation (HFV) reduces kidney movements, which may facilitate lithotripsy and

improve outcomes of RIRS. The aim of this study was to evaluate whether elimination of RIKM with HFV can further improve the efficacy of stone dusting with Ho-YAG laser in RIRS.

Method(s): A total of 123 consecutive patients operated with RIRS for stones >10mm between January 2016 and December 2017 were included in analysis. Data regarding patient and surgery related variables were retrieved from local register and medical records. Lasing times were collected from stored laser reports. All procedures were performed with the same, standardized setup including high power Ho-YAG laser (Lumenis Pulse 120H) with dusting settings.

Result(s): Of all, 45 cases were performed under HFV (Group A) and conventional controlled ventilation was adapted in remaining 83 cases (Group B). There was no randomization between the groups but no significant differences were observed with regard to sex distribution, age, body mass index och ASA score. The median stone burden was significantly larger ($p = 0,004$) in A (7238 mm³) compared to B (4410mm³). Ureteral access sheath was utilized in all cases in both groups. The median operative time was 70 min and 69 min in A and B, respectively ($p = 0,616$). Average dusting speed was higher in group A (8,8mm³/s) compared to B (6,1mm³/s, $p = 0,083$). Total stone clearance was achieved in 69% (31/45) and 65% (54/83) in groups A and B, respectively ($p = 0,661$). No specific HFV-related complications were observed in A. The length of hospital stay and rates of postoperative infectious complications did not differ between the groups.

Conclusion(s): Our findings suggest that eliminating RIKM with HFV tends to increase dusting speed, which may further improve the efficacy of stone disintegration and surgical outcomes of RIRS. These results preliminarily support the use of HFV in selected cases with medium and large kidney stones. However, further evaluation, preferably in a randomized trial, is needed to verify our findings.

Status

CONFERENCE ABSTRACT

Institution

(Popiolek, Andersson, Wagenius, Andren) University Hospital Orebro, Department of Urology
Sweden, Sweden

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433.

Renal pelvic stone migration to the lower calyx during RIRS: Risk factors and how to manage?.

Gamal W., Mmdouh A.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A434), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626874345

Introduction & Objective: to evaluate the risk factors and how to manage cases with migrated renal pelvic stone to the lower calyx during RIRS.

Method(s): Between April 2015 and June 2017, 63 cases with unilateral renal stone <2 cm were treated by RIRS. The stone burden was (1.2+ 0.4 cm). The degree of hydronephrosis was mild in 18 cases, moderate in 24 cases and severe in 21 cases. The pelvis was an extrarenal in 14 cases, partially intrarenal in 25 cases and intrarenal in 24 cases. We follow the principle of stone dusting in all cases using the laser session (low power 0.2 - 0.4 joules) and high frequency (20 - 40 Hz). The risk factors for stone migration to the lower calyx was evaluated including stone disintegration begin from lower or upper part of the stone. Different methods of stone relocation were also evaluated.

Result(s): All the stones were successfully accessed and managed using the 7.5 fr Storz flexible URS (flex x2). Stone migration to the lower calyx was recorded in 23 cases (36.5%). The degree of hydronephrosis was severe in 18 cases (78.3%) and moderate in 5 cases (21.7%). The renal pelvis was intrarenal in 21 cases (91.3%) and partially intrarenal in 2 cases (8.7%). The stone disintegration begins from upper part of the stone in 19 cases (82.6%) and from the lower part in 4 cases (17.4%). The lower calyx was shallow and the stone is disintegrated insitu safely in 4 cases (17.4%). Stone relocation using the wash itself was successful in 3 cases (13%), using the wash and the distal segment of the FURS was successful in 4 cases (17.4%). Puncturing of the stone with the laser fiber activation then relocate it to the pelvis was successful in 9 cases (39.2%) however fiber tip fracture occurred in 3 cases that necessitate its withdrawal, cutting and reinsertion. Inability to withdraw the fiber from the stones occurred in 4 cases that were successfully withdrawn after laser activation and disintegration of a core around it. The lower

calyceal angle was acute that prevent the laser fiber to reach the stone in 3 cases (13%) in which the relocation was successfully done using zero tip 2.2 fr nitinol basket.

Conclusion(s): Stone pelvis migration to the lower calyx during RIRS should be suspected in markedly dilated pelvicalyceal system and intrarenal pelvis. It is better to be avoided by beginning stone disintegration from the lower part of the stone. Different successful methods of stone relocation should be attempted to save our delicate basket.

Status

CONFERENCE ABSTRACT

Institution

(Gamal, Mmdouh) Sohag University Hospital, Egypt

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434.

The use of the surgeon index finger on the furs lever: A new approach.

Gamal W., Mmdouh A.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A433-A434), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626874313

Introduction & Objective: To evaluate the success of our new approach in management of stone that located on the contra side of the laser fiber exit during RIRS.

Method(s): 209 cases of FURS for renal stones were performed in our department from April 2013 till April 2017. The stones size was (1.6+ 0.5 cm). The stones was right sided in 97 and left sided in 112 cases. The PCS was not dilated in 82 cases, mildly dilated in 37 cases, moderately dilated in 43 cases and markedly dilated in 47 cases. All cases were operated upon by the same surgeon using the 7.5 fr. fiber optic flexible URS with fiber exit at 9.00 o'clock (Storz Flex-x2). Our new approach was applied for stones locations that need a fiber exit at 3.00 o'clock. We rotate the FURS 180 degree followed by using the index finger over the FURS lever instead of the thumb of the right hand as we cannot use the thumb with the hand rotated 180 degree either flexion or extension. Evaluations of the laser - stone contact success, the stone free rate and the surgeon comments about the feasibility of this approach.

Result(s): All the stones were successfully approached and dusted using a laser session (power 0.2 - 0.6 J and frequency 20-40 HZ). The stones were located in the contra side to the laser fiber exit in 24 cases. The PCS was dilated that allow the fiber to dust the stone by bending the distal part of the FURS in 8 cases. Our approach was applied for the remaining 16 cases (the stone was impacted at the neck of the middle calyx of the left kidney with nondilated pelvicalyceal system in 10 cases with huge lower pole cyst in 2 cases and in non-dilated upper calyx with long infundibulum in 4 cases). The non-dilated PCS doesn't permit the tip pending technique. Without our approach the laser fiber was not in direct contact with the stone sufficiently but it just touches its periphery with marked difficulty. By using our approach the stone were easily approached and completely dusted in 15 cases (93.7%) with failure in one case because of poor visibility and clotting that postponed the maneuver. The surgeon comment on this approach that it was difficult to use the index finger in the first 4 cases then it was easily applied for the remaining 11 cases.

Conclusion(s): Our approach of 180 degree rotation of the FURS and using the index finger over the lever for management of stone located on the contra side to the laser fiber exit in nondilated PCS is a safe and effective approach precluding the need for a second FURS manufactured with opposite laser fiber exit.

Status

CONFERENCE ABSTRACT

Institution

(Gamal, Mmdouh) Sohag University Hospital, Egypt

Publisher

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435.

Miniaturized percutaneous nephrolithotomy in a transplanted kidney without retrograde
pielography.

Sanchez Garcia J., Sanchez Ramos J., Diaz Alvarez J., Perez Schoch M., Montero Fabuena R.,
Almuster Dominguez S., Lopez Diez M., Carballo Quinta M., Barros Rodriguez J., Ojea Calvo A.
Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris
France. 32(Supplement 2) (pp A501), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626874236

Introduction & Objective: Nephrolithiasis in a transplanted kidney is an uncommon complication,
with an incidence from 0.2 to 1.7%. Management should look for a complete resolution with
morbidity as low as possible. We describe the technique in case of kidney transplantation and
nephrolithiasis treated with mini percutaneous (mini-PCNL), and impossible retrograde access.

Method(s): A 35 years old male with a transplanted and urolithiasis was admitted to our
department for mini-PCNL. The kidney was transplanted in the right iliac fossa, and the ureter
was anastomosed following Lich-Gregoir Technique. Images control showed the presence of 3
lithiasis. The biggest one located in renal pelvis is about 12x8mm long associated with obstructive
uropathy, and 2 smaller stones in the upper caliceal group. There is no repercussion in renal
function.

Result(s): The mini-PCNL treatment was carried out in Supine Lithotomy Position and general
anesthesia. Flexible Cystoscope revealed transplanted kidney meatus is in the bladder dome. Fail
attempt of retrograde catheterization. A pure ultrasound-guided puncture was inserted in the
upper caliceal group, to make easy the access to the ureter. And anterograde pielography was
performed. The guide wire was inserted into the pelvicaliceal system and dilatation was
performed using a single metal dilator (15/16-Ch operating sheath Karl Storz). Holmium:YAG
laser lithotripsy using 365µm laser fiber was performed and Stones fragments were removed
with a 1.9 Fr nitinol basket. Endoscopic revision of the rest of the cavities, ureter and bladder was

realized by Karl Storz digital flexible ureteroscope through renal access. Antegrade placement of a ureteral stent and nephrostomy were positioned in the renal pelvis. The postoperative course was uneventful. The nephrostomy was removed 48 hours after surgery and the ureteral catheter 3 weeks later. The stone analyses showed that it was mixed from calcium oxalate and calcium phosphate. Three months after mini-PCNL kidney function parameters were normal, and the graft is stone free.

Conclusion(s): Ureterovesical anastomosis is usually located at the bladder apex, making ureteral intubation and entry in the ureter very difficult. The ultrasound-guided puncture of a transplanted kidney in the iliac fossa is a relatively simple procedure because the graft is situated just below the muscles of the anterior abdominal wall. Also, the distance from skin to kidney is small. The miniaturized percutaneous nephrolithotomy is an excellent choice that minimize the complications and renal repercussions from a conventional percutaneous surgery in patients where a good functional reserve is a must for the future survival.

Status

CONFERENCE ABSTRACT

Institution

(Sanchez Garcia, Sanchez Ramos, Diaz Alvarez, Perez Schoch, Montero Fabuena, Almuster Dominguez, Lopez Diez, Carballo Quinta, Barros Rodriguez, Ojea Calvo) Hospital Alvaro Cunqueiro, Spain

Publisher

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Risk Factors for Flexible Ureteroscope (fURS) Damage. Retrospective Monocentric Multifactorial Analysis.

Ozimek T., Cordes J., Gilbert N., Hupe M.C., Wiessmeyer J.R., Schneider M.H., Merseburger A.S., Kramer M.W.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A297), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626874159

Introduction & Objective: The increasing number of flexible ureteroscopy (fURS) procedures, the fragility of devices and their growing repair costs represent a substantial burden for urological departments worldwide. Objective was to investigate the impact of 26 pre- and intraoperative factors on reusable fURS damage.

Method(s): All procedures were conducted with modern reusable fURS: Karl Storz Flex-X2 or Olympus URF-V. Infundibulopelvic Angle (IPA) was measured based on intraoperative retrograde pyelography images. Statistical analysis was performed in RStudio (1.0.136) with Chi2 test, unpaired t-test and Mann-Whitney U-Test.

Result(s): In total, 416 flexible ureteroscopies performed between September 2013 and June 2017 were analyzed: 283 (68.03%) for kidney stone surgery, and 133 (31.97%) for diagnostic purposes; of these 39 (9.38%) devices were postoperatively deemed defective. IPA was steeper in cases with fURS damage compared to cases without damage (Median 44.0 degrees [Min 20.0;Max 81.0] vs. 55.0 [Min 7.0;Max 122.0], $p < 0.001$). The application of laser fiber through fURS was more common in cases with documented defect (17/39 [43.59%] vs. 102/377 [27.06%], $p = 0.047$). Moreover, fURS defects impaired postoperative stone free rate (14/29 [48.28%] vs. 191/254 [75.20%], $p = 0.004$). Other factors such as total laser energy, operation time, number of kidney stones, maximal stone diameter, access sheath application, stone extraction with nitinol basket or biopsy performed with fURS showed no significant influence on fURS damage rate ($p > 0.05$).

Conclusion(s): Application of laser fiber through fURS as well as steep IPA can be considered as risk factors of fURS damage. Special intraoperative attention is advised to avoid future repairs of reusable fURS. A better understanding of damage mechanisms is the key for the indication to use costly disposable fURS.

Status

CONFERENCE ABSTRACT

Institution

(Ozimek, Cordes, Gilbert, Hupe, Wiessmeyer, Schneider, Merseburger, Kramer) University Hospital Schleswig-Holstein (Campus Luebeck), Germany

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437.

Selective utilization of a single-use ureteroscope: Effect on repair costs.

Gorin M., Gurnani R., Matlaga B.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A240), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626874079

Introduction & Objective: Flexible ureteroscopy (URS) is a common treatment for patients with upper tract calculi. Flexible ureteroscopes are fragile devices, with known breakage rates.

Recently, digital single-use flexible ureteroscopes have been introduced. We performed a study to assess how selective utilization of a single use ureteroscope could affect repair costs of reusable flexible ureteroscopes in an endourologic practice.

Method(s): Between July 1, 2016, and June 30, 2017, we tracked URS procedures performed at a single community hospital with both reusable (Karl Storz Flex X2) and single-use (Boston Scientific LithoVue) flexible ureteroscopes. For the first six months of the study, all URS procedures were performed with the reusable scope. For the second six months of the study, the singleuse scope was used selectively for patients with stone burdens >1.5cm in any location, >1cm in lower pole, or bilateral procedures. Patient and stone parameters were recorded, as well as breakage/repair of the reusable flexible ureteroscopes.

Result(s): A total of 280 flexible URS procedures were performed; 148 between July 1, 2016 and December 31, 2016 (reusable flexible ureteroscope only), and 132 between January 1, 2017 and June 30, 2017 (selective utilization of single-use ureteroscope). Patient and stone parameters were comparable between the two groups; average stone size in first time period was 1.1cm and in second time period was 1.2cm ($p > 0.05$). Most procedures were performed without a ureteral access sheath, and with a dusting approach. In the first six months, a total of 13 ureteroscope repairs were required; in the second six months, a total of 9 ureteroscope repairs were required. Based on contracted purchase and repair costs, this yielded a net savings of \$10,604.

Conclusion(s): Selective utilization of a single-use ureteroscope can reduce breakage of reusable flexible ureteroscopes. At present, a complete conversion to a single-use ureteroscope platform for all URS procedures may be too great a cost for many institutions. However, selective utilization of a single-use ureteroscope may yield institutional cost savings, as repair costs can be reduced.

Status

CONFERENCE ABSTRACT

Institution

(Gorin, Gurnani, Matlaga) Johns Hopkins University, School of Medicine, United States

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2018

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438.

Quantitative assessment of effectiveness of ultrasonic propulsion of kidney stones.

Harper J.D., Dai J.C., Chang H.C., Dunmire B., Cunitz B., Thiel J., Liu Z., Bailey M., Sorensen M.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A296), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626873988

Introduction & Objective: Ultrasonic propulsion is an investigative technology to non-invasively reposition stones in the urinary tract. Feasibility was shown previously in 13 awake and 2 anesthetized subjects. Our goals for this study were to demonstrate safety and effectiveness of new exposures and transducer design and to use ureteroscopic observation to quantify the number of kidneys in which stones were repositioned.

Method(s): Patients scheduled for ureteroscopy were recruited and consented. During surgery, ultrasonic propulsion was applied transcutaneously with the patient supine while the stone was visualized ureteroscopically. Exposures were 350 kHz frequency, ≤ 200 W/cm² intensity, and ≤ 3 -second bursts. Ureteroscopic and ultrasound videos were recorded. Video clips of stones receiving and not receiving propulsion bursts were scored for motion ≥ 3 mm by three endourologists blinded to the exposures. The same was done for the ultrasound (US) videos by three US experts. The US videos were also used to measure the distance moved. Subjects were contacted weekly for three weeks to record adverse events. A 90-day chart review was conducted to collect unplanned stone-related events.

Result(s): The study included 15 kidneys (10 right) in 14 subjects (10 male). Average BMI was 28.5 ± 5.2 kg/m² and stone targets ranged from a collection of "dust" to 7mm in size. Subjects received 16 ± 12 propulsion bursts for a total exposure time of 41 ± 39 s. All reviewers confirmed stone movements ≥ 3 mm in 14 of 15 kidneys (93%) on the ureteroscopic videos, while two reviewers reported insufficient video quality to score movement for kidney 15. The US video reviewers scored ≥ 3 mm movements in 11 of 15 kidneys (73%). This difference was likely due to out of plane motion on US. Ultrasonic repositioning obviated the need for a basket to reposition stones in 2 cases. No serious or unanticipated adverse events were observed. Non-serious events included hematuria, nausea, changes in voiding and bowel habits, and pain/discomfort, which were considered related to lithotripsy and not ultrasonic propulsion. Skin reddening (3), skin bruising (1), and skin irritation (1) were considered related to the propulsion procedure.

Conclusion(s): Ultrasonic propulsion was shown safe and effectively repositioned stones in 93% of kidneys, despite positioning and access restrictions caused by working in an operating room on anesthetized subjects. This first human study of these new exposures supports use in further studies to measure clinical benefits of ultrasonic propulsion in awake patients.

Status

CONFERENCE ABSTRACT

Institution

(Harper, Dai, Chang, Dunmire, Cunitz, Thiel, Liu, Bailey, Sorensen) University of Washington,
United States

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439.

Naked flexible ureteroscopic renal surgery (FURS): Sheathless and wireless access by modified ergonomic lithotripsy technique (MEL); lessons learnt in a single asian centre.

Mangat R., Biligere S., Gauhar V.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A477), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626873819

Introduction & Objective: After successfully completing 200 cases of FURS in MEL position using an access sheath, we explored naked fURS with an objective to assess feasibility and safety.

Method(s): 16 renal units of stone size less than 15mm underwent FURS by MEL between May 2017 and April 2018 without an access sheath or a guide wire. Patients were positioned as shown above. After insertion of a guidewire, a semirigid URS was performed. Subsequently, a 10Fr double lumen ureteric catheter (T10) was inserted into the ureteric orifice under fluoroscopic guidance, and if found feasible was advanced to the renal pelvis. A flexible ureteroscope (URF-V or disposable) was then advanced by "no touch" method or "rail road technique. Following which, lithotripsy was performed with holmium laser (30- 80watt) after removal of guide wire aided by an Endo flow pump.

Result(s): 1) Access was achieved in all cases 2) Lithovue deployed in 13/16 cases, Pusen in 2 and URF-V in 1 3) Stone fragmentation = 100%. Stone free rate (SFR) rate (on CTKUB) = 82.25% 4) Access not an issue even when BMI >30 5) Stones 1-1.5cm = 11/16 a' successful fragmentation 6) Lower pole calculi (8/16) were easy to access and fragment. 7) No perioperative complications.

Conclusion(s): We have successfully performed Naked-FURS in the MEL position. Lithovue was easiest to use especially in unstented patients due to superior handling, smaller diameter and stiffer tip. Dusting is the preferred technique with 80W high power laser. The double lumen T10 catheter is a underutilised tool and can be used pre-Naked FURS as a dilator or guide to assess the ureter. By performing naked FURS, access sheath complications were avoided. From our experience with this sample population, we found that FURS can be performed successfully and safely without using an access sheath or wire in stones up to 1.5cm. (Figure Presented) .

Status

CONFERENCE ABSTRACT

Institution

(Mangat, Biligere, Gauhar) NTFGH, Singapore

Publisher

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440.

Initial experience with MOSES laser lithotripsy using lumenis technology.

Large T., Anderson B., Heiman J., Krambeck A.E.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A499), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626873816

Introduction & Objective: Ureteroscopy has emerged as the most versatile and least invasive treatment option for patients with all stone compositions and a total stone burden less than 2cm. One of the main reasons for this advancement is the development and progression of the holmium laser technology, enabling lithotripsy of stones in any location. Multiple approaches to lithotripsy, such as dusting or basketing, are employed to treat stone disease. While basketing has been proven to have higher stone free rates, there is still utility for dusting, especially if the stone is in the ureter. Dusting a stone in the ureter is effective because gravel moves in an antegrade fashion into the bladder. One of the major drawbacks to dusting is stone retropulsion caused by the acoustic pulse of the holmium laser. To combat this, new technology developed by Lumenis using the 120-watt laser system, optimizes energy transmission and significantly reduces stone retropulsion. This new Moses technology leads to less stone migration and provides the surgeon with more control. In this video, we contrast the use of the Moses technology and the standard laser lithotripsy.

Method(s): Between 1/16/2017- 6/21/2017, 32 patients underwent laser lithotripsy using the Lumenis Pulse 120H laser system with Moses technology at IU Methodist Hospital. Video and fluoroscopic imaging was captured, and optimal cases were selected to demonstrate the Moses technology.

Result(s): All patients underwent successful laser lithotripsy using Moses technology. There were no complications specifically related to the Moses laser technology.

Conclusion(s): Within this video we provide clear visual evidence that LumenisTM Moses technology reduces retropulsion and stone migration. Reduction in ureteral stone retropulsion leads to overall higher efficiency of ureteral laser lithotripsy.

Status

CONFERENCE ABSTRACT

Institution

(Large, Anderson, Heiman, Krambeck) Indiana University, School of Medicine, United States

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441.

Comparison of rapid-pulse Tm fiber LASER (RPFL) vs High Power 120W Holmium-YAG LASER (Ho:YAG): Stone ablation efficiency at the same average power settings.

Molina W.R., Knudsen B.E., Chew B.H.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A49), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626873777

Introduction & Objective: Laser lithotripsy (LL) with Holmium-YAG (Ho:YAG) is the commonest laser used for ureteroscopic fragmentation of stones. Newer higher power 120W Ho:YAG lasers are effective in stone comminution. A rapidpulse Tm fiber laser (RPFL) has been used in other areas of medicine, but not thoroughly tested in fragmenting stones. RPFL systems are portable, use low-power and can reach higher frequencies and lower pulse energies which may be advantageous in dusting stones. We compared a 120W Ho:YAG LASER system and a prototype RPFL machine in an in-vitro study at the same average power.

Method(s): 5x5x5mm Begostones were placed in a 10x10x43.5mmcuvette with a 1mmmesh at the bottomfilled continuously flowing water. A 270 mum-core laser fiber was utilized for ablation which was considered finished when all stone fragments passed through the mesh. For each machine and average power (Table 1), 15 ablations were performed. The mean time and ablation rates were normalized to stone weight and compared between the 2 lasers. The frequency settings for the RPFL varied from 100 to 210Hz. These frequencies are not attainable on Ho:YAG lasers.

Result(s): The RPFL operates at a significantly lower energy per pulse and has a higher dusting rate than the Ho:YAG laser tested at its typical LL settings (Graphs 1 and 2). At each setting of the same power, the average dusting rate for the RPFL was faster than the 120W Ho:YAG laser. Furthermore, the average rate for the RPFL laser is higher than any of the Ho:YAG average rates at any setting.

Conclusion(s): RPFL is more efficient than a 120W Ho:YAG laser in this model for stone ablation. Further evaluation to assess RPFL system safety and performance for LL is needed.

Status

CONFERENCE ABSTRACT

Institution

(Molina, Knudsen, Chew) University of Colorado, United States

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442.

Endoscopic combined intra renal surgery with disposable ureteroscope: Bilateral synchronous treatment.

Angerri O., Emiliani E., Mosquera L., Sanchez F., Millan F., Palou J.

Embase

Journal of Endourology. Conference: 36th World Congress of Endourology, WCE 2018. Paris France. 32(Supplement 2) (pp A498), 2018. Date of Publication: September 2018.

[Conference Abstract]

AN: 626873668

Introduction & Objective: Complete staghorn stones are always a challenging surgery, even more with concomitant stones in the contralateral ureter or renal pelvis. Endoscopic combined intrarenal surgery it's our standard treatment for this situation, using the flexible ureteroscopy for both sides.

Method(s): To reach a stone free status for both sides in a same procedure we use a flexible disposable ureteroscope (Lithovue, Boston Sci) and rigid and flexible-nephroscope. Two Holmium

(Ho) lasers are required to work at the same time, in the same kidney or in different renal units. High power lasers are used for the nephroscopy and medium power for the disposable ureteroscope.

Result(s): A 55 years old male patient with a complete left staghorn stone (6 x 4cm) and a 15 x 5mm right distal ureteral stone was treated. In Valdivia supine position, cystoscopy was performed with the patient under general anesthesia. An ureteropelvic occlusion balloon catheter 6 Fr / 75 cm / 0.4ml is positioned. Keeping supine position the percutaneous tract was established. Puncture of the inferior calix using fluoroscope with 0degree - 90degree degrees technique. Second puncture to improve the access to all the kidney. Dilatation was achieved using a 20ATM balloon dilatator to accommodate a 24 Fr sheath. A 18Fr nephroscope was inserted using a 1000µm fiber Ho laser. We set the energy 5,5 J and 20Hz. With high power laser we see fragments through the percutaneous access. Meanwhile flexible ureteroscopy (with another laser) help treating the ureteropelvic junction on the same kidney and later on clearing the stone in the contra lateral ureter. We complete the extraction of the stones with a 4.5F Nitinol basket. A 18Fr nephrostomy tube and bilateral double J with a bladder catheter were left in place with minimal hematuria. The patient was discharged at 4rd day.

Conclusion(s): Bilateral synchronous treatment it could be done safely for the patient and without damaging your armamentarium using a flexible disposable ureteroscope.

Status

CONFERENCE ABSTRACT

Institution

(Angerri, Emiliani, Mosquera, Sanchez, Millan, Palou) Fundacio Puigvert, Spain

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443.

The clinical efficacy of dual lumen catheter technique in retrograde intrarenal surgery for nephrolithiasis: A propensity score analysis.

Cho S.Y., Yoo S., Kim H.S.

Embase

International Journal of Urology. Conference: 16th Urological Association of Asia Congress, UAA 2018. Kyoto Japan. 25(Supplement 1) (pp 293), 2018. Date of Publication: October 2018.

[Conference Abstract]

AN: 624788276

Objective: To assess the clinical efficacy of dual-lumen catheter technique in retrograde intrarenal surgery (RIRS) in terms of stone-free rate Methods: The data of 172 patients who underwent RIRS for renal stones between 2010 and 2017 retrospectively reviewed. Patients were classified into two groups depending on whether dual-lumen catheter technique was used (group 1, n=25) or not (group 2, n=147) during RIRS. In turn, all patients of group 1 were compared to group 2 using propensity score analytic methods. Logistic regression analyses were conducted to identify the predictors of postoperative RFs and dusts.

Result(s): According to propensity score analysis, no other clinical variables were significantly different between two groups, except that dusts-free rate was significantly much higher in group 1 than group 2 (92% vs. 40%, $p < 0.001$). In multivariable analysis, the performance of dual-lumen catheter technique was the independent predictor of the absence of dusts after RIRS (OR, 0.040; 95% CI, 0.070-0.220). Additionally, when performing multivariable analyses in other matched population, it was revealed that while the technique adversely affected the removal of RFs (OR, 4.711; 95% CI, 1.203-18.447), it showed an excellent effect in the evacuation of dusts (OR, 0.049; 95% CI, 0.007-0.347)

Conclusion(s): Our analyses suggest that although the use of dual-lumen catheter during RIRS can facilitate the evacuation of sandy stones. Further prospective randomized trials will be required to verify the usefulness of this technique in real clinical practice.

Status

CONFERENCE ABSTRACT

Institution

(Cho, Yoo) Seoul National University Boramae Medical Center, South Korea (Kim) Dongguk University Ilsan Medical Center, South Korea

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444.

Intraoperative retrograde intrarenal surgery (RIRS) as a good management option for large ureteropelvic impacted stone of transplanted kidney.

Letto G., Soldini G., Iovino D., Parise C., Zani E., Raveglia V., Saredi G., Tozzi M., Carcano G., Amico F.

Embase

Transplantation. Conference: 27th International Congress of The Transplantation Society, TTS 2018. Madrid Spain. 102(7 Supplement 1) (pp S638), 2018. Date of Publication: July 2018.

[Conference Abstract]

AN: 623701639

Introduction: Urolithiasis is a rare complication following kidney transplantation. Many of the clinical features of urinary stones after transplantation differ from those of non-transplant patients, but the course is essentially similar to that in non-transplant patients with lithiasis. The management of kidney stones has evolved radically over the years and involved extracorporeal shock wave lithotripsy (ESWL), flexible ureteroscopy and in situ lithotripsy, percutaneous nephrolithotomy (PCNL), open pyelolithotomy and open cystolitholapaxy. Retrograde URS with laser lithotripsy and/or basket extraction is a reasonable option for treating small and large stones also in transplanted kidney. In order to overcome the difficulty of complex anatomy typical of non-native ureter, ureteroscope can be introduced through a small surgical ureterotomy allowing quite complete stones clear. **Materials and Methods:** We present surgical treatment and outcome in a 69-year-old male patient with a large ureteropelvic impacted stone of transplanted kidney one year and three months after transplantation. The transplanted ureter and the ureteroneocystotomy was identified at the right anterior bladder wall. Ureterotomy was performed on the third part of transplanted ureter, the double J stent was removed and the ureter was eventually cannulated. Retrograde pyelography revealed an angulation of the midureter toward the renal pelvis seen

medially. Access was established with both a standard teflon wire and a superstiff teflon guidewire. A flexible ureteroscope was advanced beyond the midureter through ureterotomy into the transplanted kidney. Laser lithotripsy was then effectively performed in the standard manner by means of 200/273µm Holmium laser fibers. A tipless nitinol basket was used to extract the fragments.

Discussion(s): Native anatomy makes ureteroscopy simple. The orthotopic location of the ureteral orifices allow the urologist to take advantage of the bladder trigone as a backbone to advance wires and ureteroscopes. This is lost in cases as in that one described previously, where the non-native ureter is in a more anterior location. The last attempt to remove pelvic stones in transplanted kidneys is to introduce the ureteroscope through surgical ureterotomy. In this way is possible to avoid surgical incision of renal pelvis itself which is very difficult to isolate considering its proximity to vascular structures.

Conclusion(s): Upper urinary tract endoscopy has long been established as a safe and efficient means of managing urolithiasis with great success. With technological advances, ureteroscopy has evolved into a powerful tool in the armamentarium of the urologist. Management of patients with complex anatomy is now possible while avoiding more invasive interventions such as percutaneous nephrostolithotomy or surgical pyelotomy. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Ietto, Soldini, Iovino, Parise, Zani, Raveglia, Saredi, Tozzi, Carcano, Amico) General and Transplant Surgery, University of Insubria, Varese, Italy

Publisher

Lippincott Williams and Wilkins

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2018

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445.

Outcomes of kidney stone treatment using the Avicenna Roboflex URS System: A 3-year institutional experience.

Charalampogiannis N., Klein J.T., Fiedler M., Goezen A.S., Weiss H., Rieker P., Achinas S., Rassweiler J.

Embase

European Urology, Supplements. Conference: 6th Meeting of the EAU Section of Uro-Technology, ESUT 2018. Modena Italy. 17(4) (pp e2015), 2018. Date of Publication: May 2018.

[Conference Abstract]

AN: 622669466

Introduction & Objectives: To evaluate the results in retrograde intrarenal surgery using the Avicenna Roboflex System.

Material(s) and Method(s): From June 2014 until September 2017 a total of 197 patients (116 men and 81 women) suffering from nephrolithiasis underwent robotic retrograde intrarenal stone treatment in our Center using the Avicenna Roboflex robotic device. We analyzed the preoperative and the operative data from the patients.

Result(s): The mean age was 51.79 yr (range: 17-82 yr) and the mean BMI 28.1 (range: 17.6-49.5). According to ASA score 70 patients were classified to ASA score I, 69 patients to II, 54 to III and 4 to ASA score IV. The mean stone burden was: 2957 mm³ (range: 400-4100 mm³). The mean Hounsfield in CT Kidney was 731 (range: 276-1423). The mean number of stones in the kidney was 1.97 (range: 1-9). The majority of patients (98%) were pre-stented. We used access sheath in all patients. 86.81% of patients (171) underwent Stone Fragmentation. The statistical analysis from the operative parameters showed that the mean operative time was 85.21 min. (range: 10-263), the mean robot docking time 4.72 min (range: 1-17), the mean console time 68.60 min (10-229) and mean console time to Stone contact was 5.91 min (30 sec-20 min). Mean fragmentation time was 22.49 min. (range: 1-129 min.) corresponding to a mean Stone-clearance rate 44.8 mm/min. Mean remove fragments from the Kidney with basket was 20.49 min (range: 1-125). In relation with postoperative complications 2 patients died; one due to severe sepsis and the other on 3rd postoperative day time due to Myocardial Infarction. 4 patients developed complications of Grade II (1 patient subcapsular Kidney Hematoma, 1 blood transfusion and 2 fever without Sepsis) and 1 complication Grade IIIB (urine leakage-U/S guided drainage). During operation 1 patient needed a DJ-Stent due to ureteral perforation. In 2 patients appeared intraoperative Bleeding. After treatment the stone free rate was 94%. DJ stents were placed in 191 patients, 83 DJ-stents were removed in the first postoperative day, 108 DJ-stents in a short period of 7 to 14 days.

Conclusion(s): Roboflex Avicenna provides a suitable and a safe platform for robotic FURS. The new robotic device provides a non exhausting environment for the surgeon especially during long FURS. Ongoing refinement is likely to expand the role of this technology in retrograde intrarenal surgery in the near future.

Status

CONFERENCE ABSTRACT

Institution

(Charalampogiannis, Fiedler, Goezen, Weiss, Rieker, Rassweiler) SLK Kliniken am Gesundbrunnen, Dept. of Urology, Heilbronn, Germany (Klein) University of Ulm, Dept. of Urology, Ulm, Germany

(Achinas) University of Groningen, Dept. of Mathematics and Natural Sciences, Groningen, Netherlands

Publisher

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446.

Holmium laser lithotripsy for ureteral and renal stones: Is dusting equivalent to fragmenting?.

Knoll T., Sieg M., Wendt-Nordahl G., Jessen J.P., Bach T.

Embase

European Urology, Supplements. Conference: 6th Meeting of the EAU Section of Uro-Technology, ESUT 2018. Modena Italy. 17(4) (pp e2007), 2018. Date of Publication: May 2018.

[Conference Abstract]

AN: 622669446

Introduction & Objectives: Ureteroscopy became the treatment option of first choice for upper tract stones, even for larger stone sizes. This development led to an increasing interest in optimizing the settings of the holmium laser. Factors as frequency, energy, pulse length or shape do substantially influence the effect of the laser on the stone. Aim of our prospective study was to evaluate the outcomes of ureteroscopic stone treatment in two high-volume stone centers comparing two typical laser settings for fragmenting and dusting.

Material(s) and Method(s): Patients with solitary ureteral or renal stones were included in the prospective data assessment. All patients were treated under general anesthesia and fluoroscopic control. Perioperative antibiotic prophylaxis was applied or UTIs were treated preoperatively. Ureteroscopy was performed using rigid or flexible scopes (7-8.5 F, Karl Storz Endoscopes, Germany). Stone disintegration was performed using a holmium laser (Dornier Medilas H Solvo, Germany) and 275um ball-tip laser fibers. The lithotripsy settings (dusting (D)= 18-20 Hz, 0.4-0.6J, or fragmenting (F)= 8-12 Hz, 1.2-1.8 J) were chosen according to the surgeon's preference. A total of 177 patients were treated. Statistical analysis was performed by two-sided t-test.

Result(s): Stones sizes in both groups were comparable (D: 93 vs. F: 76 mm, $p=0.2$). Pre-stenting was common (D: 83% vs. F: 87%; n. s.). 116 stones were in the kidney, 61 stones in the ureter. Ureteral access sheaths were used in 83% of renal stones. Fragmenting was chosen for 49/116 renal and 43/61 ureteral stones. Overall OR time was comparable (D: 47 vs. F: 50 min.; n. s.) but laser time was significantly longer for dusting (456 sec. vs. 63 sec.; $p<0.01$). Dusting had a negative impact on intraoperative vision in 46% compared to 27% (F), $p<0.05$). On day 1, all but one patients with ureteral stones were stone free with both settings. With fragmenting, SFR was 91.8% for renal stones, while after dusting stone residuals were seen on KUB in 34%. Intra- and postoperative complications were comparable.

Conclusion(s): Both concepts for laser lithotripsy demonstrated efficacy. However, by definition, dusting cannot achieve an immediate stone free status thus close follow-up is mandatory. We therefore recommend dusting settings for patients with large stone mass or when direct extraction seems difficult due to anatomic factors. Fragmenting and direct stone extraction should be attempted whenever possible. In general, a laser with a wide range of energy and frequency settings significantly improves stone management.

Status

CONFERENCE ABSTRACT

Institution

(Knoll, Wendt-Nordahl, Jessen) Klinikum Sindelfingen-Boblingen, Dept. of Urology, Sindelfingen, Germany (Sieg, Bach) Asklepios Klinikum Harburg, Dept. of Urology, Hamburg, Germany

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447.

Our experience in retrograde intra renal surgery with a single-use digital flexible ureteroscope in a tertiary academic endourological center.

Georgiadis G., Zisis I.E., Mpelantis C., Mavridis C., Skamagkas C., Heretis I., Mamoulakis C.

Embase

European Urology, Supplements. Conference: 6th Meeting of the EAU Section of Uro-Technology, ESUT 2018. Modena Italy. 17(4) (pp e2125), 2018. Date of Publication: May 2018. [Conference Abstract]

AN: 622669615

Introduction & Objectives: Retrograde Intra Renal Surgery (RIRS) with single use flexible ureterorenoscopes is a novel concept in treating renal lithiasis. The aim of this video is to present our experience using a novel disposable digital flexible ureteronephroscope (LithoVue™ Boston Scientific).

Material(s) and Method(s): Four patients with renal lithiasis were treated in a completely standardized way as previously described in our center. Concretely, under fluoroscopy ureteral access sheath (UAS) 12/14F (Flexor, Cook Medical, Bloomington, IN) was introduced over a guidewire (Sensor, Boston Scientific) up to the PUJ. LithoVue™ was advanced through UAS. Stone fragmentation was achieved using Ho:YAG laser (Calculase; Kari Storz Endoscope, Tuttingen, Germany) with a 365 nm multiple use fiber (15 Hz- 1.2 J). An irrigation pump (ENDOMAT LC; Karl Storz Endoscope, Tuttingen, Germany) was used for better visualization. All fragments were retrieved with a 1.9F Zero Tip Nitinol Stone Retrieval Basket (Boston Scientific). UAS was removed with simultaneous inspection of the ureter. A 6F Percuflex Plus Ureteral Stent (Boston Scientific) and a 18F Foley catheter was left behind. With patient 2, we had to deviate

slightly from our standardized approach due to difficulty in introducing the UAS despite down-staging. LithoVue™ was easily introduced without UAS over the guidewire.

Result(s): LithoVue™, offers high resolution digital images and eliminates inconsistent performance, maintenance and repair hassles. Its tip is 7.7 F with a maximum outer diameter of 9.5 F. It comes with an integrated camera as well as a built in light source. LithoVue is accompanied by its own all in one touch screen monitor station. It has a 4 hour time limitation use. The handle is ergonomic, allowing easy deflection 270degree, supination and pronation. It has a light body without causing fatigue to the surgeon. It is easily introduced through the ureter without a sheath performing all movements and follows all rotational commands despite absence of UAS. We connected its own monitor to our 26" Full HD STORZ Monitor with exceptional results, with the downside of the minimal alteration of the natural colors. It has a CMOS imager system but due to the automatic digital focus, we encountered dark spots at screen edges. The 3.6F working channel allowed introduction of equipment and permitted adequate irrigation. Mean operative time was 90 min. We did not encounter any intra or post-operative complications. An X-ray KUB was obtained prior to discharge which confirmed stone free status.

Conclusion(s): The use of LithoVue shows very promising results and it appears to be an ideal option for tertiary centers that engage with difficult cases. Further studies are warranting for evaluating its cost-effectiveness.

Status

CONFERENCE ABSTRACT

Institution

(Georgiadis, Zisis, Mpelantis, Mavridis, Skamagkas, Heretis, Mamoulakis) University General Hospital of Heraklion, Dept. of Urology, Heraklion, Greece

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Innovations in PCNL: A closed circuit mini-perc system.

Zanetti S.P., Sampogna G., Fontana M., De Lorenzis E., Gallioli A., Boeri L., Palmisano F., Sabatini I., Albo G., Longo F., Montanari E.

Embase

European Urology, Supplements. Conference: 6th Meeting of the EAU Section of Uro-Technology, ESUT 2018. Modena Italy. 17(4) (pp e2121), 2018. Date of Publication: May 2018.

[Conference Abstract]

AN: 622669599

Introduction & Objectives: Standard PCNL was designed to be an open circuit with a continuous water inflow inside the collecting system and an outflow through the access sheath. In this setting, intrarenal pressure can't be accurately controlled and mainly depends on the ratio between the access sheath inner diameter and the nephroscope size. The need to control intrarenal pressure led to the idea to create a closed circuit with a continuous inflow and a suction-controlled outflow. In such a system intrarenal pressure primarily depends on the difference between inflow and outflow pressures. The Clear Petra system embodies this idea. This video shows the working principles of this system and a procedure performed using a Clear Petra nephrostomy sheath.

Material(s) and Method(s): The set consists in a nephrostomic access sheath, whose external access is plugged to prevent the medium from flowing out. The sheath is equipped with a lateral arm connected to the aspiration system. The aspiration pipe from the sheath is linked to a plastic can which is in turn linked to the vacuum creating device. The aspiration pressure can be adjusted by the surgeon throughout the procedure. The 16 Fr access sheath size allows the introduction of a 12 Fr nephroscope. During laser lithotripsy, real time lapaxy is achieved by slowly drawing back the nephroscope inside the sheath until the opening of the lateral aspiration arm.

Result(s): In this video a 16 Fr, 17 cm long Clear Petra nephrostomy sheath was employed to treat a multiple kidney lithiasis > 3 cm in a 46 year old woman. A 12 Fr nephroscope was employed. Lithotripsy was achieved with Holmium YAG Laser. Lapaxy was performed through the aspiration linked to the lateral arm of the sheath. No baskets or forceps were used.

Conclusion(s): In conclusion, a closed circuit PCNL system may help the surgeon in several ways: -the continuous aspiration guarantees a crystal clear vision along the procedure -the low intrarenal pressure is associated with less post-operative infective complications -the easy litholapaxy and the absence of fragments scatter may reduce operative time, increase stone free rate and decrease the need of disposable devices, cutting costs.

Status

CONFERENCE ABSTRACT

Institution

(Zanetti, Sampogna, Fontana, De Lorenzis, Gallioli, Boeri, Palmisano, Sabatini, Albo, Longo, Montanari) IRCCS Ca' Granda Ospedale Maggiore Policlinico Milano, Dept. of Urology, Milan, Italy

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449.

Transurethral seminal vesiculoscopy with a ureteroscope for the treatment of seminal vesicle stones.

Tao S., Peng Z., Chunyang W., Shengkun S., Xu Z.

Embase

Journal of Urology. Conference: 2018 Annual Meeting, American Urological Association, AUA 2018. San Francisco, CA United States. 199(4 Supplement 1) (pp e1127), 2018. Date of Publication: April 2018.

[Conference Abstract]

AN: 621737598

INTRODUCTION AND OBJECTIVES: Stones in seminal vesicles are extremely rare, Hemospermia, infertility, perineal/testicular pains and painful ejaculation are common primary symptoms. Transrectal ultrasonography, pelvic computed tomography or magnetic resonance imaging are the useful diagnostic method for patients with such symptoms. Seminal vesicle stones are one of the main cause of persistent or intractable hemospermia. Treatment requires

removal of the stone, generally through a laparoscopic technique or open surgery. However, these procedures are always invasive and may produce some complications. The purpose of this study was to apply a transurethral seminal vesiculoscopy for diagnosis and treatment of the seminal vesicle stones with a ureteroscope. We assessed whether this transurethral endoscopic technique is feasible and effective in the diagnosis and treatment of the seminal vesicle stones with intractable hemospermia.

METHOD(S): Totally 76 patients with intractable hemospermia underwent transurethral seminal vesiculoscopy through the distal seminal tracts using a 7.3F rigid ureteroscope. Age of patients was from 23 to 58 years, the average was 42 years old. The patients' symptoms ranged in duration from 3 to 180 months(mean duration 45.8 months). All patients underwent either transrectal ultrasonography, pelvic computed tomography or magnetic resonance imaging before operation. Positive imaging findings were observed in patients with seminal vesicle stones and dilated seminal vesicle size.

RESULT(S): All 76 patients were successfully performed transurethral seminal vesiculoscopy. A 7.3F rigid ureteroscope entered the lumen of the verumontanum and then the seminal vesicle under direct vision. the ureteroscope was inserted retrograde through the orifice of the verumontanum guided by a 0.032-inch Zebra guidewire. After entering the lumen of the verumontanum, the bilateral ejaculatory duct orifices were identified under low pressure saline irrigation. The seminal vesicle interior with single or multiple yellowish stones ranging from 1 to 8 mm in diameter was clearly visible. Almost of the stones were easily fragmented and endoscopically removed using a grasper. but if the stone is large and hard, it can be fragmented by holmium laser lithotripsy, and then removed by a grasper. The residual fragments were then by irrigation basket extraction. The operative time was 30 to 120 minutes (mean 52 minutes). The mean follow-up period was 15 months(range 3-36 months). Symptoms of hemospermia disappeared after one to three months. Postoperative complications, such as retrograde ejaculation, urinary incontinence, rectal injury or epididymitis, were not observed in the present study.

CONCLUSION(S): Our study demonstrates that transurethral seminal vesiculoscopy is safe and effective in the diagnosis and treatment of the seminal vesicle stones. This endoscopic technique can be performed with minimal complications. We present transurethral seminal vesiculoscopy as a new approach for the treatment of seminal vesicle stones with hemospermia. This minimally invasive technique is safe and effective. It can be easily performed with minimal complications and requires expertise in transurethral resection.

Status

CONFERENCE ABSTRACT

Institution

(Tao, Peng, Chunyang, Shengkun, Xu) BeijingChina

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450.

New conception for flexor VUE deflecting endoscopic system use, in order to improve stone free rate (SFR) after RIRS: Preliminary results from a single centre stage 2a study.

Saita A., Casale P., Lazzeri M., Buffi N.M., Hurle R., Peschechera R., Lughezzani G., Benetti A., Pasini L., Zandegiacomo S., Lista G., Cardone P., Guazzoni G.

Embase

Journal of Urology. Conference: 2018 Annual Meeting, American Urological Association, AUA 2018. San Francisco, CA United States. 199(4 Supplement 1) (pp e754), 2018. Date of Publication: April 2018.

[Conference Abstract]

AN: 621737432

INTRODUCTION AND OBJECTIVES: Stone extraction devices have become a routine tool after RIRS. Perforation and avulsion of the ureter wall, due to excessive force on the extraction device, are serious complications of basketing. Furthermore timing of basketing may have a significant impact on procedure total time. We tested the hypothesis that the use of Flexor Vue Deflecting Endoscopic System used as ureteral access sheath (UAS) may increase the SFR after RIRS thanks to the Bernulli's principle.

METHOD(S): This is a prospective, observational, single-center stage 2a study with data collected on consecutive patients treated for renal stones. Patients 18 year-old or older, candidates for RIRS of medium size (1.5-2.5 cm) renal stones as primary treatment or after failed previous treatment were cases of interest. Patients with multiple stones were excluded from

study. All the procedures were performed using a 200 mm holmium fiber using a flexible ureterorenoscope and standard UAS. The Flexor Vue Deflecting Endoscopic System was positioned at the end of procedure in order to avoid basketing and improve SFR. The outcomes of interest are feasibility, safety and efficacy. Feasibility was defined as the capacity of positioning and favouring fragment removal according to the Bernoulli's principle by the Flexor device. Safety was defined by complication analysis. Efficacy outcomes measured operative time, SFR, hospital stay, re-treatment and rehospitalization. SFR was defined as fragments less than 4 mm assessed by ultrasound and CT. Descriptive statistical analysis was applied.

RESULT(S): 11 patients (M/F ratio: 7/4, mean age 63.5 +/- 8.3) were treated. The stones were located in the lower calyces, and the renal pelvis in 3 and 8 patients, respectively. Medium stone size was 1.8 mm +/- 3.2. The procedure with Flexor Vue Deflecting Endoscopic System was feasible in all the patients. Eight patients underwent preoperative ureteral stent. Mean operative time was 82 min +/- 13.7 and median hospital stay was of 1.5 day. During the procedure the video channel was used as irrigating channel in order to favour fragment evacuation according to Bernoulli's principle. The SFR after 30 days was 81% (9/11). Post-operatively we had no significant bleeding, 1 patient with fever, who required antibiotic treatment for 5 days and no sepsis. No cost/effectiveness study was performed

CONCLUSION(S): The use of Flexor Vue Deflecting Endoscopic System seems to be feasible, safe and effective for patients with medium size (1.5 to 2.5 cm) renal stones. The technique we described could allow an easy non-invasive procedure for fragments evacuation. Further studies with larger population and under randomised setting, comparing with traditional flexible RIRS, are mandatory before the introduction of this technique in our clinical practice.

Status

CONFERENCE ABSTRACT

Institution

(Saita, Casale, Lazzeri, Buffi, Hurle, Pescechera, Lughezzani, Benetti, Pasini, Zandegiacomo, Lista, Cardone, Guazzoni) MilanItaly

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451.

Perioperative outcomes of flexible ureterorenoscopy for urolithiasis using the sheathless technique: A comparative study.

Pradere B., Peyronnet B., Eddine Khene Z., Freton L., Alimi Q., Mathieu R., Manunta A., Bensalah K.

Embase

Journal of Urology. Conference: 2018 Annual Meeting, American Urological Association, AUA 2018. San Francisco, CA United States. 199(4 Supplement 1) (pp e751), 2018. Date of Publication: April 2018.

[Conference Abstract]

AN: 621737276

INTRODUCTION AND OBJECTIVES: Treatment of renal stones by flexible ureterorenoscopy using a ureteral access sheath (UAS) is recommended by many surgeons. Nevertheless, a sheathless technique (SLT) has been developed especially to prevent ureteral trauma. Our objective was to assess the SLT compared to the access sheath technique (AST).

METHOD(S): All the patient operated for renal stones by flexible ureteroscopy (fURS) were included in a university center. All the preoperative patients and stones characteristics were collected. Operative outcomes of fURS using the SLT were compared to fURS using the AST. We assessed the operative time, the need of a basket, residual fragments rate at the end of the procedure, stone free rate at 3 months and the reintervention rate. Comparison between groups were performed using χ^2 test and Fisher exact test for discrete variables and Mann-Whitney test for continuous variables.

RESULT(S): We included 400 patients in the study. Stones size was similar between AST and SLT groups (17.4 vs. 16.4; $p=0.43$) (Table1). Operative time was shorter in the AST group ($p=0.0001$) with a higher use of basket (80% vs. 64%; $p<0.001$). Residual fragments rate at the end of surgery was similar in both groups. More patients required a double J at the end of the procedure in the AST group (84% vs. 70%; $p=0.001$). Complications rate, stone-free rate and reintervention were similar between groups (Table 1).

CONCLUSION(S): The sheathless technique does not impact stone-free rate and reintervention rate. Nevertheless, operative time is significantly longer. The sheathless technique is a good

alternative to reduce the procedures cost (less basket and postoperative drainage used) without impacting operative outcomes and prevent ureteral trauma. (Table Presented).

Status

CONFERENCE ABSTRACT

Institution

(Pradere) ToursFrance (Peyronnet, Eddine Khene, Freton, Alimi, Mathieu, Manunta, Bensalah)

RennesFrance

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452.

Holmium laser lithotripsy for ureteral and renal stones: Is dusting equivalent to fragmenting?.

Knoll T., Sieg M., Jessen J., Wendt-Nordahl G., Bach T.

Embase

Journal of Urology. Conference: 2018 Annual Meeting, American Urological Association, AUA 2018. San Francisco, CA United States. 199(4 Supplement 1) (pp e750-e751), 2018. Date of Publication: April 2018.

[Conference Abstract]

AN: 621737255

INTRODUCTION AND OBJECTIVES: Ureterscopy became the treatment option of first choice for upper tract stones, even for larger stone sizes. This development led to an increasing interest in optimizing the settings of the holmium laser. Factors as frequency, energy, pulse length or shape do substantially influence the effect of the laser on the stone. Aim of our prospective study

was to evaluate the outcomes of ureteroscopic stone treatment in two high-volume stone centers comparing two typical laser settings for fragmenting and dusting.

METHOD(S): Patients with solitary ureteral or renal stones were included in the prospective data assessment. All patients were treated under general anesthesia and fluoroscopic control.

Perioperative antibiotic prophylaxis was applied or UTIs were treated preoperatively.

Ureteroscopy was performed using rigid or flexible scopes (7-8.5 F, Karl Storz Endoscopes, Germany). Stone disintegration was performed using a holmium laser (Dornier Medilas H Solvo, Germany) and 275um ball-tip laser fibers. The lithotripsy settings (dusting (D)= 18-20 Hz, 0.4-0.6J, or fragmenting (F)= 8-12 Hz, 1.2-1.8 J) were chosen according to the surgeon's preference. A total of 177 patients were treated. Statistical analysis was performed by two-sided t-test.

RESULT(S): Stones sizes in both groups were comparable (D: 93 vs. F: 76 mm, $p=0.2$). Pre-stenting was common (D: 83% vs. F: 87%; n.s.). 116 stones were located in the kidney, 61 stones in the ureter. Ureteral access sheaths were used in 83% of renal stones. Fragmenting was chosen for 49/116 renal and 43/61 ureteral stones. Overall OR time was comparable (D: 47 vs. F: 50 min.; n. s.) but laser time was significantly longer for dusting (456 sec. vs. 63 sec.; $p<0.01$). Dusting had a negative impact on intraoperative vision in 46% compared to 27% (F), $p<0.05$). On day 1, all but one patients with ureteral stones were stone free with both settings. With fragmenting, SFR was 91.8% for renal stones, while after dusting stone residuals were seen on KUB in 34%. Intra- and postoperative complications were comparable

CONCLUSION(S): Both concepts for laser lithotripsy demonstrated efficacy. However, by definition, dusting cannot achieve an immediate stone free status thus close follow-up is mandatory. We therefore recommend dusting settings for patients with large stone mass or when direct extraction seems difficult due to anatomic factors. Fragmenting and direct stone extraction should be attempted whenever possible.

Status

CONFERENCE ABSTRACT

Institution

(Knoll, Jessen, Wendt-Nordahl) Sindelfingen Germany (Sieg, Bach) Hamburg Germany

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453.

Use of dusting technique: Risk of repeat intervention after ureteroscopy for renal and ureteral stones.

Iremashvili V., Li S., Hedican S.P., Best S.L., Nakada S.Y.

Embase

Journal of Urology. Conference: 2018 Annual Meeting, American Urological Association, AUA 2018. San Francisco, CA United States. 199(4 Supplement 1) (pp e916), 2018. Date of Publication: April 2018.

[Conference Abstract]

AN: 621736970

INTRODUCTION AND OBJECTIVES: Some patients who undergo ureteroscopy and laser lithotripsy (URS) have residual stone fragments (RFs). The goal of this study was to find out if the presence of RFs increased the risk of repeat surgery in the same renal unit among patients who underwent URS at our institution.

METHOD(S): The study included 215 patients who had URS for nephrolithiasis at our hospital between 2008 to 2016, had imaging within 3 months after the intervention and at least one year of follow-up. Dusting technique of laser lithotripsy was used. Patients were divided into subgroups based on the presence of RFs and the size of the largest fragment seen on the first postoperative imaging. Most patients had plain abdominal X-rays (71%), while computerized tomography was done in 16% and ultrasound in 13%. Multivariate Cox regression analysis was performed to compare the risk of repeat surgery among patients with different volumes of residual nephrolithiasis to that in patients with no stones on the first postoperative imaging.

RESULT(S): No RFs were found in 134 (62.3%) patients while 17 (7.9%), 21 (9.8%), 14 (6.5%) and 29 (13.5%) had stones of up to 2 mm, 3-4 mm, 5-6 mm and more than 6 mm respectively. Over a median follow-up of 2.2 years (mean 2.9, IQR 1.5-3.9 years) 61 (28.4%) patients required another surgery on the same renal unit for symptomatic stone disease. Table 1 demonstrates results of the multivariate Cox regression analysis which compared the treatment-free survival depending on the postoperative stone burden. The risk of repeat surgery was increased in all subgroups of patients with RFs, however it was lowest among patients with stones less than 2

mm and 3-4 mm in size. These patients were combined into one group for the Figure 1 which shows the repeat surgery-free survival curves.

CONCLUSION(S): Our findings suggest that even small residual stone burden seen on the imaging after URS is associated with increased risk of repeat surgical interventions. (Table presented) .

Status

CONFERENCE ABSTRACT

Institution

(Iremashvili, Li, Hedican, Best, Nakada) MadisonWIUnited States

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454.

Cost-effectiveness of dusting vs. basketing intrarenal stones: A study from the edge consortium. Ursiny M., Yaghoubian A., Humphreys M., Chew B., Monga M., Krambeck A., Sur R., Miller N., Chang Y.-H., Knudsen B., Matlaga B., Shah O., Eisner B.

Embase

Journal of Urology. Conference: 2018 Annual Meeting, American Urological Association, AUA 2018. San Francisco, CA United States. 199(4 Supplement 1) (pp e1046-e1047), 2018. Date of Publication: April 2018.

[Conference Abstract]

AN: 621736827

INTRODUCTION AND OBJECTIVES: To assess the costeffectiveness of ureteroscopic laser fragmentation techniques for the treatment of renal stones using a decision analysis model.

METHOD(S): Outcomes data from a prospective trial of "dusting" versus "basketing" trial performed by the EDGE consortium were utilized. A decision analysis model was constructed to compare the costeffectiveness of two methods of ureteroscopic lithotripsy: dusting stones completely versus fragmentation with basket removal. For disposable equipment costs, a basket, ureteral stent, and ureteral access sheath (UAS) were used for each basketing procedure whereas for dusting, a ureteral stent was used in 16% of procedures and there was no basket or UAS use. Expected value calculations with Markov modeling and sensitivity analysis was used to determine the optimal method based on overall cost-effectiveness inclusive of equipment, time, secondary costs from complications, emergency department visits, hospital readmission, and re-interventions. Cost of operating room disposables were obtained from manufacturers. Costs of emergency department visits, readmissions, immediate and delayed re-interventions were calculated based on published figures from the literature and carried out to 3 years post-operatively. Capital costs of purchasing various laser consoles were not included in this analysis.

RESULT(S): One hundred fifty nine patients were included in the Study-84 ureteroscopy with dusting, 75 ureteroscopy with basketing. Decision analysis modeling demonstrated that on a per-procedure basis, dusting and basketing procedures had average costs of \$6,324 and \$7,667, respectively. The difference in cost for the 2 procedures was largely driven by differences in operative time (mean operative time for basketing = 67 min, mean operative time for dusting = 37 min). This represents an estimated savings of \$1343 per procedure when using the dusting technique.

CONCLUSION(S): Our decision analysis model demonstrates superior cost-effectiveness for ureteroscopy with dusting compared to ureteroscopy with basketing for intrarenal stones. The cost-savings are primarily due to a substantially shorter operative time. Based on these findings, careful stratification and selection of stone patients may enable surgeons to improve cost-effectiveness of ureteroscopic lithotripsy for intrarenal stones.

Status

CONFERENCE ABSTRACT

Institution

(Ursiny, Yaghoubian, Eisner) BostonMAUnited States (Humphreys, Chang) ScottsdaleAZUnited States

(Chew) VancouverCanada

(Monga) ClevelandOHUnited States

(Krambeck) IndianapolisINUnited States

(Sur) San DiegoCAUnited States

(Miller) NashvilleTNUnited States

(Knudsen) ColumbusOHUnited States

(Matlaga) BaltimoreMDUnited States

(Shah) New YorkNYUnited States

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455.

Bench and clinical testing of two single use and one reusable digital ureterorenoscope.

Scotland K., Rebullar K., Chew B.

Embase

Journal of Urology. Conference: 2018 Annual Meeting, American Urological Association, AUA 2018. San Francisco, CA United States. 199(4 Supplement 1) (pp e322), 2018. Date of Publication: April 2018.

[Conference Abstract]

AN: 621736523

INTRODUCTION AND OBJECTIVES: Flexible ureteroscopy is now the gold standard for management of most renal and proximal ureteral calculi. However, the cost associated with maintenance of these ureteroscopes can be prohibitive. The introduction of two new single use flexible digital ureteroscopes has provided a possible cost effective alternative to reusable scopes. The aim of this study was to evaluate the performance of these ureteroscopes.

METHOD(S): The LithoVue (Boston Scientific) and Uscope (Pusen Medical) disposable ureteroscopes were compared to the Flex- XC (Storz) reusable scope on bench testing and clinically in the surgical management of renal calculi. A comprehensive investigation of bench parameters including deflection, tip and shaft diameter, color representation and imaging characteristics (distortion, resolution, field of view) was undertaken. Subsequently, the

ureteroscopes were evaluated for performance in renal calculus patients. Visualization, access to calyces and ease of use of accessories including laser fibers and stone baskets were compared. RESULT(S): Deflection of the LithoVue and Uscope devices compared favorably to the reusable scope both with the working channel empty and in use. They were comparable to the Flex- XC reusable scope with respect to image distortion. The LithoVue demonstrated superior deflection and irrigation flow while the Uscope showed better color representation and field of view. The Flex- XC had the best image resolution. In vivo, all scopes were able to access the upper, mid and lower poles with equal ease. Visibility was comparable among the scopes on access to the collecting system and while performing laser lithotripsy and basket extraction of stones.

CONCLUSION(S): The two single use flexible digital ureteroscopes are comparable to an existing reusable scope in maneuverability, visualization of the collecting system and ease of use of accessories. The disposable scopes are particularly useful in treating difficult to access calculi since there is less concern for ureteroscope damage. The choice of ureteroscope will depend on the type of case anticipated and the economic considerations of a given urologist or institution.

Status

CONFERENCE ABSTRACT

Institution

(Scotland, Rebullar, Chew) VancouverCanada

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456.

First clinical study on superpulse thulium fiber laser for lithotripsy.

Traxer O., Rapoport L., Tsarichenko D., Dymov A., Enikeev D., Sorokin N., Ali S., Akopyan G., Korolev D., Proskura A., Lekarev V., Klimov R.

Embase

Journal of Urology. Conference: 2018 Annual Meeting, American Urological Association, AUA 2018. San Francisco, CA United States. 199(4 Supplement 1) (pp e321-e322), 2018. Date of Publication: April 2018.

[Conference Abstract]

AN: 621736481

INTRODUCTION AND OBJECTIVES: Ho:YAG laser wavelength of 2.1 mm is off the peak of water absorption and the efficiency of stone fragmentation can be improved by using a laser with wavelength matching peak water absorption at 1.94 mm, where water absorbs 4.5 times more efficiently than at 2.1 mm. Previous in vitro studies have shown that thulium (Tm) fiber laser operating at wavelength 1.94 mm can be effective for stone fragmentation. Recently, we have evaluated in vitro performance of Super-Pulse Tm fiber laser prototype and found its efficiency to be higher than the leading Ho:YAG laser for fragmentation (x1.7 times) and dusting (x2.3 to 4 times) for equal energy and rep rate settings. This is pilot clinical evaluation of the first commercially available Super-Pulse Tm fiber laser system for lithotripsy.

METHOD(S): The Super-Pulse Tm fiber laser device has been cleared for clinical use by the Ministry of Health of Russian Federation and the protocol has been approved by the institutional Ethical Review committee. We prospectively analyzed 40 patients who underwent Super-Pulse Tm fiber laser lithotripsy for renal (n=29), ureteral (n=9), and bladder stones (n=2) with various laser settings. Size of the stone, its density, operation time, "laser on" time were measured.

Based on surgeon's feedback, retropulsion and intraoperative visibility were assessed.

Postoperative parameters were recorded.

RESULT(S): For renal stones, the average size was 15.6 mm (5.5-27 mm), for ureteral stones- 9.6 mm (5-13 mm), for bladder Stones-28 mm (15-42 mm). The average stone density for renal stones was 1217 HU (524-2053 HU), for ureteral stones - 1262.2 HU (700-1782 HU), for bladder stones-839.5 HU (779-900 HU). The average time to complete renal stone fragmentation (to dust or small fragments and their washing out) was 30.2 min (10-50 min), for ureteral stones-19.2 min (10-28 min), for bladder stones-23 min (21-25 min). The retropulsion during miniPCNL and URS in the vast majority of cases was insignificant especially when using dusting mode with energy level less than 0.5 J. Visibility was estimated as optimal by surgeons in most cases.

Fragmentation mode with energy level 2 to 6 J and repetition rate 5-10 Hz was most suitable for bladder stone disintegration.

CONCLUSION(S): Our preliminary data indicate high efficiency and safety of the novel Super-Pulse Tm fiber laser lithotripter with wavelength 1.94 mm for urinary stone disintegration. Wide range of settings (0.05 to 6 J; 5 to 2000 Hz) available for this laser allows efficient destruction of

stones of any composition and location in both dusting and fragmentations modes. Further studies will confirm those results.

Status

CONFERENCE ABSTRACT

Institution

(Traxer) ParisFrance (Rapoport, Tsarichenko, Dymov, Enikeev, Sorokin, Ali, Akopyan, Korolev, Proskura, Lekarev, Klimov) MoscowRussian Federation

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457.

Endoscopic stone measurement during ureteroscopy.

Ludwig W., Lim S., Stoianovici D., Matlaga B.

Embase

Journal of Urology. Conference: 2018 Annual Meeting, American Urological Association, AUA 2018. San Francisco, CA United States. 199(4 Supplement 1) (pp e475-e476), 2018. Date of Publication: April 2018.

[Conference Abstract]

AN: 621735718

INTRODUCTION AND OBJECTIVES: Currently, stone size cannot be accurately measured while performing flexible ureteroscopy (URS). We developed novel software for ureteroscopic, stone size measurement, and then evaluated its performance.

METHOD(S): A novel application capable of measuring stone fragment size, based on the known distance of the basket tip in the ureteroscope's visual field, was designed and

calibrated in a laboratory setting. Complete URS procedures were recorded and 30 stone fragments were extracted and measured using digital calipers. The novel software program was applied to the recorded URS footage in order to obtain ureteroscopy-derived stone size measurements. These ureteroscopy-derived measurements were then compared to the actual measured fragment size.

RESULT(S): The median longitudinal and transversal error was 0.14 mm (95%CI 0.1-0.18) and 0.09 mm (95%CI 0.02-0.15), respectively. The overall software accuracy and precision were 0.17 mm and 0.15 mm, respectively. The longitudinal and transversal measurements obtained by the software and digital calipers were highly correlated ($r=0.97$ and 0.93). Neither stone size nor stone type was correlated with error measurements.

CONCLUSION(S): This novel method and software reliably measured stone fragment size during URS. The software ultimately has the potential to make ureteroscopy safer and more efficient.

Figure 1. Method of stone measurement. (a, c) Stone fragment as measured by digital calipers. (b, d) The same stone as measured by software. The fragment is grasped within the basket and the basket tip serves as the reference point for stone measurement. A scale can be seen around the periphery of the image, with a 1 mm measurement marked in yellow. Stone can also be measured by selecting the limits of the stone (seen in green, with corresponding stone measurement of 4.11 and 1.82 mm). (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Ludwig, Lim, Stoianovici, Matlaga) Baltimore MD United States

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Dusting vs. retrieval: A systematic review of ureteroscopic techniques and stone-free rates for holmium laser lithotripsy.

Aldoukhi A.H., Osumah T., Dauw C., Hollingsworth J., Roberts W.W., Ghani K.R.

Embase

Journal of Urology. Conference: 2018 Annual Meeting, American Urological Association, AUA 2018. San Francisco, CA United States. 199(4 Supplement 1) (pp e679), 2018. Date of Publication: April 2018.

[Conference Abstract]

AN: 621735655

INTRODUCTION AND OBJECTIVES: During ureteroscopy (URS), stones may be actively retrieved after laser fragmentation, or left in situ for spontaneous passage, a technique popularly called "dusting". We undertook a systematic review to explore laser techniques and stone-free rates (SFR) for URS to treat upper urinary tract stones.

METHOD(S): We conducted a Pubmed review (until April 2017) restricted to adult patients/English language following Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology. Keywords were ureteroscopy, laser, lithotripsy, and medical subject headings (MeSH) terms ureteroscopy & lithotripsy, laser. Inclusion criteria were elective URS with the holmium laser. Exclusion criteria included pregnancy, spinal cord injury, bleeding diatheses, and treatment of residual fragments. Studies were assigned to one of three groups: 1) "spontaneous passage" - fragmentation to smallest possible fragment, left for passage, and no basket used; 2) "active retrieval" - attempts made to retrieve all fragments; 3) "combination technique" - baskets used when necessary, large fragments extracted while small ones left for passage. Technical criteria and the SFR following a single procedure was collated.

RESULT(S): We identified 908 studies of which 108 were included in the final analysis consisting of 112 study cohorts: 22% spontaneous passage, 28% active retrieval, 26% combination technique, and 24% not specified. Follow-up imaging consisted of a variety of methods, with CT used in only 18% of studies. Figure 1 presents the stone clearance (fragments ≤ 4 mm) for each technique. The mean zero-fragment rate for renal stones was 75%, 79%, 68% for spontaneous passage, active retrieval, and combination techniques, respectively. 68% of spontaneous passage studies reported technical criteria related to the holmium power/settings. No study used a dusting technique with frequency >20 Hz.

CONCLUSION(S): Evidence on retrieval vs dusting is confounded by study design, lack of technical detail, disparate SFR definitions and variation in imaging follow up. Stone clearance rates are similar for all techniques when treating renal or ureteral stones. Our review

demonstrates the need for studies assessing the impact of high frequency/low pulse energy techniques on stone clearance outcomes.

Status

CONFERENCE ABSTRACT

Institution

(Aldoukhi, Osumah, Dauw, Hollingsworth, Roberts, Ghani) Ann ArborMIUnited States

Publisher

Elsevier Inc.

Year of Publication

2018

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459.

The new device for lithoextraction during conventional PCNL. No baskets, no graspers.

Ali S., Grigoriev N., Ali H., Bezrukov E., Sukhanov R., Dymov A., Glybochko P.

Embase

Journal of Urology. Conference: 2018 Annual Meeting, American Urological Association, AUA 2018. San Francisco, CA United States. 199(4 Supplement 1) (pp e324), 2018. Date of Publication: April 2018.

[Conference Abstract]

AN: 621735112

INTRODUCTION AND OBJECTIVES: Traditional percutaneous nephrolithotomy (PCNL) with pneumatic/laser lithotripsy requires the use of lithoextractors. PCNL is associated with additional economic and time costs. We developed a new device that may offer an alternative to the lithoextractors.

METHOD(S): In collaboration with the Institute of Theoretical Physics we invented a new additional Amplatz device for PCNL, that is for the inflow of the irrigational fluid into the cavity of

the pelvicalyceal system through the sheath and the outflow through the irrigation channel of the nephroscope. Taking into consideration the change of the core principles of the fluid flow circulation the method was named <<The Inversion Technique>>. 21 patients with a single kidney stone were enrolled in the prospective non-randomized study. For the first group (1st, N=10) an additional device was used to create the inversion flow of the fluid, while for the second group (2nd, N=11) a conventional PCNL with a traditional fluid supply through the nephroscope was performed. Each surgery was video recorded in order to estimate the exact time required for the change of the instruments used in the 1st group and lithotripsy duration in the 2nd group. In addition, changing of the intrarenal pressure stone-free rate (SFR) and complications were evaluated.

RESULT(S): The stones sizes were 23+/-3 mm in the 1st and 23.5+/-2 mm 2nd group, respectively. The average time of procedure was 45+/-10min in the 1st group and 50+/-3 min - 2nd group. The median of the overall time of both lithotripsy and lithoextraction was 14+/-2 min in the first group and 17+/-3 min in the 2nd group. The required time for the instruments change in the 2nd group was 8+/-4 min. No complications were noted in the postoperative period. The SFR was 99% in the 1st group and 96% in the 2nd group. The intrarenal pressure of the 1st group did not exceed 10cm H₂O, of the 2nd - 55cm H₂O.

CONCLUSION(S): The new approach is safe and enables to reduce the time of lithotripsy in case of the simultaneous lithoextraction. Achievement of the effect even at vertical position, the possibility of the permanent capture of fragments, no proximal migration of the stones and no significant changes of the intrapelvical pressure were observed. The above-mentioned advantages allow to avoid the use of lithoextractors in routine treatment of the stones.

Status

CONFERENCE ABSTRACT

Institution

(Ali, Grigoriev, Ali, Bezrukov, Sukhanov, Dymov, Glybochko) Moscow Russian Federation

Publisher

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2018

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460.

Treatment of large kidney stones by using robotic assisted flexible ureteroscopy.

Saglam R., Patel A., Rassweiler J., Klein J., Farahat Y., Al Zarooni A., Bedir S., Muslumanoglu A., Tokatli Z., Sarica K.

Embase

Journal of Urology. Conference: 2018 Annual Meeting, American Urological Association, AUA 2018. San Francisco, CA United States. 199(4 Supplement 1) (pp e323), 2018. Date of Publication: April 2018.

[Conference Abstract]

AN: 621735011

INTRODUCTION AND OBJECTIVES: International guidelines universally recommend PCNL as the treatment of choice for large renal stones. In the past decade, many centers have reported on classical retrograde intra-renal surgery for large renal stones. Recently Robotic Assisted Retrograde Intrarenal Surgery provides better stone free rates with some more advantages for the patient, user and the endoscopic device.

METHOD(S): This video demonstrates the step-by-step technique and advantages of Avicenna Roboflex robotic assisted retrograde intra-renal surgery (RA-RIRS), the latest iteration of master-slave robotics in this field. Due to reduced invasiveness, the patient, a 50 year old Iraqi general surgeon, preferred this approach over PCNL. Noncontrast CT showed a large (2941.5mm³) left renal stone, with 1076 bone window Hounsfield units. Our previous studies have shown: a) an upper stone volume limit of 4000mm³ with HU of 1000 for RA-RIRS, yielding 89% single-session stone free rate; b) that ureteral access sheath size >11/13Fr allows 35 ml/min. irrigation without raising intrarenal pressure >25 cm water, optimizing safety and vision, while allowing irrigant and dust efflux compared to smaller sheaths.

RESULT(S): The RA-RIRS procedure was uncomplicated. Optimized efficiency led to single stage complete stone fragmentation (stone dusting time 74 minutes, fragmentation efficiency 32 mm³/min). RA-RIRS benefits to the surgeon included improved comfort + ergonomics, touch-screen adjustable endoscope motion scaling, laser fiber positioning, control of respiratory excursion + irrigation flow and less fatigue (no lead protection required).

CONCLUSION(S): The Avicenna Roboflex allows safe, efficient single stage treatment of renal stones larger than is recommended by current international guidelines. Key design features

optimize patient safety and instrument longevity significantly compared to manual operation and by reducing surgeon fatigue, optimizes potential for efficiency. (Figure presented) .

Status

CONFERENCE ABSTRACT

Institution

(Saglam, Farahat, Al Zarooni, Bedir, Tokatli) AnkaraTurkey (Patel) LondonUnited Kingdom

(Rassweiler) HeilbronnGermany

(Klein) UlmGermany

(Muslumanoglu, Sarica) IstanbulTurkey

Publisher

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2018

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461.

Variation in ureteral access sheath (UAS) size, and potential impact on safe intra-renal pressure (IRP) during retrograde intra-renal surgery (RIRS).

Patel A., Kabakci A.S., Tokatli Z., Sarica K., Saglam R.

Embase

European Urology, Supplements. Conference: 33rd Annual European Association of Urology Congress, EAU 2018. Copenhagen Denmark. 17(2) (pp e1792), 2018. Date of Publication: March 2018.

[Conference Abstract]

AN: 621479203

Introduction & Objectives: Optimal patient safety during lengthy minimally invasive and natural orifice surgery for large/complex renal stones requires precise IRP control, but IRP data with

different UAS - flexible ureterorenoscope (FUR) size combinations during RIRS are scarce. As part of the IDEAL robotic surgery framework, the IRP theme was studied for Robotic assisted (RA-) RIRS, which permits remote precise pump system inflow control (Elmed). in a parallel study, a 2Fr safety margin space (SMS) was found to be optimal between FURS outer shaft and UAS inner lumen size to permit safe IRP <30mmH₂O particularly at higher inflow rates. Due to the small size of this SMS and the recent advent of larger shaft disposable FUR instruments which could eat into it, the labeling accuracy of various commercially available UAS of different sizes from different manufacturers were evaluated for labeling quality control and manufacturing tolerances.

Material(s) and Method(s): Prior to placement in the Minnesota kidney model for ex-vivo IRP measurement, the outer diameter and the inner lumen sizes of various commonly available commercial new unused UAS were measured in 2 dimensions using a micrometer for accuracy. Data were compared to manufacturers labeling.

Result(s):

Conclusion(s): Both the outer and inner diameters of various commonly available UAS used during RIRS showed variations <1Fr compared to manufacturers labels. Alone, these variations may not seem to be of much concern, but in the context of longer operating times and only a 2Fr. minimum optimal SMS between FURS outer shaft and UAS inner lumen as found in our previous studies, they may significantly impact the safe operating time window upwards or downwards, particularly when stone dust or sand, formed when treating large upper urinary tract stone disease, is forced by irrigant efflux into the SMS where it may be come lodged as sludge. This important safety issue is highlighted by this study and requires further in vivo evaluation. (Table presented) .

Status

CONFERENCE ABSTRACT

Institution

(Patel) Spire Roding Hospital, Dept of Urology, London, United Kingdom (Kabakci) Hacettepe University, Dept of Bioengineering, Ankara, Turkey

(Tokatli, Saglam) Medica International Hospital, Dept. of Urology, Ankara, Turkey

(Sarica) Health Sciences University Kartal Training Hospital, Dept. of Urology, Istanbul, Turkey

Publisher

Elsevier B.V.

Year of Publication

2018

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462.

Ureteroscopic holmium laser lithotripsy using the Moses technology.

Aldoukhi A., Ghani K.

Embase

European Urology, Supplements. Conference: 33rd Annual European Association of Urology Congress, EAU 2018. Copenhagen Denmark. 17(2) (pp e1918), 2018. Date of Publication: March 2018.

[Conference Abstract]

AN: 621478821

Introduction & Objectives: Advances in pulse modulation during holmium laser lithotripsy have led to the development of the "Moses technology" in which the laser emits part of the energy to create an initial bubble, and the remaining energy is discharged once the bubble is formed so that it can pass through the already formed vapor channel. A recent preclinical study demonstrated better ablation efficiency when using the Moses mode compared to a regular holmium mode. The aim of this video is to outline the technical capabilities of the Moses technology in treating renal and ureteral stones.

Material(s) and Method(s): We present three cases of renal stones (24, 12 and 22, mm respectively) and one distal ureteral stone (7 mm) treated using a 120 Watt holmium laser system (P120, Lumenis, San Jose, CA) with the Moses technology. Moses has two distinct modes - "contact" and "distance" optimized for operation at a distance of around 1 mm, and at 2 to 3 mm from the stone surface, respectively. For the renal stones, we used dusting settings of low pulse energy and high frequency (LoPE-HiFr) at 0.4 to 0.5 J and 70-80 Hz utilizing Moses "Contact" and "Distance" modes, while for the ureteral stone we used fragmentation of 1 J x 8 Hz on "contact" mode. For use of low pulse energy and high frequency (LoPEHiFr) during laser lithotripsy. A 200 um Moses ball-tip laser fiber was used for all cases.

Result(s): In the first renal stone case, stone dusting with Moses contact mode followed by noncontact laser lithotripsy (popcorn) technique in the calyx at a setting of 0.5J x 80Hz (short pulse) resulted in complete clearance (computed tomography (CT) scan showed zero fragments).

The remaining renal stone cases required a hybrid technique with predominantly dusting followed by basket retrieval, utilizing a combination of Contact and Distance modes. A difficult to access upper pole stone buried in urothelium was tackled using the Distance mode successfully. Follow-up CT showed a 4 and 3 mm residual fragment, respectively. Activating the Moses Contact mode for fragmenting the ureteral stone demonstrated a significant reduction in retropulsion and stone migration.

Conclusion(s): The Moses technology allows utilization of a Contact mode that facilitates increased energy ablation, which can be helpful when dusting large renal stones in a single stage. For fragmentation, Moses Contact mode can reduce retropulsion, and is advantageous for treating ureteral stones. The Distance mode allows the laser fiber to target and break down stones in difficult to access calyces. Further studies are needed to better understand the safety aspects with regards to this technology especially Distance mode when working in the ureter.

Status

CONFERENCE ABSTRACT

Institution

(Aldoukhi, Ghani) University of Michigan, Dept. of Urology, Ann Arbor, United States

Publisher

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2018

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463.

ECIRS with disposable ureteroscope: Bilateral synchronous treatment.

Angerri Feu O., Emiliani E., Sanchez-Martin F., Millan F., Villavicencio H.

Embase

European Urology, Supplements. Conference: 33rd Annual European Association of Urology Congress, EAU 2018. Copenhagen Denmark. 17(2) (pp e1914), 2018. Date of Publication: March 2018.

[Conference Abstract]

AN: 621478725

Introduction & Objectives: Complete staghorn stones are always a challenging surgery, even more with concomitant stones in the contralateral ureter or renal pelvis. Endoscopic combined intrarenal surgery it's our standard treatment for this situation, using the flexible ureteroscopy for both sides.

Material(s) and Method(s): To reach a stone free status for both sides in a same procedure we use a flexible disposable ureteroscope (Lithovue, Boston Sci) and rigid and flexible-nephroscope. Two Holmium (Ho) lasers are required to work at the same time, in the same kidney or in different renal units. High power lasers are used for the nephroscopy and medium power for the disposable ureteroscope.

Result(s): A 55 y.o male patient with a complete left staghorn stone(6x4cm) and a 15x5 mm right distal ureteral stone was treated. In Valdivia supine position, cystoscopy was performed with the patient under general anesthesia. An ureteropelvic occlusion ballon catheter 6 fr / 75 cm /0.4ml is positioned. Keeping supine position the percutaneous tract was established. Puncture of the inferior calix using fluoroscope with 0degree - 90degree degrees technique. Second puncture to improve the access to all the kidney. Dilatation was achieved using a 20ATM balloon dilatator to accommodate a 24 Fr sheath. A 18Fr nephroscope was inserted using a 1000 mum fiber Ho laser. We set the energy 5,5J and 20 HZ . With high power laser we see fragments through the percutaneous acces. Meanwhile flexible ureteroscopy (with another laser) help treating the ureteroplevic junction on the same kidney and later on clearing the stone in the contra lateral ureter. We complete the extraction of the stones with a 4.5F Nitinol basket. A 18Fr nephrostomy tube and bilateral double J with a bladder catheter were left in place with minimal hematuria. The patient was discharged at 4rd day.

Conclusion(s): Bilateral synchronous treatment it could be done safely for the patient and without damaging your armamentarium using a flexible disposable ureteroscope.

Status

CONFERENCE ABSTRACT

Institution

(Angerri Feu, Emiliani, Sanchez-Martin, Millan, Villavicencio) Fundacio Puigvert, Dept. of Urology, Barcelona, Spain

Publisher

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464.

Micro-nephrolithotomy in a transplanted kidney: A peculiar indication for a niche procedure.

Zanetti S.P., Sampogna G., De Lorenzis E., Boeri L., Gallioli A., Palmisano F., Fontana M., Longo F., Ferraresso M., Montanari E.

Embase

European Urology, Supplements. Conference: 33rd Annual European Association of Urology Congress, EAU 2018. Copenhagen Denmark. 17(2) (pp e1912), 2018. Date of Publication: March 2018.

[Conference Abstract]

AN: 621478673

Introduction & Objectives: Micro-percutaneous nephrolithotomy (Micro-PCNL) is a minimally invasive technique proposed by Mahesh Desai as a one-step PCNL. It's performed using a 3 components 4.85 Fr all-seeing needle. The three-way port allows to connect the irrigation and to introduce a fiber optic and a laser fiber. Micro-PCNL is described as a promising treatment for solitary renal stones, with volume < 1000 mm³ and low density, regardless of stone location. Besides this, the Microperc set has recently been described for new indications such as ureteric, bladder and urethral stones and for treating non-calculus diseases like posterior urethral valves and vesico-ureteric reflux. In this video we present one more possible application of this set to treat a stone in a just transplanted kidney.

Material(s) and Method(s): We present the case of a 64 years old man with end stage renal disease needing a kidney transplant from a cadaveric donor. During pre-transplant ultrasonographic evaluation, a 7 mm stone was found in the kidney. During the transplant procedure, after vascular anastomosis, we proceeded with the stone removal. Before suturing the transplanted ureter to the bladder, a flexible ureteroscopy was attempted through a 10-12 Fr

ureteral access sheath but the access to the narrow calyx hosting the stone was not possible. Then, we decided to convert to a Micro-nephrolithotomy using the MicroPerc set. We punctured the kidney under Ultrasonographic control with the 4.85 Fr needle getting access to the target calix. After visualizing the stone, we proceeded with Holmium laser lithotripsy using the dusting setting until obtaining fragments < 1 mm. At the end, a double J stent was placed and the transplant procedure was concluded.

Result(s): We didn't register any intra or post-operative complication. One month after surgery the double J stent was removed uneventfully. The Ultrasound examination at 45 days showed the absence of residual fragments and the collecting didn't appear dilated.

Conclusion(s): MicroPCNL is a technique with very strict and selective indications in kidney stone disease. Nevertheless, its applicability in many different urological fields and in challenging situations makes it very attractive and it should be part of the armamentarium of the skilled endourologist.

Status

CONFERENCE ABSTRACT

Institution

(Zanetti, Sampogna, De Lorenzis, Boeri, Gallioli, Palmisano, Fontana, Longo, Montanari)

University of Milan, Dept. of Urology, Milan, Italy (Ferraresso) University of Milan, Dept. of Renal Transplantation, Milan, Italy

Publisher

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465.

Stone free outcomes of flexible ureteroscopy for renal calculi utilizing CT imaging.

Krambeck A., Elmansy H., Lingeman J., Rivera M., Zheng M., York N.

Embase

BJU International. Conference: 71st Annual Scientific Meeting of the Urological Society of Australia and New Zealand. Melbourne, VIC Australia. 121(Supplement 1) (pp 7), 2018. Date of Publication: February 2018.

[Conference Abstract]

AN: 621351993

Introduction and Objectives: Stone free rate (SFR) determines ureteroscopy (URS) success rates. Low dose renal only CT scan (LDCT) offers reduced radiation while preserving superior stone fragment visualization. We sought to assess stone free rates following URS for renal calculi at our high volume institution using LDCT.

Method(s): A retrospective review of patients undergoing flexible URS for renal stones only with subsequent CT scan within 3 months. Active stone retrieval with meticulous basketing of all stone fragments was performed whenever possible. A true, zero fragment SFR was determined by reviewing the CT scan and radiologist report. Patients with nephrocalcinosis (as determined by visual inspection of papilla at the time of URS) were assigned the stone free category.

Result(s): Flexible URS was performed in 288 renal units of 214 patients with intrarenal calculi from 2013 to 2016. Median preoperative stone size was 5 mm with the average kidney containing 6.4 stones. An access sheath was used in 92% of cases. A total of 73% (209/288) renal units were completely stone free by CT assessment. Patients with residual fragments were as follows: 1 mm in 2% (7/288), 2-4 mm in 16% (46/288) and >4 mm in 9% of kidneys (26/288).

Conclusion(s): The true stone free rate in patients undergoing flexible URS for renal calculi utilizing active basketing of fragments, as determined by strict CT assessment, was 73%. In patients with residual fragments, the majority are 2-4 mm in size, making URS a treatment option for renal calculi with excellent stone free results.

Status

CONFERENCE ABSTRACT

Institution

(Krambeck, Elmansy, Lingeman, Rivera, Zheng, York) Indiana University School of Medicine, Indianapolis, United States

Publisher

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2018

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466.

Inaccessible ureteric calculi in unilateral complete duplication of ureter: Our experience.

Rahul G., Jaydeep D., Shirish B., Subodh S.

Embase

Indian Journal of Urology. Conference: 51st Annual Conference of the Urological Society of India, USICON 2018. Jaipur India. 34(5 Supplement 1) (pp 36), 2018. Date of Publication: January 2018.

[Conference Abstract]

AN: 620924814

Introduction and Objective: Complete duplex ureters opening separately into the urinary bladder are extremely rare; they can be embryologically explained as a development of two ureteral buds separately from a single mesonephric duct.

Method(s): 65yr male presented to with Left flank pain intermittent colicky, c/o fever intermittent low grade, lower urinary tract symptoms. Clinical examination and Blood investigations were normal. Ultrasonography KUBleft hydronephrosis and hydroureter with 8.7 mm calculi in mid ureter. CT Urographycomplete duplication of ureter on left side with calculi in mid ureter draining the upper moiety with delayed excretion of contrast. Cystoscopyupper moiety ureteric orifice could not be identified. Hence retrograde access was not possible. Ureteric catheter in lower moiety ureter kept in place for differentiation. Upper moiety calyceal system was accessed antegrade under ultrasound guidance. Guide wire deployed, there was complete duplication of ureter with wire entering in the bladder medial and lower to lower moiety ureter. Tract dilated till 16 fr. 7.5 fr flexible ureteroscope was used. Stone was present in midureter, fragmented with Holmium laser and retrieved with basket. Follow up stent removal cystoscopy showed upper moiety ureteric orifice was too medial and directed upward.

Result(s): Stone was inaccessible in retrograde manner as ureteric orifice could not be identified. Stone was accessed in antegrade manner with flexible ureteroscope and complete stone clearance achieved

Conclusion(s): There could be variety of options to tackle the inaccessible ureteric stone and that depends on armamentarium (Ultrasound, flexible ureteroscope, Laser) available.

Status

CONFERENCE ABSTRACT

Institution

(Rahul, Jaydeep, Shirish, Subodh) Deenanath Mangeshkar Superspeciality Hospital, Pune, India

Publisher

Medknow Publications

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2018

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467.

Dusting utilizing suction technique (DUST) for percutaneous nephrolithotomy: use of a dedicated laser handpiece to treat a staghorn stone.

Ghani K.R., Aldoukhi A.H., Roberts W.W.

Embase

International braz j urol : official journal of the Brazilian Society of Urology. 44(4) (pp 840-841), 2018. Date of Publication: 01 Jul 2018.

[Article]

AN: 623307751

PMC Identifier

29135418 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=29135418>]

Institution

(Ghani) Department of Surgery, VA Ann Arbor Healthcare System, Ann Arbor, MI, United States

(Ghani, Aldoukhi, Roberts) Department of Urology, University of Michigan, Ann Arbor, MI, United States

Year of Publication
2018

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468.

Supine navigation percutaneous nephrolithotomy with endoscopic combined intra-renal surgery (ECIRS) in modified lithotomy.

Chau H.L., Ngo C.C., Cheng K.C.B., Chan H.C.W., Yuen K.K.S., Cheung M.H.P., Lam K.M.J., So H.S.

Embase

International Journal of Urology. Conference: 15th Urological Association of Asia Congress, UAA 2017. Hong Kong Hong Kong. 24(Supplement 1) (pp 6), 2017. Date of Publication: August 2017. [Conference Abstract]

AN: 617840771

Introduction and objectives To access the feasibility of supine navigation percutaneous nephrolithotomy with endoscopic combined intra-renal surgery to deal with urinary stones located in multiple sites. **Materials and methods** There are two cases with this approach done. The first patient presented with left distal ureteric stone, PUJ stone and lower pole stone. He was put in modified lithotomy with left sided abdomen slightly elevated. Lower pole puncture was achieved by USG with navigation system under magnetic field in single attempt. The magnetic field was created by a magnet placed closely to the operative site. The PUJ stone was fragmented with pneumatic compression device completely. The distal ureteric stone was migrated by the URS to upper ureter and removed together with the lower pole stone by 2.4Fr basket. Complete stone clearance and tube-less procedure performed. The second patient presented with right middle ureteric stone and left full staghorn stone. Simultaneous right ureteroscopic laser lithotripsy and left navigation percutaneous nephrolithotomy was performed similarly. The PCNL was further assisted by the URS scope to help further staghorn stone fragmentation. **Results** The first and

second operation time were 120 mins and 169 mins respectively. The first case achieved complete stone clearance and the second left with clinically insignificantly stone fragments. The patient was discharged on postoperative D1 for the first case and D5 for the second. There is no significant complication found for both cases. Conclusion Supine navigation percutaneous nephrolithotomy with endoscopic combined intra-renal surgery (ECIRS) in modified lithotomy is a feasible and safe option to deal with urinary stones in multiple sites.

Status

CONFERENCE ABSTRACT

Institution

(Chau, Ngo, Cheng, Chan, Yuen, So) United Christian Hospital, Hong Kong, Hong Kong

(Cheung, Lam) Tseung Kwan O Hospital, Hong Kong, Hong Kong

Publisher

Blackwell Publishing

Year of Publication

2017

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469.

Wireless flexible renal access by the modified ergonomic lithotripsy technique (MEL): A single centre experience.

Gauhar V., Biligere S., Heng C.T.

Embase

International Journal of Urology. Conference: 15th Urological Association of Asia Congress, UAA 2017. Hong Kong Hong Kong. 24(Supplement 1) (pp 58), 2017. Date of Publication: August 2017.

[Conference Abstract]

AN: 617840673

Introduction and objectives Retrograde intra renal surgery (RIRS) is now accepted for management of renal calculi even in large stones. In the MEL technique we modified the lithotomy position with definitive manoeuvres allowing the surgeon to be seated, limiting fatigue with an aim to achieve good stone free rate (SFR). After placement of access sheath the guide wire was removed and a wireless sheath guided lithotripsy was performed. We reviewed the technical aspects of this procedure and if not having a wire alongside the access sheath had any implication to RIRS by MEL technique especially on access and outcomes as wireless RIRS has been shown to be safe by Grasso et al.(1) in 2006 and the art of not keeping a safety wire in ureteral access was also reviewed by Clayman et al.(2) in 2016. **Materials and methods** 116 renal units were accessed by the MEL technique for calculi from 1 to 4 cm between July 2015 to Feb 2017. Patients were put in lithotomy position, diagnostic ureteroscopy done and in all men a 11-13 fr or 12/14 fr, access sheath was placed over the wire and wire removed. Olympus URf-V or V2 was used. Fragmentation/dusting or popcorning done by Dornier 40 watt low power laser. The table was given a head up incline at 35 degrees, respiratory rate controlled at 7-8 breaths per minute. 20 min prior to completion of procedure 10 mg furosemide was given to induce diuresis. Surgeons stool was raised such that his hands were at the level of access sheath while sitting to relax shoulders and allow normal manoeuvring without stress on flexible scope. A ct scan pre and post op to ensure adequate SFR at the end of 6 weeks post op. **Results** RIRS was successfully completed in all cases. Only 64 cases were pre-stented. No difficulty in access, performing any manoeuvre's or visibility issues encountered even with complex calyceal anatomy. Minimal fatigue especially for large calculi was experienced. Surgeons were seated throughout. Access sheath could be easily guided back to kidney with a scope if it slipped distally intra-op and did not need a safety wire to be reintroduced. Fragment retrieval with baskets was safely done without the safety wire in place. Drainage of all the dust was better without much need for manual pumping limiting need to slow down lithotripsy. There was no additional morbidity intra-op or post op due to this procedure. **Conclusion** The outcomes of MEL study is comparable like others before and shows that the safety guidewire can be eliminated without compromising ureteroscopy. In fact recent studies by Ulvik et al.(3) have begun to question whether the safety guidewire is indeed an impediment to ureteroscopy increasing the shearing effect of advancement and retraction force of the expensive scopes significantly both leading to possible damage to scope and ureter. What was once a "help" may now be more of a "hindrance".

Status

CONFERENCE ABSTRACT

Institution

(Gauhar, Biligere, Heng) Urology, Ng Teng Fong General Hospital, Singapore, Singapore

Publisher

Blackwell Publishing

Year of Publication
2017

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470.

The prospective comparative evaluation of Ho:YAG laser fragmentation vs dusting techniques in the treatment of renal calculi larger than 2 cm.

Lee J.C.X., Lum S.X., Lee G.

Embase

International Journal of Urology. Conference: 15th Urological Association of Asia Congress, UAA 2017. Hong Kong Hong Kong. 24(Supplement 1) (pp 56), 2017. Date of Publication: August 2017. [Conference Abstract]

AN: 617840396

Introduction and objectives The preferred treatment of large renal calculi (>2 cm) has traditionally been Percutaneous Nephrolithotomy (PCN) to achieve better stone-free rates. Despite the improvement of instrument, PCN can still be associated with higher morbidity. The advancement of endoscopic digital imaging and laser technology has generated new interests in utilizing retrograde intrarenal surgery (RIRS) for the removal of larger renal stones. We conduct a prospective comparative evaluation of Ho:YAG laser conventional fragmentation vs dusting technique, in the treatment of larger renal calculi, with RIRS. **Materials and methods** Patients with stone sizes of >2 cm, diagnosed on CT-Urogram (CTU), were prospectively recruited for RIRS with flexible ureterscopic (7.5 Fr) stone extraction. The patients are randomized to Ho:YAG conventional fragmentation (StoneLight 30 Laser system, New Star lasers, Inc.) or dusting technique (Rhapsody H-30 Holmium laser system, Cook Medical, Inc). The patient profile and pre-operative stone characteristics were reported. The intraoperative laser utilization, duration of intervention, perioperative complications and the necessity for ureteric stents were also recorded. Post-operative stone clearance was assessed by CTU 2 weeks following the removal of stents.

Results Eight patients were recruited for the study with the mean age of 42 years (Range 23-63 Years), all presented with unilateral renal calculi. Four patients were recruited to each treatment arm with equal distribution of gender participants. The mean age of patients receiving dusting technique was 49 Years (Range 33-63 Years), with stone burden of 2.35 cm (Range 2.0-2.6 cm). While the mean age of patients underwent conventional fragmentation was 44 Years (Range 23-53 Years), with stone burden of 2.4 cm (Range 2.1-2.6 cm). The patients underwent dusting technique had operative time of 44 min (Range 40-46 min) and hospital stay of 26 h (Range 24-28 h), while the conventional fragmentation recorded an operative duration of 62 min (Range 56-72 min) and hospital stay of 32 h (Range 28-36 h). None of the participants had a stent postoperatively after the dusting technique and three patients required post-operative stenting after conventional stone fragmentation. Stone-free status was achieved in all patients and no significant adversity was recorded in both arms. Conclusion RIRS with flexible ureteroscopic treatment of stones larger than 2 cm is gaining popularity with the miniaturization of digital instruments and the advancement of new laser technology. Although such intervention may not be suitable for all patients with large renal calculi, for selected patients with favorable stone locations, such treatment has less morbidity and equivalent stone clearance as PCN. The utilization of Ho:YAG laser dusting technique with RIRS has the advantages of shorter operative time and hospital stay, with less risk of post-operative stenting or associated complications.

Status

CONFERENCE ABSTRACT

Institution

(Lee) Wellington College, Crowthorne, United Kingdom (Lum) Medicine, Shanghai Jiao Tong University School of Medicine, Shanghai, China

(Lee) Urology, Monash University, Kuala Lumpur, Malaysia

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471.

Tipless Nitinol Stone Baskets: Comparison of Penetration Force, Radial Dilation Force, Opening Dynamics, and Deflection.

Patel N., Akhavein A., Hinck B., Jain R., Monga M.

Embase

Urology. 103 (pp 256-260), 2017. Date of Publication: May 2017.

[Article]

AN: 614504994

Objective To evaluate 5 commercially available tipless nitinol baskets (2.2F) in 4 performance factors: penetration force, radial dilation force, opening dynamics, and deflection limitation.

Materials and Methods The 2.2F Coloplast Dormia No-Tip, 1.5F Sacred Heart Medical Halo, 2.2F Cook NCircle Nitinol Tipless Stone Extractor, 1.9F Bard SkyLite Tipless Nitinol Basket, and 1.9F Boston Scientific Zero Tip Nitinol Stone Retrieval Basket were tested for penetration force (safety metric), radial dilation force (functional metric for ureteral calculi), and opening or closing dynamics. Limitation of deflection (functional metric) was tested by measuring the difference in maximal upward and downward angle of deflection of a ureteroscope with and without a basket in place. Results The Sacred Heart Medical Halo 1.5F basket had the highest mean force required to perforate the foil at 0.676N +/- 0.117 (P<.0001). The Sacred Heart Medical Halo 1.5F basket also had the highest mean radial dilation force at 3.04g+/-0.15 (P<.0001). The Cook NCircle Nitinol Tipless Stone Extractor 2.2F had the most linear pattern of opening, whereas the Coloplast Dormia No-Tip 2.2F and the Sacred Heart Medical Halo 1.5F exhibited exponential opening dynamics. The Cook NCircle Nitinol Tipless Stone Extractor 2.2F limited scope deflection the most with a decrease in 4degree downward and 10degree upward. The Sacred Heart Medical Halo 1.5F had the least influence on deflection with a decrease in 3degree downward and 5degree upward. Conclusion The penetration force, radial dilation force, opening dynamics, and resistance to deflection varied between 5 commonly available tipless nitinol stone baskets. A small diameter 1.5F basket is capable of providing optimal performance while sacrificing linear opening.

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Status

Embase

Author NameID

Patel, Nishant; ORCID: <http://orcid.org/0000-0002-2461-5363> Akhavein, Arash; ORCID: <http://orcid.org/0000-0001-7982-7497>

Jain, Rajat; ORCID: <http://orcid.org/0000-0003-0453-5574>

Institution

(Patel, Akhavein, Hinck, Jain, Monga) Department of Urology, Glickman Urological and Kidney Institute, Cleveland Clinic Foundation, Cleveland, OH, United States

Publisher

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Year of Publication

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472.

Ureteral Stone in the Distal Blind-ending Branch of a Bifid Ureter.

Niwa N., Ohigashi T., Bessho H., Arakawa T.

Embase

Urology. 99 (pp e23-e24), 2017. Date of Publication: 01 Jan 2017.

[Article]

AN: 613767679

A bifid ureter with a distal blind-ending branch is a rare congenital anomaly. Most patients are asymptomatic; only patients with complications, such as infection, vesicoureteral reflux, or stone formation, present symptoms. We describe the case of a patient with urinary stone located in the distal blind-ending branch of a bifid ureter diagnosed during transurethral lithotripsy. Preoperative noncontrast-enhanced computed tomography did not reveal a stone in the distal blind-ending branch of the bifid ureter, but a rigid ureteroscope did; however, it could not reach the stone.

Therefore, the stone was extracted using a basket catheter under a flexible ureteroscope.

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PMC Identifier

27765592 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=27765592>]

Status

Embase

Institution

(Niwa, Ohigashi, Bessho) Department of Urology, International University of Health and Welfare Mita Hospital, Tokyo, Japan (Arakawa) Lithotripsy Center, International University of Health and Welfare Mita Hospital, Tokyo, Japan

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Year of Publication

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473.

Re: High-Frequency Dusting versus Conventional Holmium Laser Lithotripsy for Intrarenal and Ureteral Calculi.

Assimos D.G.

Embase

The Journal of urology. 197(6) (pp 1478-1479), 2017. Date of Publication: 01 Jun 2017.

[Note]

AN: 626124810

PMC Identifier

28505914 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=28505914>]

Publisher

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Year of Publication

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474.

Flexible ureteroscopy: technique, tips and tricks.

Doizi S., Traxer O.

Embase

Urolithiasis. 46(1) (pp 47-58), 2018. Date of Publication: 01 Feb 2018.

[Review]

AN: 619600590

During the last decades, the surgical management of kidney stones benefited of many technological advances and one of them is the development of flexible ureteroscopy (fURS). This tool, ancillary equipment such as graspers and baskets, and lithotripsy technique with Holmium:YAG laser underwent many improvements leading to a widening of its indications with diagnostic and therapeutic management of upper urinary tract pathologies such as urolithiasis and urothelial tumors. The objective of this review is to describe the surgical technique for fURS as well as tips and tricks for the treatment of renal stones.

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PMC Identifier

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Status

Embase

Institution

(Doizi, Traxer) Department of Urology, Tenon Hospital, Assistance-Publique Hopitaux de Paris, 4 rue de la Chine, Paris 75020, France (Doizi, Traxer) Pierre et Marie Curie University, Paris, France

(Doizi, Traxer) Groupe de Recherche Clinique sur la Lithiase Urinaire, Tenon Hospital,
Assistance Publique-Hopitaux de Paris, Paris, France

Publisher

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Year of Publication

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475.

Applying quantitative micro-Raman spectroscopy to analyze stone compositions extracted from
ureteroscopic lithotripsy urine.

Chang C.-C., Chiu Y.

Embase

Urological Science. 28(1) (pp 19-22), 2017. Date of Publication: 01 Mar 2017.

[Article]

AN: 611450775

Objective In this study we applied quantitative micro-Raman spectroscopy (MRS) in binary stone compositions extracted from ureteroscopic lithotripsy (URSL) urine. Urolithiasis is a severe disease with a great impact. For ureteral stone patients, a basket retractor is used to catch the stone for analysis when patients undergo URSL. However, this can cause potential ureteral-related complications. The identification of the composition of a urinary stone is important for metabolic evaluation, decision making, and diet control. In this study, we applied a quantitative MRS method in a clinical setting to measure the composition of binary urinary stones in urine extracted via URSL. **Materials and Methods** This study was approved by the Institutional Review Board of Taipei City Hospital, Taipei, Taiwan from November 2008 to November 2009. Urine samples from fragmented stone sites in the patients' ureters were collected via the URSL procedure by drawing at least 10 mL of urine with a syringe. The urine samples from 30 patients

were analyzed using an MRS-based analysis method, both qualitatively and quantitatively. Results The post-URSL urine powder from the samples was successfully analyzed using a quantitative MRS-based method, which was based on a linear equation developed according to the ratios of the relative intensities of the Raman bands corresponding to binary mixtures of known composition. Fourteen urine samples from 30 patients disclosed binary composition, and the ratio percentages were obtained using the equation along with a quantitative MRS-based method. Conclusion We successfully applied the quantitative MRS-based method clinically to analyze the stone compositions extracted from URSL urine. This method decreases the need to use a basket to catch macrostones for Fourier transform infrared spectroscopy analysis, while also still providing quantitative and quantitative stone analysis information by using the microstones in urine.

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Author NameID

Chiu, Yichun; ORCID: <http://orcid.org/0000-0002-0750-4856>

Institution

(Chang, Chiu) Division of Urology, Department of Surgery, Zhong Xiao Branch, Taipei City Hospital, Taipei, Taiwan (Republic of China) (Chang, Chiu) Department of Urology, School of Medicine, National Yang-Ming University, Taipei, Taiwan (Republic of China)

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Ureteral Obstruction Due to Radiolucent Atazanavir Ureteral Stones.

Grant M.T., Eisner B.H., Bechis S.K.

Embase

Journal of Endourology Case Reports. 3(1) (pp 152-154), 2017. Date of Publication: March 2017.

[Article]

AN: 624782915

Background: Protease inhibitors (PIs) are a well-documented cause of nephrolithiasis. Although medications such as indinavir are known to increase risk of stone formation, the association of newer HIV medications is not as well studied. In this study, we report a case of a patient who developed atazanavir stones. Case Presentation: A 74-year-old man with HIV on antiretroviral therapy - including atazanavir, a PI - presented with right flank pain. He previously had passed two ureteral stones that were not analyzed. A CT scan showed mild right hydronephrosis without evidence of nephrolithiasis or ureteral obstruction. The patient was presumed to have passed a stone and was discharged home. He returned one day later with persistent flank pain and acute kidney injury that did not improve with intravenous fluid hydration. A right ureteral stent was placed that relieved his symptoms. Subsequent ureteroscopy demonstrated bilateral ureteral stones that were basket extracted. Stone composition was 100% atazanavir. Since being switched off of this medication, the patient has not had any further episodes of renal colic and his renal function has improved to below his baseline level on presentation.

Conclusion(s): Patients treated with the PI atazanavir are at risk for developing nephrolithiasis and obstructive uropathy. Because these stones can be radiolucent on CT scan, a high level of suspicion is required to accurately diagnose ureteral obstruction in these patients. Alternative effective HIV treatment regimens can be utilized when clinically indicated.

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Status

Embase

Institution

(Grant, Eisner) Department of Urology, Massachusetts General Hospital, GRB 1102, 55 Fruit Street, Boston, MA 02114, United States (Bechis) Department of Urology, University of California, San Diego Health, San Diego, CA, United States

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477.

Application of ureterorenoscope and flexible ureterorenoscope lithotripsy in removing calculus from extracorporeal living donor renal graft: A single-center experience.

Lin C.-H., Zhang Z.-F., Wang J., Yu L.-X., Wang W.-T., Shi L., Lin X.-N.

Embase

Renal Failure. 39(1) (pp 561-565), 2017. Date of Publication: 01 Jan 2017.

[Article]

AN: 624115608

Here, we reported our clinical application of ureterorenoscope (URS) and flexible URS lithotripsy in stone removal on 10 cases of excised living donor kidney graft. After the extraction of donor kidney by retroperitoneal laparoscopy, the donor graft was perfused with 4degree C HCA solution. Calculus between 2-4 mm were removed intact with lithotomy forceps under direct vision of URS. Larger calculi of >4 mm were fractured with flexible URS combining holmium laser lithotripsy. Fragments of the calculus were extracted with basket extractor and lithotomy forceps. All operations were successful. The operation time was 14-31 min (average 21.2 +/- 6.3 min). The kidneys were then transplanted to the recipients using routine procedure. The transplanted kidneys functioned well after transplantation. Gross hematuria resolved 1-4 d after operation (average 2.6 +/- 0.9 d). The transplanted kidneys functioned well without early complications such as functional recovery delay and acute graft rejection. The donors and recipients were followed for 12 months. The size of the transplanted kidneys was normal and new stones or urinary obstruction was not seen upon urinary color Doppler ultrasound examination. In conclusion, we believe it is feasible, safe and effective to use URS or flexible URS combining holmium laser lithotripsy on extracorporeal living donor kidney.

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PMC Identifier

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Embase

Institution

(Lin, Zhang, Wang, Yu, Wang, Shi, Lin) The Affiliated Yantai Yuhuangding Hospital of Qingdao University, Yantai, Shandong, China

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478.

Combined laparoendoscopic single-site ureterolithotomy and flexible cystoscopy in the treatment of concurrent large upper ureteral and renal stones.

Su J., Zhu Q., Yuan L., Zhang Y., Zhang Q., Wei Y., Shen L.

Embase

Scandinavian Journal of Urology. 51(4) (pp 314-318), 2017. Date of Publication: 04 Jul 2017.

[Article]

AN: 615272006

Objective: The aim of this study was to present the authors' experience with technical recommendations for the treatment of concurrent large upper ureteral and renal stones.

Method(s): Between September 2014 and March 2016, laparoendoscopic single-site surgery (LESS) ureterolithotomy with renal stone extraction or holmium laser lithotripsy under flexible cystoscopy was performed on 15 patients who had concurrent upper ureteral and renal stones. The ureteral stone was treated with LESS ureterolithotomy. After the ureteral stone had been removed, a flexible cystoscope was inserted through one of the laparoscopic ports into the renal pelvis and collecting systems. Renal stones were extracted with a stone basket or broken by a

holmium laser and then removed. The perioperative and postoperative data were collected and analyzed retrospectively. Patients were followed up postoperatively for evidence of long-term side-effects.

Result(s): Nine patients underwent LESS ureterolithotomy and flexible cystoscope-assisted renal stone extraction. Six patients underwent concomitant holmium laser lithotripsy because of larger renal stones. All procedures were completed successfully. The ureteral stones were 15-23 mm in diameter and the renal stones were 4-20 mm in diameter. The mean surgery time was 156 min. Estimated blood loss was 70 ml. Complete stone clearance was confirmed by postoperative imaging in all patients. The median length of hospital stay after surgery was 9.1 days. No intraoperative or postoperative complications occurred during a mean follow-up of 10.2 months. Conclusion(s): LESS ureterolithotomy with renal stone extraction or holmium laser lithotripsy under flexible cystoscopy can be considered an effective treatment for patients with concurrent large ureteral and renal stones.

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PMC Identifier

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Status

Embase

Institution

(Su, Zhu, Yuan, Zhang, Zhang, Wei, Shen) Department of Urology, Affiliated Hospital of Nanjing University of Traditional Chinese Medicine, Jiangsu Provincial Hospital of Traditional Chinese Medicine, Nanjing, China

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Taylor and Francis Ltd (E-mail: healthcare.enquiries@informa.com)

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479.

New for Old-Coagulum Lithotomy vs a Novel Bioadhesive for Complete Removal of Stone Fragments in a Comparative Study in an Ex Vivo Porcine Model.

Schoeb D.S., Schoenthaler M., Schlager D., Petzold R., Richter K., Grunwald I., Wetterauer U., Miernik A., Hein S.

Embase

Journal of Endourology. 31(6) (pp 611-616), 2017. Date of Publication: June 2017.

[Article]

AN: 616689434

Objectives: To evaluate a recently reported new bioadhesive system for the retrieval of small residual fragments (RFs) after intracorporeal lithotripsy, we systematically compared this system with coagulum lithotomy in retrograde intrarenal surgery.

Material(s) and Method(s): We extracted 30 human stone fragments (≤ 1 mm) in an ex vivo porcine kidney model using a flexible ureteroscope for three groups: (1) the novel bioadhesive, (2) autologous blood as a natural adhesive, and (3) (control group) a conventional retrieval basket. Each group consisted of 15 test runs. Outcomes were evaluated regarding the macroscopic stone-free rate (SFR), retrieval time, and number of ureteral passages.

Result(s): For groups 1 and 2, a significant advantage in stone clearance, mean retrieval time, and number of retrievals was detected compared to the control group ($p = 0.001$). The time and number of retrievals were significantly lower in group 1 (10:36 minutes, $p = 0.001$) than in group 2 (26:12 minutes, $p = 0.001$), with shorter clotting time and better visibility.

Conclusion(s): These data show the general feasibility of intrarenal RF embedding to improve the SFR. Our data furthermore suggest the superiority of the artificial bioadhesive embedding agent over the application of native blood. Further in vivo studies and other research are necessary to confirm the adhesive's effect in patients.

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PMC Identifier

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Status

Embase

Institution

(Schoeb, Schoenthaler, Schlager, Petzold, Wetterauer, Miernik, Hein) Department of Urology, Faculty of Medicine, Medical Center, University of Freiburg, Hugstetterstr 55, Freiburg D-79106, Germany (Richter, Grunwald) Department of Adhesive Bonding Technology and Surfaces, Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, Bremen, Germany

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Year of Publication

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480.

Flexible ureterorenoscopy in position or fusion anomaly: Is it feasible?.

Astolfi R.H., Freschi G., Berti F.F., Gattas N., Molina W.R., Meller A.

Embase

Revista da Associacao Medica Brasileira. 63(8) (pp 685-688), 2017. Date of Publication: August 2017.

[Article]

AN: 618665087

Objective: To analyze the results of flexible ureterorenoscopy (F-URS) with holmium laser in the treatment of kidney stones with ectopic and fusion anomalies (horseshoe kidney and rotation anomalies).

Method(s): We reviewed data from 13 patients with fusion and ectopic renal anomalies that underwent F-URS from April 2011 to April 2017. We analyzed demographic and clinical data (age, gender, BMI, anatomical abnormality, location and dimension of the renal calculi) and perioperative data (method of treatment, stone-free rate, number of days with DJ catheter and perioperative complications).

Result(s): The mean stone size was 12.23 +/- 5.43 mm (range 6-22mm), located in the inferior (58.33%) and middle (16.76%) calyceal units, renal pelvis (16.67%) and multiple locations (8.33%). All 13 patients were treated with Ho-Yag laser, using dusting technique (25%), fragmentation and extraction of the calculi (58.33%) and mixed technique (16.67%). We did not

have any severe perioperative complication. After 90 days, nine patients (75%) were considered stone free.

Conclusion(s): Our data suggest that F-URS is a safe and feasible choice for the treatment of kidney stones in patients with renal ectopic and fusion anomalies.

PMC Identifier

28977105 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=28977105>]

Status

Embase

Institution

(Astolfi, Freschi, Berti, Gattas, Meller) Urology Division, Universidade Federal de Sao Paulo (Unifesp), Sao Paulo, SP, Brazil (Molina) Endourology Department, Denver Health Medical Center, University of Colorado, Denver, CO, United States

Publisher

Associacao Medica Brasileira

Year of Publication

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481.

In vitro head-to-head comparison of the durability, versatility and efficacy of the NGage and novel Dakota stone retrieval baskets.

Bechis S.K., Abbott J.E., Sur R.L.

Embase

Translational Andrology and Urology. 6(6) (pp 1144-1149), 2017. Date of Publication: 01 Dec 2017.

[Article]

AN: 619746761

Background: To compare head to head two end-engaging nitinol stone retrieval devices available to urologists, in terms of durability, versatility and efficacy.

Method(s): For durability testing, 30 NGage and Dakota baskets were cycled 20 times between grasping and releasing synthetic stone models and evaluated for damage or device failure. For versatility and efficacy testing, baskets were assessed in their ability to capture and release stone models from 1 to 11 mm. Each stone was raised above the capture site and the basket was opened to passively release the stone. If the stone did not release, the basket handle was shaken and the OpenSure feature employed if needed. Manual release was used as a last resort.

Result(s): Durability-the Cook NGage demonstrated a statistically significant increased rate of visible device breakdown ($P=0.0046$) in 8 of 30 (26.7%) devices vs. 0 of 30 Dakota devices, with mean damage at 13.5 cycles. Versatility and efficacy-both 8 mm baskets successfully captured stones from 1-8 mm. The Dakota more effectively released 7-8 mm stones ($P < 0.0001$). NGage required manual release of 8 mm stones in 13 cases compared to none with Dakota. For 11 mm baskets, the Dakota released all stones up to 10 mm with simple opening, while the NGage released 10 of 15 (67%) of 9 mm stones and 1 of 15 (7%) of 10 mm stones by simple opening. For 11 mm stones, the Dakota captured 100% whereas NGage could not capture any.

Conclusion(s): Both baskets showed similar durability characteristics. The Dakota basket more effectively captured and released stones over 7 mm, as compared to the NGage basket. The OpenSure aspect conferred an advantage in handling and release of larger stones. These in vitro results demonstrate potential versatility, durability and efficacy of the Dakota basket.

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Status

Embase

Institution

(Bechis, Sur) Department of Urology, University of California San Diego, La Jolla, CA, United States (Abbott) Chesapeake Urology Associates, University of Maryland Baltimore, Baltimore, MD, United States

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482.

Transperitoneal laparoscopic pyeloplasty associated rigid nephroscopy in the treatment of ureteropelvic junction obstruction and renal calculi.

Liu J., Ye X., Xiong L., Huang X., Xu T.

Embase

Journal of Endourology. Conference: 35th World Congress of Endourology, WCE 2017. Vancouver, BC Canada. 31(Supplement 2) (pp A409-A410), 2017. Date of Publication: September 2017.

[Conference Abstract]

AN: 621081349

Introduction & Objective: The treatment of ureteropelvic junction obstruction (UPJO) and concomitant calculus is a complex process. We present our experience with using rigid nephroscopy for renal calculi removal during laparoscopic pyeloplasty for UPJO.

Material(s) and Method(s): From January 2014 to February 2017, 12 patients with UPJO and renal stone had transperitoneal laparoscopic pyeloplasty at our institution; all of those had been simultaneously treated with rigid nephroscopy for renal stone removal. For stone extraction, a rigid nephroscopy or ureteroscope was passed through an assistant trocar under laparoscopic vision directly into a small hole previously created pyelotomy. The stones were extracted using a rigid forceps or stone basket through the rigid nephroscopy. Then transperitoneal laparoscopic dismembered Anderson-Hynes pyeloplasty was operated.

Result(s): The mean operative time was 152 minutes, the mean time for nephrolithiasis removal by rigid nephroscopy was 26.5 minutes, the number of stones was 1 to 55. Complete stone clearance was achieved in 11 of 12 patients. Residual calculi in 1 patient were removed with a single session of extracorporeal shock wave lithotripsy. At the mean follow-up of 11.4 months, no patients had obstruction or recurrent stones.

Conclusion(s): Our data suggest that the use of a concomitant rigid nephroscope during laparoscopic pyeloplasty is a safe and minimally invasive option for the treatment of UPJO complicated with renal calculi.

Status

CONFERENCE ABSTRACT

Institution

(Liu, Ye, Xiong, Huang, Xu) Urology Department, China

Publisher

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2017

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483.

A novel approach: Simultaneous catch and blast-ureteroscopy lithotripsy with in situ dormia basket vs standard stone fragmentation.

Thummar H.G., Thummar K., Zinto N., Vyas J., Suthar P.

Embase

Journal of Endourology. Conference: 35th World Congress of Endourology, WCE 2017.

Vancouver, BC Canada. 31(Supplement 2) (pp A163), 2017. Date of Publication: September 2017.

[Conference Abstract]

AN: 621081192

Introduction & Objective: Ureteroscopy is the gold standard surgical treatment option for impassable ureteral stone with minimal morbidity and good stone clearance. Stone fragment migration is worrisome problem during URS, especially using pneumatic lithotripsy. We compared our results of uretereoscopy in situ dormia basket stone fragmentation Vs standard fragmentation.

Material(s) and Method(s): We divided randomly 30 patients of ureteroscopy in each group i.e. group A in situ dormia; group B control. We used 6fr ureteroscope which has dual channel. We studied various parameters prospectively like stone fragmentation time, stone migration rate, operative time, stone clearance rate, fluoroscopy time, need for stent placement and emergency room visit, cost.

Result(s): Stone fragmentation time, stone migration rate, operative time, fluoroscopy time, need for stent placement, and emergency room visit was significantly less in group A. While Stone clearance rate was significantly higher in group A compared to group B.

Conclusion(s): Stone fragmentation with simultaneous and in situ dormia basket gives better stone free rates and less stone migration, reduces operative time compared to standard stone fragmentation during ureteroscopy.

Status

CONFERENCE ABSTRACT

Institution

(Thummar, Thummar, Zinto, Vyas, Suthar) Sterling, India

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2017

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484.

Surgeon assessment of the dakota stone retrieval device.

Bechis S.K., Abbott J.E., Sur R.L., Kronenberg D.G.

Embase

Journal of Endourology. Conference: 35th World Congress of Endourology, WCE 2017.

Vancouver, BC Canada. 31(Supplement 2) (pp A160-A161), 2017. Date of Publication:

September 2017.

[Conference Abstract]

AN: 621081086

Introduction&Objective: The Dakota-Nitinol Stone Retrieval Device (Boston Scientific, Boston, MA) is a newly released hybrid grasper basket designed to capture, reposition and extract a wider

variety of renal stones, including small stone fragments under 2mm. Its superior durability is reported to facilitate more complete stone removal in a greater number of patients. We conducted a survey to solicit early feedback from urologists performing ureteroscopy and stone extraction with the Dakota device.

Material(s) and Method(s): A questionnaire assessing various aspects of the Dakota device including general grasping ability, (Table presented) ease of insertion into the ureteroscope, and overall experience was distributed to urologists in Europe and the US performing ureteroscopic lithotripsy with the Dakota device. A supplemental survey was distributed to US surgeons assessing ability to capture, manipulate and retrieve stones of varying sizes (5 mm), durability, surgeon experience with grasping stone fragments **Results:** Surveys were answered for 98 cases by urologists in the US and Europe. US surgeons accounted for 50% of all respondents (48). Performance scores are shown in Table 1. Supplemental questionnaires were answered for 23 cases by US urologists. Mean stone size was 9.9-5.3 mm. Twenty out of 23 (87%) surgeons rated the Dakota as better at grasping stone fragments

Conclusion(s): As determined by an initial survey at the time of surgery, the Dakota Stone Retrieval Device offers an improved ability to grasp small stone fragments, particularly <2mm and lower pole stones, with improved durability. It should be considered as a valuable addition to the stone surgeon's ureteroscopic arsenal.

Status

CONFERENCE ABSTRACT

Institution

(Bechis, Abbott, Sur, Kronenberg) UC San Diego School of Medicine, United States

Publisher

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485.

Ureteroscopy simulation training under full immersion decreases mental workload in novice operators.

Abe T., Dar F., Amnattrakul P., Aydin A., Raison N., Shinohara N., Khan S., Ahmed K., Dasgupta P.

Embase

Journal of Endourology. Conference: 35th World Congress of Endourology, WCE 2017.

Vancouver, BC Canada. 31(Supplement 2) (pp A376), 2017. Date of Publication: September 2017.

[Conference Abstract]

AN: 621081044

Introduction & Objective: In general, difficult procedures result in a higher mental workload, which may increase fatigue and surgical errors. Our study aimed at investigating the effect of ureteroscopy simulation training under a full immersion, high fidelity setting focusing on performance and mental workload in novice operators. .

Material(s) and Method(s): Nineteen medical students voluntary participated in the present simulation study. After didactic and video-based lecture, they underwent a dry-box training of renal stone case including a rigid cystoscope part (Task-1, performing a WHO checklist, assembling a scope, insertion of guidewire and access sheath after examining a bladder) and a flexible ureteroscopy part (Task-2, catching a stone located in upper calyx by a basket after inspecting an upper, middle, and lower calyx). Training was performed in a virtual operative theater, with the two collaborators doing roles of anesthetist or scrub nurse. Technical skills were assessed by one of the collaborators (an experienced urologist) onsite using an OSATS score at each training session, and mental workload was subjectively evaluated by National Aeronautics and Space Administration Task Load Index (NASA-TLX) questionnaire after each training session.

Result(s): After the 1st training session, two students withdraw, and the remaining seventeen students completed a minimum of 6 training sessions (M: F = 10: 7, median age of 22) during a median of 21 days (range, 10-32). In both Task 1 and 2, OSATS score was improving (MANOVA model, task 1: $p < 0.0001$, task 2: $p < 0.0001$), and NASA-TLX score was decreasing (task 1: $p = 0.00005$, task 2: $p = 0.0028$) during the training sessions (Figure 1).

Conclusion(s): Repeated simulation trainings of ureteroscopy under a full immersion setting reduced mental workload as well as skill acquisition.

Status

CONFERENCE ABSTRACT

Institution

(Abe, Dar, Amnattrakul, Aydin, Raison, Shinohara, Khan, Ahmed, Dasgupta) Department of Urology, Hokkaido University Hospital, Sapporo, Japan

Publisher

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486.

Assessment of urology postgraduate trainees' competencies in flexible ureteroscopic stone extraction.

Aloosh M., Couture F., Fahmy N., Elhilali M., Andonian S.

Embase

Journal of Endourology. Conference: 35th World Congress of Endourology, WCE 2017.

Vancouver, BC Canada. 31(Supplement 2) (pp A374), 2017. Date of Publication: September 2017.

[Conference Abstract]

AN: 621080966

Introduction & Objective: To assess flexible ureteroscopic stone-extraction skill of urology postgraduate trainees (PGTs) at an Objective Structured Clinical Examination (OSCE) and to determine whether previous experience in the operating theatre or practice on the simulator correlated with performance.

Material(s) and Method(s): After obtaining ethics approval, PGTs from post-graduate years (PGYs) 3 to 5 were recruited from all four Quebec urology training programs during an OSCE. After a short orientation to the UroMentor simulator, PGTs were asked to perform Task 10 for 15 minutes, where two small stones from the left proximal ureter and renal pelvis were extracted using a basket. Competency of PGTs in performing the task was assessed using objective

assessment from the simulator and subjective evaluations using Ureteroscopy-Global Rating Scale (URSGRS). Simulator performance reports and URS-GRS scores were analyzed.

Result(s): Thirty PGTs (9 PGY-3, 11 PGY-4, 10 PGY-5) participated in this study. PGTs had performed a mean of 277.9 cystoscopies, 55.9 semi-rigid and 45.7 flexible ureteroscopies prior to the study. Mean URS-GRS score of the participants was 20.0-4.4, mean operative time was 10.9-2.1 minutes, mean fluoroscopy time was 7.0-4.9 seconds, and mean number of traumas was 10.8-3.8. Using norm-referenced method with 3 experts, cut-off score of 19 on the URS-GRS was determined to indicate competency. Sixty percent (18/30) of PGTs were competent. Mean URS-GRS score of the 8 PGTs who had practiced on the simulator was significantly higher than the mean score of those who did not practice (24.6-3.0 vs 18.3-3.6, $p < 0.001$). Previous experience in the operating theatre and PGY level did not correlate with performance.

Conclusion(s): This study confirmed the feasibility of incorporating the UroMentor at OSCEs to assess competency of urology PGTs in ureteroscopic stone extraction skills. PGTs who practiced on the simulator scored significantly higher than those who did not practice.

Status

CONFERENCE ABSTRACT

Institution

(Aloosh, Couture, Fahmy, Elhilali, Andonian) Division of Urology, McGill University, Canada

Publisher

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487.

Ureterorenoscopy and laser lithotripsy for upper tract stones using "stone dusting" technique.

Hussein M.A., Saad I., Abdalla A., Sadek S.

Embase

Journal of Endourology. Conference: 35th World Congress of Endourology, WCE 2017.

Vancouver, BC Canada. 31(Supplement 2) (pp A151-A152), 2017. Date of Publication: September 2017.

[Conference Abstract]

AN: 621080761

Introduction & Objective: Laser settings during ureterorenoscopy (URS) and laser lithotripsy (LL) have recently been (Table presented) increasingly studied aiming at enhancing stone fragmentation while minimizing complications. Studies have reported that low energy-high frequency (LEHF) settings of LL may produce smaller stone fragments i.e. stone dusting with less retroplulsion. We aim to evaluate the safety, efficacy and complications of URS with Holmium:YAG LL using LEHF "dusting" settings for upper urinary tract (UUT) stones.

Material(s) and Method(s): This was a prospective study conducted at Maadi Military and Cairo University Hospitals from April 2015 to December 2015. It included patients with single or multiple UUT (mid and upper ureter, pelvic, and calyceal) radioluscent or radio-opaque stones <3cm in maximum diameter. Patients with BMI >35 were excluded. URS was done using semirigid or flexible ureteroscopes depending on stone site. LL was set to low energy (0.5 J) and high frequency (20Hz) aiming at stone dusting. No stone stabilization devices were used. Stone free (SF) was defined as having no fragments or fragments 2mm on non-contrast CT at 4 weeks. Perioperative parameters, SF rate (SFR) and complications were analyzed.

Result(s): Our study included 60 patients. Table 1 shows perioperative parameters. On analysis patients who were SF had a significantly lower BMI and smaller stone size (27.8kg/m² vs. 32.5kg/m² and 1.5cm vs. 2.3cm, respectively; p<0.05). Additionally, 96% (48/50) of patients with single stones were SF vs. 70% (7/10) of patients with multiple stones (p < 0.05). Operative time correlated with age, stone number, size and site, and HFU (p < 0.05). The need for DJ stenting correlated with stone size and operative time (1.77cm vs. 1.17cm and 62.7 min vs. 51.2 min, respectively; p < 0.05) but not stone site. The occurrence of complications did not correlate with age, BMI, stone size and site, or operative time. Total energy delivered correlated with stone size and HFU (p < 0.05).

Conclusion(s): URS with LL using LEHF stone dusting setting is safe and effective in management of UUT stones. It achieves a SFR of >90% with an acceptable complication rate and minimal stone migration. Further comparative studies are needed to compare stone dusting to other fragmentation techniques, namely basketing.

Status

CONFERENCE ABSTRACT

Institution

(Hussein, Saad, Abdalla, Sadek) Egyptian Military Medical Services, Egypt

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488.

Laser assisted retrograde ureteroscopy for percutaneous nephrostomy: A new and safer technique for percutaneous nephrolithotomy.

Uribe C.A., Osorio H.D., Benavides J.A., Martinez C.H.

Embase

Journal of Endourology. Conference: 35th World Congress of Endourology, WCE 2017.

Vancouver, BC Canada. 31(Supplement 2) (pp A418), 2017. Date of Publication: September 2017.

[Conference Abstract]

AN: 621080744

Introduction & Objective: We describe a new option to allow direct vision of the indicated calyx to puncture with the use of flexible ureteroscope in order to develop a percutaneous tract using holmium laser fiber.

Material(s) and Method(s): We present a case of a 48-year-old woman with right renal colic. The computed tomography (CT) scan showed a 2.6 cm staghorn stone in the right kidney. Under general anesthesia, the patient is placed in prone position. Flexible ureteroscopy is carried out. With the use of holmium laser the selected renal papillae is identified. The laser fiber is exteriorized through the kidney to the skin for an accurate guided puncture.

Result(s): A laser assisted retrograde ureteroscopy for percutaneous nephrostomy was performed in a patient with right kidney stone. Retrograde contrast and air are injected (pyelography) for calyx anatomy evaluation and the most posterior calyx is chosen. Then,

retrograde holmium fiber is passed to the selected calyx and the laser is fired continuously through the papillae. The green light through the skin revealed the ideal spot for the access. We use the holmium laser fiber as a guide to pass the needle. Once the needle is inside, the laser fiber is removed and urine is observed in the needle showing proper access in the selected calyx. Guidewire is inserted and passed to the bladder using a tipless nitinol basket. After this, double lumen catheter is inserted and safety wire is passed. Dilation of the tract is performed all the time with retrograde endoscopic control. After dilation is complete, a 30 Fr Amplatz sheath is inserted and stone fragmentation with holmium laser is completed. Finally, stone fragments are removed using a nitinol basket.

Conclusion(s): Percutaneous retrograde laser puncture allows an accurate location of the calyx, less bleeding risk and less radiation for the patient and the surgeon. The procedure is performed under direct vision, giving an adequate percutaneous tract and offering a safe access with less potential complications.

Status

CONFERENCE ABSTRACT

Institution

(Uribe, Osorio, Benavides, Martinez) CES University, Medellin, Colombia

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489.

Micro-nephrolithotomy in a transplanted kidney: A peculiar indication for a niche procedure.

Zanetti S., Sampogna G., Talso M., De Lorenzis E., Boeri L., Gallioli A., Palmisano F., Fontana M., Oliva I., Longo F., Beretta C., Ferraresso M., Montanari E.

Embase

Journal of Endourology. Conference: 35th World Congress of Endourology, WCE 2017. Vancouver, BC Canada. 31(Supplement 2) (pp A417-A418), 2017. Date of Publication: September 2017.

[Conference Abstract]

AN: 621080716

Introduction & Objective: Micro-percutaneous nephrolithotomy (Micro-PCNL) is a minimally invasive technique proposed by Mahesh Desai as a one-step PCNL. It's performed using a 3 components 4.85 Fr all-seeing needle. The three-way port allows to connect the irrigation and to introduce a fiber optic and a laser fiber. Micro-PCNL is described as a promising treatment for solitary renal stones, with volume <1000mm³ and low density, regardless of stone location. Besides this, the Microperc set has recently been described for new indications such as ureteric, bladder and urethral stones and for treating noncalculus diseases like posterior urethral valves and vesico-ureteric reflux. In this video we present one more possible application to treat a stone in a just transplanted kidney.

Material(s) and Method(s): We present the case of a 64 years old man with End Stage Renal Disease needing a kidney transplant from a cadaveric donor. During pre-transplant ultrasonographic evaluation, a 7mm stone was found in the kidney. During the transplant procedure, after vascular anastomosis, we proceeded with the stone removal. Before suturing the transplanted ureter to the bladder, a flexible ureteroscopy was attempted through a 10-12 Fr ureteral access sheath but the access to the narrow calyx hosting the stone was not possible. Then, we decided to convert to a Micro-nephrolithotomy using the MicroPerc set. We punctured the kidney under Ultrasonographic control with the 4.85 Fr needle getting access to the target calix. After visualizing the stone, we proceeded with Holmium laser lithotripsy using the dusting setting until obtaining fragments <1 mm. At the end, a double J stent was placed and the transplant procedure was concluded.

Result(s): We didn't register any intra-or post-operative complication. 1 month after surgery the double J stent was removed uneventfully. The Ultrasound examination at 45 days showed the absence of residual fragments and the collecting didn't appear dilated.

Conclusion(s): MicroPCNL is a technique with very strict and selective indications in kidney stone disease. Nevertheless, its applicability in many different urological fields and in challenging situations makes it very attractive and it should be part of the armamentarium of the skilled endourologist.

Status

CONFERENCE ABSTRACT

Institution

(Zanetti, Sampogna, Talso, De Lorenzis, Boeri, Gallioli, Palmisano, Fontana, Oliva, Longo, Beretta, Ferraresso, Montanari) Department of Urology, Fondazione IRCCS Ca' Granda-Ospedale Maggiore Policlinico, Università Degli Studi di Milano, Italy

Publisher

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490.

Robotic assisted retrograde intra-renal surgery for large kidney stone using avicenna roboflex.

Patel A., Tokatli N., Tugcu V., Bedir S., Klein J., Atmaca A., Imamoglu M., Sarica K., Kabakci A., Rassweiler J., Saglam R.

Embase

Journal of Endourology. Conference: 35th World Congress of Endourology, WCE 2017.

Vancouver, BC Canada. 31(Supplement 2) (pp A415-A416), 2017. Date of Publication: September 2017.

[Conference Abstract]

AN: 621080589

Introduction & Objective: International guidelines universally recommend PCNL as the treatment of choice for large renal stones. Guidelines by their very nature reflect past practice trends and serve to limit maverick practice. In the past decade, many centers have reported on classical retrograde intra-renal surgery for large renal stones (>2cm) with limited single-stage success (due to the interplay of many factors), and better outcomes after multiple stages. Unfortunately, stone size is a poor surrogate for stone volume, while few publications utilize a composite matrix of stone volume, hardness + composition, for outcome prediction.

Material(s) and Method(s): This video demonstrates the step-bystep technique and advantages of Avicenna Roboflex robotic assisted retrograde intra-renal surgery (RA-RIRS), the latest iteration of master-slave robotics in this field. Due to reduced invasiveness, the patient, a 50 year old Iraqi general surgeon, preferred this approach over PCNL. Non-contrast CT showed a large (2941.5mm³) left renal stone, with 1076 bone window Hounsfield units. Our previous studies have shown: a) an upper stone volume limit of 4000mm³ with HU of 1000 for RA-RIRS, yielding 89% single-session stone free rate; b) that ureteral access sheath size >11/13Fr allows 35 ml/min. irrigation without raising intra-renal pressure >25 cm water, optimizing safety and vision, while allowing irrigant and dust efflux compared to smaller sheaths.

Result(s): The RA-RIRS procedure was uncomplicated. Optimized efficiency led to single stage complete stone fragmentation (stone dusting time . minutes, fragmentation efficiency mm³/min). RA-RIRS benefits to the surgeon included improved comfort + ergonomics, touch-screen adjustable endoscope motion scaling, laser fiber positioning, control of respiratory excursion + irrigation flow, ability to remotely operate a readied laser and fluoroscopic C-arm, and less fatigue (no lead protection required), cumulatively culminating in 50% greater control of all procedural aspects compared to manual RIRS.

Conclusion(s): The Avicenna Roboflex allows safe, efficient single stage treatment of renal stones larger than is recommended by current international guidelines. Key design features optimize patient safety and instrument longevity significantly compared to manual operation and by reducing surgeon fatigue, optimizes potential for efficiency, and releases expensive staff resources, to yield cost savings in several OR domains, especially when multiple such procedures are planned in a day's operating.

Status

CONFERENCE ABSTRACT

Institution

(Patel, Tokatli, Tugcu, Bedir, Klein, Atmaca, Imamoglu, Sarica, Kabakci, Rassweiler, Saglam)
Spire Roding, United Kingdom

Publisher

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491.

Ureteroscopy utilizing coagulum and clearpetra access sheath.

Rivera M.E., Lingeman J., Krambeck A.E.

Embase

Journal of Endourology. Conference: 35th World Congress of Endourology, WCE 2017.

Vancouver, BC Canada. 31(Supplement 2) (pp A415), 2017. Date of Publication: September 2017.

[Conference Abstract]

AN: 621080569

Introduction&Objective: We present a 60 year old male with a significant past medical history of urosepsis with pseudomonas aeruginosa. The patient carries a diagnosis of multiple sclerosis with neurogenic bowel and bladder. The bladder is managed with an indwelling suprapubic catheter. The patient has undergone multiple previous percutaneous nephrolithotomies and ureteroscopies. He presents with computed tomography (CT) imaging demonstrating a large amount of bilateral stone burden.

Material(s) and Method(s): After two weeks of pre-operative intravenous antibiotics the patient undergoes a primary percutaneous nephrolithotomy. CT imaging on post-operative day (POD) 1 demonstrates a large residual calculus in a parallel calyx in the right kidney. Due to the known infectious nature of the patient's stone disease and the fragility of the stone the patient is consented for a right ureteroscopy performed on POD 3.

Result(s): Due to the known fragile nature of the patient's stone we decide to utilize a suction access sheath to render the patient as stone free as possible. An outflow nipple is attached to allow for closed suction and suction settings are between 150-250mm Hg. Ureteroscopy is performed and the stone identified. Laser dusting settings are 0.8J and 30Hz due to composition of the patients stone. Once lasering is completed the stone fragments are basket extracted. We then utilize 8cc of the patient's blood and inject it through the ureteroscope into the calyx of interest and the renal pelvis. After waiting a period of 5 minutes to allow the blood to coagulate, we begin to basket extract coagulum with attached stone fragments. As we remove stone with the basket small fragments flow alongside the ureteroscope and are suctioned into the collection container. After all clot is removed, repeat ureteroscopy demonstrates excellent stone clearance. The patient does well and was dismissed on POD 7.

Conclusion(s): We demonstrate the utility of a suction access sheath, coupled with patient derived coagulum to assist with basket extraction of a fragile, infected renal calculus.

Status

CONFERENCE ABSTRACT

Institution

(Rivera, Lingeman, Krambeck) Department of Urology, Mayo Clinic, Rochester, MN, United States

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492.

One surgeon active stone retrieval procedure in flexible ureteroscopy for urinary calculi.

Okada S., Hamamoto S., Inoue T., Minagawa S., Morikawa H., Matsuda T., Miura H.

Embase

Journal of Endourology. Conference: 35th World Congress of Endourology, WCE 2017.

Vancouver, BC Canada. 31(Supplement 2) (pp A121-A122), 2017. Date of Publication:

September 2017.

[Conference Abstract]

AN: 621080567

Introduction & Objective: Flexible ureteroscopy (f-URS) is now challenging. In the course of f-URS, stone retrieval with basket forceps is one of the most stressful procedures. Worldwide, in a stone retrieval, it seems to be common practice for f-URS to be conducted by the operator, basket forceps to be manipulated by an assistant (two-surgeon stone retrieval procedure). However, the outcomes of this procedure may be influenced by several factors, such as the skills

of the assistant and combination of two surgeons. We established a new stone retrieval procedure, that is, the operator simultaneously conducts f-URS and manipulates basket forceps (one-surgeon stone retrieval procedure). We evaluated the efficacy of this procedure and its superiority to the two-surgeon stone retrieval procedure.

Material(s) and Method(s): We evaluated whether non-experienced urologist could master this procedure and differences between the one and two surgeon procedures by comparing the results of a task performed using each procedure in an off-site simulator for f-URS. The task consisted of retrieving three selected renal calyx stones and was performed by 7 operators.

Result(s): The mean task completion time of the non-experienced urologists with the one-surgeon procedure after training was significantly shorter at 203 seconds than that before training at 599 seconds ($p = 0.035$). No difference was found in the mean task completion time between the two procedures after training. However, the mean (SD) number of times when the basket was opened and closed in the two-surgeon procedure was 10.9 (6.6) times, which was significantly more than that in the one-surgeon procedure of 5.1 (1.8) times ($p = 0.017$). Furthermore, retrieval failure and retrieval mistake (retrieving stone that is not the target) were often found in the two-surgeon procedure.

Conclusion(s): The one-surgeon stone retrieval procedure is an effective and acceptable technique for any urologist. The two-surgeon procedure retrieves stone using basket forceps opened widely (forceps-lead procedure), while one-surgeon procedure retrieves stone by URS leading process, in which URS leads the minimally opened basket forceps to the stone (URS-lead procedure). URS-lead procedure could decrease stone retrieval-related events, such as mucosal bleeding and scratches. One-surgeon procedure is an effective and safe technique considering the URS-lead maneuver and less affected by the assistant's skills.

Status

CONFERENCE ABSTRACT

Institution

(Okada, Hamamoto, Inoue, Minagawa, Morikawa, Matsuda, Miura) Department of Urology,
Gyotoku General Hospital, Japan

Publisher

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Year of Publication

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493.

Primary retrograde intrarenal surgery versus extracorporeal shockwave lithotripsy in high risk renal stones.

Rashid I.Ab., Wahi A., Hassan R., Ghazali H.

Embase

Journal of Endourology. Conference: 35th World Congress of Endourology, WCE 2017.

Vancouver, BC Canada. 31(Supplement 2) (pp A121), 2017. Date of Publication: September 2017.

[Conference Abstract]

AN: 621080549

Introduction & Objective: Incidence of urolithiasis is high in our country. Treatment modalities vary depending to the size and location of stone and patient's fitness for invasive treatment. Identifying the most suitable treatment modalities according to patient's clinical characteristic is important to get optimum stone clearance with least complication and better cost-benefit. General Objectives

1. To prove that primary RIRS is more effective than ESWL in treatment of renal stone with suspected failure of ESWL Specific objectives 1. To show that RIRS has better stone clearance in treatment of renal stone with suspected failure of ESWL 2. To show that RIRS is more cost effective in treatment of renal stone with suspected failure of ESWL 3. To identify factors that favors RIRS than ESWL in treatment of renal stone with suspected failure of ESWL

Material(s) and Method(s): This is a randomized controlled trial done for a period of two years fromfromAugust 2014 to July 2016 in Hospital Tengku Ampuan Afzan Kuantan, Pahang, Malaysia. Inclusion criteria 1. Lower pole stone 2. Stone size of 1.5-2cm 3. Obesity (BMI >30kg/m²) Patients were randomized into two groups, primary RIRS and ESWL group Patients were stented at least 3 weeks prior to RIRS. Retrograde intrarenal surgery was performed using a flexible ureterorenoscope. Stones were fragmented using holmium laser and retrieved using either basket or forceps. ESWL will be given for the maximum of 3 sessions. ESWL will be stopped once the stone has been cleared or the maximum 1500kj has been given. Patients were followed up with KUB x-ray and ultrasonography of the kidney 3weeks after the surgery/procedure. The duration of follow up is at least 12 weeks (3 sessions of ESWL 3 weeks

apart and followup after 3weeks). Success is defined as stone less than 4mm in size measured by ultrasonography.

Result(s): 78 patients were enrolled in the study. Stone clearance rate in primary RIRS group is higher (80.6%) compared to ESWL group (36.8%) and it is statistically significant ($p < 0.001$).

There was no significant association of stone clearance with stone size, location and body mass index (BMI) in between these 2 groups. The complication rate is 19.4% in primary RIRS group and 18.4% in ESWL group.

Conclusion(s): Primary retrograde intrarenal surgery (RIRS) has significantly higher success rate of stone clearance in comparison with extracorporeal shockwave lithotripsy (ESWL). There is no independent factors in this study that significantly that favours primary RIRS. ESWL in short-term serve as more cost-effective modality compared to primary RIRS but failure of ESWL will eventually cause higher cost in the treatment.

Status

CONFERENCE ABSTRACT

Institution

(Rashid, Wahi, Hassan, Ghazali) International Islamic University Malaysia, Malaysia

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494.

Using flexible ureteroscopy to treat a complex biliary stone in a multidisciplinary approach.

Campos R.S., Guimaraes G., Zurstrassen C., Oliveira R., Kawaoka Matsushita J., Benigno B.,

Zequi S.

Embase

Journal of Endourology. Conference: 35th World Congress of Endourology, WCE 2017. Vancouver, BC Canada. 31(Supplement 2) (pp A414-A415), 2017. Date of Publication: September 2017.

[Conference Abstract]

AN: 621080547

Introduction & Objective: Endoscopic retrograde cholangiopancreatography (ERCP) has become a widely available and routine procedure on the management of common bile duct stones (CBDS) with more than 90% success rates. However, ERCP cannot be performed effectively in all patients. Factors such as variability in the anatomy of the ampulla of Vater, the presence of duodenal diverticuli or surgical procedures involving the stomach such as Roux-Y anastomosis may limit success. Options for those patients are limited. Technological development of endourological materials and new sources of energy to disintegrate urinary calculi, associated with interventional radiology techniques, present as promising alternatives. The authors aim to describe a single experience with percutaneous treatment of complex biliary calculi, using conventional endourologic techniques and materials associated with interventional radiology techniques.

Material(s) and Method(s): 43 year old female, diagnosed with pancreatic head adenocarcinoma and liver metastasis. She had undergone biliary drainage stent in October 2014, using biliary stent 8 . 60 mm. Submitted to a new liver drainage due to tumor ingrowth through the stent mesh after 5 months. On July, 2015, she underwent a new hospitalization due to cholangitis secondary to tumor progression through the stent mesh and a stone in the biliary tract. The first attempt to break the stone using angioplasty balloon and internal/external biliary drain with has failed. A new approach after four weeks with a contralateral puncture using two angioplasty balloons. As this procedure was unsuccessful as well, we decided to keep the patient in internal-external biliary drainage. Due to the failure of percutaneous treatment, we decided to combine the treatment with endourologic technique by placing an access sheath 14 F and subsequent passage of flexible ureteroscopy. The lithotripsy was performed using a laser fiber 270 microns (-8hz and 01J). Stone fragments were removed with a tipless basket (2,2 F). Subsequently, the stenosis was dilated with a balloon and a stent was implanted through the prior transpapillary stent in the middle/distal common bile duct.

Result(s): A final cholangiography showed no residual stone fragments and the contrast medium could pass easily. Post procedure, this patient developed pancreatitis that resolved on the third day, when she was discharged. She could restart chemotherapy seventeen days later.

Conclusion(s): The association of interventional radiology with endourologic techniques can offer an effective alternative to treat such complex biliary stones.

Status

CONFERENCE ABSTRACT

Institution

(Campos, Guimaraes, Zurstrassen, Oliveira, Kawaoka Matushita, Benigno, Zequi) AC Camargo Cancer Center, Brazil

Publisher

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495.

Cost-effective semi-rigid ureteroscopy with laser dusting is effective for the treatment of sizable proximal ureteral calculi.

Gabr A.H., Tawfiek E.R.

Embase

Journal of Endourology. Conference: 35th World Congress of Endourology, WCE 2017.

Vancouver, BC Canada. 31(Supplement 2) (pp A121), 2017. Date of Publication: September 2017.

[Conference Abstract]

AN: 621080531

Introduction & Objective: To evaluate the effectiveness of the low-cost and readily available semi-rigid ureteroscope in the management of proximal ureteric stones up to 2.5 cm.

Material(s) and Method(s):

Patients and Methods: The data of 271 patients who had ureteroscopy for proximal ureteral stones up to 2.5 cm diameter were prospectively analyzed. Patient demographics, size and density of stones, stone clearance, the need to use flexible ureteroscopy or other treatment modalities, and complications of the procedure were evaluated. For sake of cost reduction, we limited our instrumentation to the 6 F Semi-rigid ureteroscope, with the flexible urteroscope available in case of failure reaching the stone. Laser dusting, utilizing Holmium: YAG laser, with

setting of 0.2 Jx 60 Hz were used. Success rate was defined as stone clearance on radiography at 1 month postoperatively.

Result(s): The mean age of patients (163 males and 108 females) was 37.7 years old. Mean stone size was 16.3-4.1 mm. Using Semi-rigid ureteroscope stone clearance was achieved in 265 (97.8%) patients, with a remaining 6 (2.2%) patients in whom flexible ureteroscopy was used due to stone migration (2 patients) or failure to proceed with the semi-rigid ureteroscope through the ureter. Post-operative ureteral stents were placed in 89.3% of patients, of which 46.4% were with extraction strings. There were no recorded intra- or post-operative complications.

Conclusion(s): Our study demonstrates that Semi-rigid ureteroscopy, with laser dusting, is a cost-effective and safe option for the treatment of sizable proximal ureteral stone, up to 2.5 cm, with a very high stone-free rate.

Status

CONFERENCE ABSTRACT

Institution

(Gabr, Tawfik) Minia University, Egypt, Egypt

Publisher

Mary Ann Liebert Inc.

Year of Publication

2017

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496.

Dual usage of a stone basket: Stone capture and retropulsion prevention.

Krocak T., Ghiculete D., Sowerby R., Pace K., D'Honey R.A.

Embase

Journal of Endourology. Conference: 35th World Congress of Endourology, WCE 2017. Vancouver, BC Canada. 31(Supplement 2) (pp A169), 2017. Date of Publication: September 2017.

[Conference Abstract]

AN: 621080445

Introduction & Objective: Stone migration during ureteroscopy (URS) for proximal ureteric calculi is a constant challenge. Several retropulsion prevention devices have been developed in order to optimize URS outcomes. Our technique involves capturing the stone within a four wire Nitinol stone basket and then performing laser lithotripsy to dust the stone while it is engaged in the basket. The dusted fragments wash out with the irrigation fluid and once small enough the remaining stone is removed intact.

Material(s) and Method(s): A retrospective chart review was performed of all proximal URS procedures performed with semi rigid URS for a solitary calculus (2000-2016). Patient characteristics, procedure time, stone size and composition, retropulsion rate, use of flexible URS, stone free rate, and complications were collected. We compared our new technique introduced in 2010 to URS control procedures that did not use retropulsion prevention techniques or devices. Chi squared analysis and ANOVA were used for statistical analysis.

Result(s): One hundred and fifty two patients (97 males & 55 females) underwent URS for proximal ureteric calculi. Mean stone diameter was 9.3-3.4mm with similar impaction rate between both groups (44.3% vs. 42.5% control, $p = 0.587$). The mean surgical procedure time was 53.3min-17.9 for the new technique and 65.2min-29.2 for the control group ($p = 0.005$). Compared to the new technique, the control group had a higher rate of retropulsion (16.5% vs. 34.3%, respectively, $p = 0.011$) and required flexible URS more often to exclude or remove residual fragments (24.1% vs. 59.1%, respectively, $p = 0.001$). Using the new technique stone free rates were higher (78.2% vs. 68.5%, $p = 0.177$) and there was a lower likelihood of leaving residual fragments both $<3\text{mm}$ and $=3\text{mm}$ ($p = 0.002$). Rate of ureteric injury and secondary procedures were similar between both techniques.

Conclusion(s): Our novel technique results in shorter operative time, lower retropulsion rates and decreases post-operative residual stone fragments.

Status

CONFERENCE ABSTRACT

Institution

(Krocak, Ghiculete, Sowerby, Pace, D'Honey) St. Michael's Hospital, University of Toronto, Canada

Publisher

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Year of Publication

2017

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497.

Single stage adjunctive rirs with mini PCNL: Efficacious approach in treating (large bulk) multi-calyceal renal calculi.

Manish S., Pankaj W.

Embase

Indian Journal of Urology. Conference: 50th Annual Conference of Urological Society of India, USICON 2017. Mumbai India. 33(Supplement 1) (no pagination), 2017. Date of Publication: January 2017.

[Conference Abstract]

AN: 620073813

Introduction: Multiple calyceal renal calculi with larger bulk and unfavorable intrarenal anatomy continue to pose challenge to achieving singlestage stone clearance. Options include multi-tract PCNL, staged RIRS or multiple sittings of SWL. We present our experience in achieving single stage stone clearance by using RIRS to relocate stones into a favourable calyx followed by mini-PCNL (mPCNL) in such situations. Patients and Method: From August 2013 till June 2016, 12 patients (16 renal units) with multiple calyceal calculi were selected for the procedure.

Unfavorable renal anatomy-bifid pelvis, narrow/long infundibuli, high placed renal units necessitating suprallth rib access, acute angled calyceal anatomy with intrarenal narrow pelvis precluding use of flexible nephroscope; with bulky calyceal calculi were the inclusion criteria.

Simultaneous bilateral procedures were performed in 4 cases. All patients underwent RIRS in lithotomy position, without use of ureteral access sheaths. Stones were relocated into most favorable calyx using baskets (N-gage/N-circle). No attempt was made to fragment stones or retrieve them ureteroscopically After relocating stones, ureteral catheter was left in situ and patients were turned prone to perform mPCNL (15-20 Fr). Stones were fragmented and retrieved

in all cases. Ureteral stent placed in all cases with a 10-14 Fr PCN tube overnight. All cases performed under spinal anesthesia. All patients underwent imaging on 1st postoperative day and prior to stent removal.

Result(s): Mean age of patients-41.8 years. Male: female: 3:1. Average stone load per renal unit-35.5 mm (range 20-63 mm); average number of stones-4.375 (range 2-9). Bifid pelvis in 4 units. Mean RIRS time-11.8 minutes (range= 5-22 min). All units had single tract access. Hospital stay-2 days. No significant intraoperative complication. 1 case developed pyrexia, responded to oral antibiotics. Residual stone in 1 case-submucosal location.

Conclusion(s): Adjunctive RIRS allowing relocation of calyceal calculi into favorable calyx minimizes the need for multi-tract PCNL to achieve single session stone clearance in multi-calyceal calculi with moderate stone load. It is also useful in converting very high supracostal access to more caudal access in select cases.

Status

CONFERENCE ABSTRACT

Institution

(Manish, Pankaj) RG Stone Urology, Laparoscopy Hospital, New Delhi, India

Publisher

Medknow Publications

Year of Publication

2017

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498.

Laparoscopic pyelolithotomy for complex renal stone.

Nazir S., Khan N., Khan M.

Embase

Indian Journal of Urology. Conference: 50th Annual Conference of Urological Society of India, USICON 2017. Mumbai India. 33(Supplement 1) (no pagination), 2017. Date of Publication: January 2017.

[Conference Abstract]

AN: 620074026

Introduction: PCNL remains the modality of choice for large complex renal calculi, laparoscopic pyelolithotomy for these complex calculi has been undertaken with satisfactory clearance rates.

Material(s) and Method(s): retroperitoneal laparoscopic pyelolithotomy have been undertaken in over 600 patients since 1996. Especially with patients who have an extra renal pelvis and solitary calculi, however multiple and complex calculi have also been successfully undertaken as an alternative to PCNL. For multiple and complex calculi removal of calyceal stones has been undertaken using grasping forceps/baskets/holmium laser via nephroscope inserted through the pyelotomy incision.

Result(s): use of nephroscope through the pyelotomy incision ensures complete clearance

Conclusion: Lap pyelolithotomy can be undertaken for complex renal stones as an alternative to PCNL. All the calyceal can be visualised by the nephroscope via the pyelotomy incision and complete clearance ensured, however left over small calculi can be dealt with ESWL/RIRS at a later date. Verification: True.

Status

CONFERENCE ABSTRACT

Institution

(Nazir, Khan, Khan) Kidney Hospital, Srinagar, India

Publisher

Medknow Publications

Year of Publication

2017

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499.

Dusting vs fragmentation with holmium laser in retrograde intrarenal surgery.

Bagadia S., Bhardwaj L., Reddy J., Chinnibilli K., Gopichand M., Trivedi N.

Embase

Indian Journal of Urology. Conference: 50th Annual Conference of Urological Society of India, USICON 2017. Mumbai India. 33(Supplement 1) (no pagination), 2017. Date of Publication: January 2017.

[Conference Abstract]

AN: 620074538

Introductions and Objectives To compare the outcomes of stone dusting using low pulse energy high frequency holmium laser and stone fragmentation using high pulse energy low frequency holmium laser for single renal stone between 1.5-2.5 cm using the flexible ureterscope. **Methods** Between March 2012 and June 2015 48 cases with single unilateral stone in pelvis between 1.5-2.5 cm were randomized into two groups. Group A (24 cases): stone was dusted using low pulse energy (0.2-0.4 Joules) high frequency laser (30-50 Hz) and group B (24 cases): stone was fragmented using a high pulse energy (1-2 Joules) low frequency (5-10 Hz) holmium laser.

Ureteric stents were placed in all patients. Hounsfield unit, stone free rate, operative time, number of re-entry with flexible ureterscope, intraoperative complications were evaluated. **Results** Mean patient age was 42 +/- 3 years. Hounsfield unit in both groups was comparable. Immediate stone free rate was 62% in group A and 84% in group B, two monthly stone free rate was comparable and statistically insignificant. The operative time was 72 +/- 12 minutes in group A and 54 +/- 14 minutes in group B ($p < 0.05$). No reported intraoperative complications were recorded in group A but 2 cases of entrapped Dormia in the upper ureter were recorded in group B. **Conclusions** Stone dusting or fragmentation using flexible URS with holmium:YAG laser for renal stone have the same success rate at two months however stone dusting carries disadvantages of longer operative time with higher usage of laser energy.

Status

CONFERENCE ABSTRACT

Institution

(Bagadia, Bhardwaj, Reddy, Chinnibilli, Gopichand, Trivedi) Krishna Institute of Medical Sciences, Secunderabad, India

Publisher

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500.

Single surgeon use improves durability of the fiberoptic flexible ureterorenoscope.

Gunavanthe V.S., Sodha H.S.

Embase

Indian Journal of Urology. Conference: 50th Annual Conference of Urological Society of India, USICON 2017. Mumbai India. 33(Supplement 1) (no pagination), 2017. Date of Publication: January 2017.

[Conference Abstract]

AN: 620074482

Objectives: To evaluate the durability of the Flex X2 fiberoptic flexible ureteroscope for Flexible ureterorenoscopy for upper urinary tract calculi at a single centre.

METHOD(S): We observed the data of patients treated by serially used new Flex X2 Flexible Fiberoptic Ureterorenoscope. We compiled our data on the breakdown of F-URS scopes over a period of four years (July 2012 to April 2016) when used for renal and proximal ureteral calculi, in 1097 consecutive patients who underwent RIRS during this period (Totally 1157 renal units).

RESULT(S): Eleven Flexible Fibre-optic Flex X2 Storz Ureterorenoscopes were used during this period to perform F-URS in 111, 99, 170, 109, 140, 59, 55, 69, 60, 213 and 68 renal units chronologically. The periods where the number of procedures per scope were less than 70 coincided with the periods where multiple Urologists (some of whom were in their learning curve) were using the scope to do F-URS procedures. Our observation was that careful handling of the instrument and single surgeon use, improved the durability of the scope while multiple users led to early breakdown of the scope, usually causing defective vision, impaired deflection mechanism or wearing out of the working channel (thus not allowing further use of basket or laser fibre through it).

CONCLUSION(S): For a flexible fibre-optic ureterorenoscope of the same make, used in patients with similar stone characteristics and operative time, the durability of the scope is higher when used by a single surgeon with good experience with F-URS.

Status

CONFERENCE ABSTRACT

Institution

(Gunavanthe, Sodha) RG Stone Urology, Laparoscopy Hospital, Mumbai, India

Publisher

Medknow Publications

Year of Publication

2017

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501.

Ureteroscopic extraction of extraluminally located stone.

Pacigova D., Cermak M., Drlik P., Heracek J., Kocarek J.

Embase

European Urology, Supplements. Conference: 17th EAU Central European Meeting, CEM17.

Plzen Czechia. 16(11) (pp e2861), 2017. Date of Publication: November 2017.

[Conference Abstract]

AN: 619293435

Introduction & Objectives: Extraluminally located stones are rare findings during endoscopic procedures and require invasive intervention on the ureteral wall.

Material(s) and Method(s): A 49 years old patient without comorbidities and no previous history of lithiasis was examined for X-ray visible ureterolithiasis in another department in May 2015 and underwent left ureterorenoscopy (URS) with insertion of double J-stent. Due to inability of complete lithotripsy and ureteral wall injury during the procedure, patient was sent for definitive

treatment to our facility. During URS we suspected the stone relocation into the calico-pelvic system of the kidney and we found 1-1.5 cm long ureteral stricture located 5 cm under pyeloureteral junction. After the procedure, based on the X-ray stone remained in original place.

Result(s): The patient underwent ascendent ureteropyelography by which we confirmed extraluminal stone in the lumbar ureter and two small stones in the calico-pelvic system. First, we endoscopically removed stones from kidney and inserted endopyelotomic stent. After 5 months, we performed endoscopic incision of ureteral wall, removed extraluminal stone using Dormia basket and inserted endoureterotomic stent for 6 weeks. One month after stent removal, the patient was without clinical symptoms, ultrasound was without kidney dilatation or residual lithiasis and urine bacteriology was negative.

Conclusion(s): We present the case of patient with extraluminally located stone and necessity of the ureteral wall incision. These rare cases may be successfully resolved by endoscopic procedures.

Status

CONFERENCE ABSTRACT

Institution

(Pacigova, Cermak, Drlik, Heracek, Kocarek) UVN Ustredni Vojenska Nemonice, Dept. of Urology, Prague, Czechia

Publisher

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Year of Publication

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502.

How can we protect flexible ureteroscope: Tips and tricks.

Iordache V., Geavlete B., Multescu R., Geavlete P.A., Stan M.

Embase

European Urology, Supplements. Conference: 17th EAU Central European Meeting, CEM17. Plzen Czechia. 16(11) (pp e2964), 2017. Date of Publication: November 2017.

[Conference Abstract]

AN: 619293370

Introduction & Objectives: In the last years, flexible ureteroscopy (fURS) has become a viable option for the treatment of renal stones because of its high stone-free rates (SFRs) and low morbidity.

Objective(s): To describe our surgical technique for fURS, step-by-step, for the treatment of renal stones and to assess its effectiveness and safety.

Material(s) and Method(s): A retrospective analysis of 120 consecutive patients who underwent fURS for renal stones at our institution between February 2016 and February 2017 was performed. Ureteroscopy and laser lithotripsy using a standardized technique with an Olympus URF-V flexible ureteroscope.

Result(s): The mean overall stone size was 16.5 +/- 7.9 mm. Ureteral access sheath placement was possible in 107 patients (89.1%). At 1-mo followup, the overall primary SFR was 80%; the secondary and tertiary SFRs were 86.6% and 92.5%, respectively. The mean operative time was 72.3 +/- 26.4 min. Complications were reported in 26 patients (21.6%) overall, with Clavien grade 1 in 16 patients, grade 2 in 7 patients, grade 3 in 3 patients and none grade 4 and 5 complications. In order to gain these outcomes, it is essential to properly prepare the patients, select the type of laser and laser settings. The smallest laser fibers are encouraged to be used due to the fact that scopes will be needed to deflect into the lower pole to manage the stone, the optimal fiber size being <275 microns. The patients must be operated under general anesthesia; this will allow the surgeon and the anesthesiologist to control the patients breathing to limit the stone move during URS. If the stone type allows the stone to be dusted, lower laser setting must be used. Ureteral access sheath must be used at all times to reduce the pressure in the kidney. Additionally, this will help to clear the stone by facilitating the stone passage towards the lower pressure in the sheath.

Conclusion(s): The FURS procedure is safe and effective for the treatment of renal stones. A staged procedure is necessary to achieve stone-free status with large calculi.

Status

CONFERENCE ABSTRACT

Institution

(Iordache, Geavlete, Multescu, Geavlete, Stan) Saint John Emergency Clinical Hospital, Dept. of Urology, Bucharest, Romania

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Year of Publication
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503.

Dual usage of a stone basket: Stone capture and retropulsion prevention.

Krocak T., Ghiculete D., Sowerby R.J., Pace K.T., D'A Honey R.J.

Embase

Canadian Urological Association Journal. Conference: 69th Annual Meeting of the Northeastern Section of the American Urological Association, NSAUA 2017. Savannah, GA United States. 11(9 Supplement 6) (pp S336), 2017. Date of Publication: September 2017.

[Conference Abstract]

AN: 618521016

Introduction: Stone migration during ureteroscopy (URS) for proximal ureteric calculi is a constant challenge. Several retropulsion prevention devices have been developed in order to optimize URS outcomes. Our technique involves capturing the stone within a four-wire Nitinol stone basket and then performing laser lithotripsy to dust the stone while it is engaged in the basket. The dusted fragments wash out with the irrigation fluid and once small enough, the remaining stone is removed intact.

Method(s): A retrospective chart review was performed of all proximal URS procedures performed with semi-rigid URS for a solitary calculus (2000-2016). Patient characteristics, procedure time, stone size and composition, retropulsion rate, use of flexible URS, stone-free rate, and complications were collected. We compared our new technique introduced in 2010 to URS control procedures that did not use retropulsion prevention techniques or devices. Chi-squared analysis and ANOVA were used for statistical analysis.

Result(s): 152 patients (97 males and 55 females) underwent URS for proximal ureteric calculi. Mean stone diameter was 9.3 +/- 3.4 mm with similar impaction rate between both groups (44.3%

vs. 42.5% control; $p=0.587$). The mean surgical procedure time was 53.3 min $\pm$ 17.9 for the new technique and 65.2 min $\pm$ 29.2 for the control group ($p= 0.005$). Compared to the new technique, the control group had a higher rate of retropulsion (16.5% vs. 34.3%, respectively; $p=0.011$) and required flexible URS more often to exclude or remove residual fragments (24.1% vs. 59.1%, respectively; $p=0.001$). Using the new technique stone free rates were higher (78.2%vs. 68.5%; $p=0.177$) and there was a lower likelihood of leaving residual fragments both <3 mm and ≥ 3 mm ($p=0.002$). Rate of ureteric injury and secondary procedures were similar between both techniques.

Conclusion(s): Our novel technique results in shorter operative times, lower retropulsion rates, and decreases postoperative residual stone fragments.

Status

CONFERENCE ABSTRACT

Institution

(Krocak, Ghiculete, Sowerby, Pace, D'A Honey) University of Toronto, Toronto, ON, Canada

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Canadian Urological Association

Year of Publication

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504.

Dusting utilizing suction technique (DUST) for percutaneous nephrolithotomy: Use of a dedicated laser handpiece to treat a staghorn stone.

Ghani K.R., Roberts W.W.

Embase

European Urology, Supplements. Conference: 32nd Annual European Association of Urology Congress, EAU 2017. London United Kingdom. 16(3) (pp e2105-e2106), 2017. Date of Publication: March 2017.

[Conference Abstract]

AN: 618193589

INTRODUCTION & OBJECTIVES: Dusting-use of high frequency and low pulse energy holmium laser settings-is commonly performed during ureteroscopy but reports on the ability of this method to treat complex renal calculi via percutaneous nephrolithotomy (PCNL) are limited. We report on the first clinical feasibility of a dusting technique during PCNL with the assistance of a specially designed laser suction handpiece. **MATERIAL & METHODS:** We performed PCNL on a patient with spinal cord injury, and recurrent urinary tract infection with a computed tomography scan demonstrating a left sided complete staghorn stone, with density of 1000 hounsfield units. Prone PCNL was performed via a 30 Fr Amplatz sheath with access through the lower pole using balloon dilatation. A 120-Watt holmium laser (P120H, Lumenis) was used as the sole lithotripsy source to perform Dusting Utilizing a Suction Technique (DUST) for PCNL. A 550um laser fiber was inserted into the LSHP which was connected to a suction pump in the P120H. The LSHP weighs 135 grams, and has a stainless steel cannula with an inner lumen diameter of 3.25 mm. Laser fiber length is controlled via a manipulation wheel, with the fiber positioned in a working channel on top of the cannula (Figure). Suction is activated via a button on the LSHP, and fragments are sucked into a collection container. We used it in "automatic" mode where suction occurred only during activation of the laser.

RESULT(S): We successfully performed DUST-PCNL to treat the staghorn stone using settings of 0.6 J x 70 Hz, and 1.0 J x 60 Hz, both on long pulse mode. PCNL took 110 minutes to complete; total lasing time was 21.29 minutes and laser energy usage was 47.68 kJ. The fiber tip was easily visible at the tip of the LSHP, with no failure of the device. We did not encounter any difficulty with fragment aspiration or clogging of the steel cannula or suction tubing. Ancillary devices used included a basket to retrieve large fragments, and flexible nephroscopy was also performed to dust an upper pole branch of the staghorn stone. At the end of the procedure a 22F Malecot re-entry tube was placed. A nephrostogram on postoperative day (POD) 1 demonstrated no significant residual fragments. Patient was discharged on POD 2. There were no complications; stone analysis demonstrated a struvite stone.

CONCLUSION(S): Utilizing a 120-Watt holmium system, we confirmed initial clinical feasibility and safety of DUST-PCNL to perform simultaneous lithotripsy and aspiration for effective stone clearance. An advantage of this method is versatility in treating a stone with both rigid and flexible endoscopy using the same energy source. Further clinical evaluation is needed to better understand the efficacy of this technique, and determine if outcomes are similar to when using alternate energy sources for PCNL.

Status

CONFERENCE ABSTRACT

Institution

(Ghani, Roberts) University of Michigan, Dept. of Urology, Ann Arbor, United States

Publisher

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Year of Publication

2017

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505.

Pediatric RIRS versus shockwave lithotripsy for treatment of renal stones.

Gamal Saad W., Mmdouh A.

Embase

European Urology, Supplements. Conference: 32nd Annual European Association of Urology Congress, EAU 2017. London United Kingdom. 16(3) (pp e1280), 2017. Date of Publication: March 2017.

[Conference Abstract]

AN: 618193162

INTRODUCTION & OBJECTIVES: The aim of this study is to compare the outcomes of flexible URS and shockwave lithotripsy (SWL) for treatment of renal stones (< 20 mm) in school aged children. MATERIAL & METHODS: From February 2013 to April 2016 a total number of 42 cases with unilateral renal stone less than 2 cm were divided into 2 groups. Group 1 (21 cases) were treated with 7.5 fr fibrooptic flexible URS and group 2 (21 cases) were treated with shock wave lithotripsy. The mean age was 8.7+-1.1 years. The stones were single in 37 cases and multiple in 5 cases. In FURS group no access sheath was used in any case, we follow the principle of stone dusting using 200 mu or 365 mu holmium laser in low power (0.2 or 0.4 Jouls) and high frequency

(20 - 40 hz). 5 fr. DJ stent with sting were inserted postoperatively to be removed 5 days postoperatively without anesthesia. We compared both groups in the operative time, success rate, re-treatment, complications, total number and any secondary procedures.

RESULT(S): The stone size and hardness was comparable in both groups (1.1 +- 0.3 cm for group 1 and 1.3 +- 0.3 cm in group 2 , $P= 0.30$), (770+- 75 hu for group 1 and 730+- 80 hu for group 2 , $P= 0.28$). All stones in group 1 were successfully accessed except in 2 cases with tight ureter in which a 5 fr DJ were inserted for 2 weeks for passive dilation then a second session were successfully done. In FURS group 19 cases (95%) become completely stone free immediate after DJ removal while 2 cases needs 3 weeks for spontaneous passage of all the gravels. On the contrary to the SWL group 14 cases (70%) become completely stone free after 4 weeks whereas 7 (30%) cases underwent a second SWL session after 2 weeks because of significant fragments. ($P < 0.001$). The mean operative duration and the hospital stay was comparable in both groups (60 +- 15 minutes in the FURS group and 50 +- 12 minutes in the SWL group ($P = 0.29$) , (hospital stay 5+- 2 hours for FURS group and 4.5+- 1.5 hours for SWL group ($P= 0.36$) . Two cases (9.5%) of FURS group had postoperative fever that controlled with parenteral antibiotics for 48 hours whereas 2 cases of SWL group had a stienstrassae that resolved with medical treatment after 3 weeks and one case of recurrent attacks of renal colic (14%) ($P = 0.498$).

CONCLUSION(S): Both SWL and FURS are effective treatment modality for pediatric renal stones < 2 cm however FURS provided a higher immediate stone free rate and a lower additional treatment rate compared with SWL.

Status

CONFERENCE ABSTRACT

Institution

(Gamal Saad, Mmdouh) Sohag University Hospital, Dept. of Urology, Sohag, Egypt

Publisher

Elsevier B.V.

Year of Publication

2017

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506.

Intraoperative stone free status using Dyna CT Artis Zeego in complex retrograde intrarenal surgeries.

Susaeta R., Guzman S., Zambrano N., Fulla J., Mercado A., Kerkebe M., Campero J.M., Ramos C.

Embase

European Urology, Supplements. Conference: 32nd Annual European Association of Urology Congress, EAU 2017. London United Kingdom. 16(3) (pp e2109), 2017. Date of Publication: March 2017.

[Conference Abstract]

AN: 618191471

INTRODUCTION & OBJECTIVES: The main objective in minimally invasive retrograde intrarenal surgeries (RIRS) is to obtain a stone free status (SFS). There is no consensus in determining maximum fragment size to define SFS, but fragments smaller than 2 mm (<2mm) have less clinically significant stone events (CSSE). During RIRS the SFS is usually assessed by endoscopic and radioscopic evaluation, which may leave behind clinically significant stones. The best method to evaluate postoperative SFS is the non-contrast computed tomography (NCCT) but many studies do not use it to inform their stone free rate (SFR). Our objective is to present our initial experience in a Hybrid operating room (HOR), using the DynaCT Artis Zeego to determine the SFS in complex RIRS. **MATERIAL & METHODS:** Clinical cases: Case # 1: 52 years old adult female with history of anatrophic nephrolithotomy and recurrent urinary infections. An abdominal CT scan showed a left pylocaliceal deformity with a stricture between the upper and lower cavities, multiple renal stones up to 8 mm in the upper cavity and a lower pole calix with a narrow infundibulum and multiple stones. Total stone volume of 140 mm². Case # 2: 73 years old adult male with a history of left pylolithotomy 30 years ago and recurrent left lumbar pain. An abdominal CT scan showed an incomplete left stag horn stone (397 mm²) and a 30mm² stone in a medial calix. A MAG3 scintigraphy showed a left kidney with 25% of total renal function and no obstruction.

RESULT(S): Surgical Technique: Case # 1: In the Hybrid operating room, a RIRS in lithotomy position and a Holmium Laser Lithotripsy (HLL) were performed and stone fragments removed from the upper and medial calyces, following a lower pole calix holmium laser (HL) infundibulectomy and stone removal. Then a HL incision of the stricture between the upper and lower poles was done, to avoid future ectasia. After endoscopic and radioscopic evaluation, which

did not find residual stone fragments >2 mm a DynaCT acquisition showed 2 fragments bigger than 2 mm, which were removed. Operating time (OT): 160 minutes. Case # 2: The patient preferred staged RIRS instead of percutaneous nephrolithotomy. First Stage: A RIRS and HL dusting was performed, leaving approximately 50% of the stone volume. OT: 150 minutes. Second stage: RIRS and HLL (dusting). The endoscopic evaluation showed fragments <2mm. The DynaCT acquisition showed the 30mm² stone, undetected endoscopically. A HLL (dusting) was done with residual fragments <2mm. OT: 100 minutes.

CONCLUSION(S): There is no intraoperative method to rule out clinically significant stone fragments during kidney stone treatment. The use of an intraoperative DynaCT acquisition detects stone fragments unnoticed with endoscopic and radioscopy evaluation. Removing or dusting undetected stone fragments may reduce CSSE; avoid later postoperative NCCT evaluation and successive surgeries.

Status

CONFERENCE ABSTRACT

Institution

(Susaeta, Guzman, Zambrano, Fulla, Mercado, Kerkebe, Campero, Ramos) Clinica las Condes S.A Dept. of Urology, Santiago, Chile

Publisher

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Year of Publication

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507.

Assessment of urology postgraduate trainees' competencies in flexible ureteroscopic stone extraction.

Aloosh M., Couture F., Fahmy N., Elhilali M.M., Andonian S.

Embase

Canadian Urological Association Journal. Conference: 72nd Annual Meeting of the Canadian Urological Association. Toronto, ON Canada. 11(6 Supplement 4) (pp S271), 2017. Date of Publication: June 2017.

[Conference Abstract]

AN: 617772118

Introduction: We sought to assess flexible ureteroscopic stone-extraction skills of urology postgraduate trainees (PGTs) at an Objective Structured Clinical Examination (OSCE) and to determine whether previous experience in the operating theatre or practice on the simulator correlated with performance.

Method(s): After obtaining ethics approval, PGTs from postgraduate years (PGYs) 3-5 were recruited from all four Quebec urology training programs during an OSCE. After a short orientation to the UroMentor simulator, PGTs were asked to perform Task 10 for 15 minutes, where two small stones from the left proximal ureter and renal pelvis were extracted using a basket. Competency of PGTs in performing the task was assessed using objective assessment from the simulator and subjective evaluations using Ureteroscopy-Global Rating Scale (URS-GRS). Simulator performance reports and URS-GRS scores were analyzed.

Result(s): 30 PGTs (nine PGY-3, 11 PGY-4, 10 PGY-5) participated in this study. PGTs had performed a mean of 277.9 cystoscopies, 55.9 semi-rigid and 45.7 flexible ureteroscopies prior to the study. Mean URS-GRS score of the participants was 20.0 +/- 4.4, mean operative time was 10.9 +/- 2.1 minutes, mean fluoroscopy time was 7.0 +/- 4.9 seconds, and mean number of traumas was 10.8 +/- 3.8. Using norm-referenced method with three experts, cutoff score of 19 on the URS-GRS was determined to indicate competency. 60% (18/30) of PGTs were competent. Mean URS-GRS score of the eight PGTs who had practiced on the simulator was significantly higher than the mean score of those who did not practice (24.6 +/- 3.0 vs. 18.3 +/- 3.6; $p < 0.001$). Previous experience in the operating theatre and PGY level did not correlate with performance.

Conclusion(s): This study confirmed the feasibility of incorporating the UroMentor at OSCEs to assess competency of urology PGTs in ureteroscopic stone-extraction skill. PGTs who practiced on the simulator scored significantly higher than those who did not practice.

Status

CONFERENCE ABSTRACT

Institution

(Aloosh, Couture, Fahmy, Elhilali, Andonian) Surgery, Division of Urology, McGill University, Montreal, QC, Canada (Aloosh) Epidemiology, Biostatistics and Occupational Health, McGill University, Montreal, QC, Canada

Publisher

Canadian Urological Association

Year of Publication

2017

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508.

Dual usage of a stone basket: Stone capture and retropulsion prevention.

Krocak T.T.J., Ghiculete D., Sowerby R.J., Pace K.T., D'A Honey R.J.

Embase

Canadian Urological Association Journal. Conference: 72nd Annual Meeting of the Canadian Urological Association. Toronto, ON Canada. 11(6 Supplement 4) (pp S263), 2017. Date of Publication: June 2017.

[Conference Abstract]

AN: 617772054

Introduction: Stone migration during ureteroscopy (URS) for proximal ureteric calculi is a constant challenge. Several retropulsion prevention devices have been developed to optimize URS outcomes. Our technique involves capturing the stone within a four-wire Nitinol stone basket and then performing laser lithotripsy to dust the stone while it is engaged in the basket. The dusted fragments wash out with the irrigation fluid and once small enough, the remaining stone is removed intact.

Method(s): A retrospective chart review was performed of all proximal URS procedures performed for a solitary calculus (2000-2016). Patient characteristics, procedure time, stone size and composition, retropulsion rate, use of flexible URS, stone-free rate, and complications were collected. We compared our new technique introduced in 2010 to URS control procedures that did not use retropulsion prevention techniques or devices. Chi-squared analysis and ANOVA were used for statistical analysis.

Result(s): 152 patients (97 males and 55 females) underwent URS for proximal ureteric calculi. Mean stone diameter was 9.3 mm +/- 3.4, with similar impaction rate between both groups

(44.3% vs. 42.5% control; $p=0.587$). The mean surgical procedure time was 53.3 minutes $\pm$ 17.9 for the new technique and 65.2 minutes $\pm$ 29.2 for the control group ($p=0.005$). Compared to the new technique, the control group had a higher rate of retropulsion (16.5% vs. 34.3%, respectively; $p=0.011$) and required flexible URS more often to exclude or remove residual fragments (24.1% vs. 59.1%, respectively; $p=0.001$). Using the new technique, stone-free rates were higher (78.2% vs. 68.5%; $p=0.177$) and there was a lower likelihood of leaving residual fragments both <3 mm and ≥ 3 mm ($p=0.002$). Rate of ureteric injury and secondary procedures were similar between both techniques.

Conclusion(s): Our novel technique results in shorter operative times, lower retropulsion rates, and decreased postoperative residual stone fragments.

Status

CONFERENCE ABSTRACT

Institution

(Krocak, Ghiculete, Sowerby, Pace, D'A Honey) Division of Urology, University of Toronto-St. Michael's Hospital, Toronto, ON, Canada

Publisher

Canadian Urological Association

Year of Publication

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509.

Unplanned emergency department visits and hospital admissions following ureteroscopy: Do ureteral stents make a difference?.

Mittakanti H.R., Conti S., Pao A.C., Liao J., Leppert J.T., Elliott C.S.

Embase

Journal of Urology. Conference: 112th Annual Meeting of the American Urological Association, AUA 2017. Boston, MA United States. 197(4 Supplement 1) (pp e667), 2017. Date of Publication: April 2017.

[Conference Abstract]

AN: 616358905

INTRODUCTION AND OBJECTIVES: The comparative effectiveness of ureteral stents placed during ureteroscopy for urinary stone disease is widely debated. We sought to evaluate unplanned medical visits within the early post-operative period after ureteroscopy in patients with and without ureteral stent placement.

METHOD(S): We identified all ureteroscopic procedures for urinary stone disease in the California Office of Statewide Health Planning and Development (OSHPD) database from 2010-2012. The primary outcome was any emergency department visit or inpatient hospital admission in the first 7 days following ureteroscopy. Patients were sub-categorized by type of ureteroscopy (i.e. laser lithotripsy, basket retrieval, diagnostic) and analyzed for significant differences between stented and unstented patients. Multivariable logistic regression was performed to determine if ureteral stent placement was independently associated with unplanned visits.

RESULT(S): Our analytic cohort included 17,129 patients undergoing 18,860 ureteroscopy procedures. A ureteral stent was placed in 86.2% of patients undergoing laser lithotripsy, 70.5% of patients receiving basket retrieval, and 54.0% of patients undergoing diagnostic ureteroscopy. In the 7 days following ureteroscopy, 6.6% of patients were seen in the emergency department and 2.2% of patients were admitted. In a fully adjusted model, the utilization of a ureteral stent was not associated with emergency department visits or inpatient admissions.

CONCLUSION(S): Ureteral stent placement during ureteroscopy does not increase the odds of emergency department visits and inpatient admissions in the early post-operative period. (Table presented).

Status

CONFERENCE ABSTRACT

Institution

(Mittakanti, Conti, Pao, Liao, Leppert) Palo AltoCAUnited States (Elliott) San JoseCAUnited States

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510.

Dusting utilizing suction technique (DUST) for percutaneous nephrolithotomy: Dedicated laser handpiece to treat a staghorn stone.

Ghani K., Roberts W.

Embase

Journal of Urology. Conference: 112th Annual Meeting of the American Urological Association, AUA 2017. Boston, MA United States. 197(4 Supplement 1) (pp e1283), 2017. Date of Publication: April 2017.

[Conference Abstract]

AN: 616358684

INTRODUCTION AND OBJECTIVES: Dusting, use of high frequency and low pulse energy holmium laser settings, is performed during ureteroscopy but reports on this method to treat complex renal calculi via percutaneous nephrolithotomy (PCNL) are limited. We report the first clinical feasibility of a dusting technique during PCNL with the assistance of a specially designed laser suction handpiece (LSHP).

METHOD(S): We performed PCNL on a patient with spinal cord injury, urinary tract infection and a computed tomography scan demonstrating a left complete staghorn stone (5x3.5x2.5 cm; 1000 Hounsfield units). Prone PCNL was performed via a 30 Fr Amplatz sheath with access in the lower pole. A 120-Watt holmium laser (P120H, Lumenis) was used as the lithotripsy source to perform Dusting Utilizing a Suction Technique (DUST) for PCNL. A 550um laser fiber was inserted into the LSHP (Lumenis, Israel) which was connected to a suction pump in the P120H. The LSHP weighs 135 grams, and has a stainless steel cannula with an inner lumen diameter of 3.25 mm. Laser fiber length is controlled via a manipulation wheel, with the fiber positioned in a working channel on top of the cannula. Suction is activated on the LSHP, and fragments are sucked into a collection container. We used "automatic" mode where suction occurred only during laser activation.

RESULT(S): We successfully performed DUST-PCNL using settings of 0.6 J x 70 Hz, and 1.0 J x 60 Hz, both on long pulse mode. PCNL took 110 minutes to complete; total lasing time was 21.29

mins, and laser energy usage was 47.68 kJ. The fiber tip was easily visible at the tip of the LSHP, with no failure of the device. We did not encounter any difficulty with fragment aspiration or clogging of the steel cannula or suction tubing. Ancillary devices included a basket to retrieve large fragments, and flexible nephroscopy was performed to dust an upper pole branch of the staghorn. At the end, a 22F Malecot re-entry tube was placed. A nephrostogram on post-operative day (POD) 1 demonstrated a 4 mm residual fragment. Patient was discharged on POD 2. There were no complications; stone analysis demonstrated a struvite stone.

CONCLUSION(S): Utilizing a 120-Watt holmium system, we confirmed initial clinical feasibility and safety of DUST-PCNL to perform simultaneous lithotripsy and aspiration for effective stone clearance. An advantage of this method is versatility in treating a stone with both rigid and flexible endoscopy using a lightweight energy source. Further clinical evaluation is needed to understand the efficacy of this technique in comparison to alternate lithotripsy sources.

Status

CONFERENCE ABSTRACT

Institution

(Ghani, Roberts) Ann ArborMIUnited States

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511.

A prospective randomized study evaluating safety and efficacy of bilateral simultaneous retrograde intrarenal surgery for endoscopic management of bilateral renal calculi.

Shah H., Shah R.

Embase

Journal of Urology. Conference: 112th Annual Meeting of the American Urological Association, AUA 2017. Boston, MA United States. 197(4 Supplement 1) (pp e920), 2017. Date of Publication: April 2017.

[Conference Abstract]

AN: 616358018

INTRODUCTION AND OBJECTIVES: To prospectively evaluate safety and efficacy of bilateral simultaneous retrograde intrarenal surgery (RIRS) for endoscopic management of bilateral renal calculi.

METHOD(S): We prospectively evaluated 56 patients with bilateral renal calculi who underwent bilateral simultaneous RIRS for endoscopic management of bilateral renal calculi between June 2003 & May 2016 (study group). Placement of ureteral access sheath was preferred in all patients. 100 W holmium laser machine with 200-micron laser fiber was used with intention of stone dusting and fragmentation. A DJ stent was placed in all patients postoperatively. Stone free rate were evaluated 2-6 weeks postoperatively by combination of x-ray and ultrasonography of Kidneys. In patients who had tight ureter needing staged procedure, the data from second definitive procedure was used for analysis. Patient's demographics, intra and postoperative data was entered in IBM SPSS Statistics 24 software and compared with 56 randomly selected patients who underwent unilateral RIRS for unilateral renal calculi at our institute (control group). Each control group patient was the one who underwent RIRS immediately after the study group patient in the sequence of RIRS patients at our institute.

RESULT(S): Patients demographics are shown in table 1. Study group patients had higher overall stone burden than control group. The mean duration of surgery was significantly longer in study group ($P= 0.000$). Despite longer operation time, the duration of postoperative catheterization and hospital stay was comparable in both groups (table 2). The intra and postoperative complications were comparable in both groups. Complete stone free rate was 78.5% of patients in control group and 67.85% of patients in study group ($p= 0.436$).

CONCLUSION(S): Bilateral simultaneous RIRS is safe and effective in patients with bilateral renal calculi. (Table Presented).

Status

CONFERENCE ABSTRACT

Institution

(Shah, Shah) MumbaiIndia

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512.

Transfer of flexible ureteroscopic stone extraction skill from a virtual reality simulator to the operating theatre: A pilot study.

Aloosh M., Noureldin Y.A., Andonian S.

Embase

Journal of Urology. Conference: 112th Annual Meeting of the American Urological Association, AUA 2017. Boston, MA United States. 197(4 Supplement 1) (pp e808-e809), 2017. Date of Publication: April 2017.

[Conference Abstract]

AN: 616357958

INTRODUCTION AND OBJECTIVES: Ureteroscopic stone extraction is the gold standard for management of ureteral and some renal stones. To achieve competency in performing this minimally invasive procedure and decrease the chance of potential complications adequate training is essential. However, there are concerns whether training exclusively in the operating theatre is adequate to achieve competency. Thus, simulators were introduced for training in a radiation and stress-free environment. UroMentor™ simulator (Simbionix, Cleveland, Ohio, USA) has been validated for training ureteroscopy. However there is no data on the learning curve of ureteroscopic stone extraction on the simulator. Moreover, it is unknown whether skills acquired on this simulator are transferable to the operating theatre. Therefore, the aim of this study was to assess the learning curve of flexible ureteroscopic stone extraction and transfer of the skill obtained from the simulator to the operating theatre.

METHOD(S): After obtaining ethics approval, Post Graduate Trainees (PGTs) from PGY1-4 were recruited. During phase I, participants completed three weekly one-hour training sessions on the Uro- Mentor™ simulator practicing task 10, where two small stones from the left proximal ureter and renal pelvis were extracted using a basket. Assessments from the simulator and the validated Ureteroscopy-Global Rating Scale (URS-GRS) were used to establish the learning

curve. During phase II, the URS-GRS tool was used to assess performance of participants in the operating theatre.

RESULT(S): In phase I, eight right-handed urology PGTs (PGY1- 4) with mean age of 27.8+/-2 (25-31) years participated. PGTs practiced a total of 52 times, with a mean fluoroscopy time of 10.4+/-12 seconds and a mean operative time of 14.6+/-4.3 minutes. Competency in the task was achieved after seven trials on the simulator. In phase II, five PGTs were assessed while performing 55 consecutive flexible ureteroscopic stone extraction procedures in the operating room. The mean operative time was 51.4+/-15.2 minutes and the mean fluoroscopy time was 29+/-6 seconds. There was a significant correlation between URS-GRS scores obtained on the simulator and in the operating theatre ($r=0.9$, $p=0.03$).

CONCLUSION(S): Competency in performing flexible ureteroscopic stone-extraction on the UroMentor simulator was achieved after seven trials. Since there was a strong correlation between URS-GRS scores on the simulator and in the operating theatre, this skill could be transferred from the simulator the operating theatre.

Status

CONFERENCE ABSTRACT

Institution

(Aloosh, Noureldin, Andonian) MontrealCanada

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513.

Tipless nitinol stone baskets: Comparison of penetration force, radial dilation force, opening dynamics, and deflection.

Patel N., Akhavein A., Hinck B., Jain R., Monga M.

Embase

Journal of Urology. Conference: 112th Annual Meeting of the American Urological Association, AUA 2017. Boston, MA United States. 197(4 Supplement 1) (pp e581-e582), 2017. Date of Publication: April 2017.

[Conference Abstract]

AN: 616357685

INTRODUCTION AND OBJECTIVES: Tipless nitinol baskets are commonly used during ureteroscopic procedures for urinary calculi manipulation and retrieval. We aimed to evaluate and compare 5 commercially available tipless nitinol stone baskets(2.2F): 2.2F Coloplast Dormia No-Tip, 1.5F Sacred Heart Medical Halo, 2.2F Cook NCircle Nitinol Tipless Stone Extractor, 1.9F Bard SkyLite Tipless Nitinol Basket and the 1.9F Boston Scientific Zero Tip Nitinol Stone Retrieval Basket for penetration force, radial dilation force, opening dynamics and resistance towards deflection.

METHOD(S): Each of the 5 baskets were tested for penetration force (safety metric) - 5 repetitions with 2 baskets tips of each model) with a motorized sliding stage model and digital force gauge to assess perforation of a piece of aluminum foil with the basket tip. Radial force (functional metric for ureteric calculi) was tested by measuring maximal force of an opened basket between two blocks on a digital scale (10 repetitions for each basket). Opening/closing dynamics for each basket were measured by determining the width of the basket at 0.5 mm increments of basket length with digital calipers and light microscopic visualization. Limitation of deflection (functional metric) was tested by measuring the difference in maximal upward and downward angle of deflection of a ureteroscope with and without a basket in place.

RESULT(S): The Sacred Heart Halo 1.5F basket had the highest mean force required to perforate the foil at 0.676N +/- 0.117 (p<0.0001). The Coloplast No-Tip Dormia 2.2F basket required the lowest mean force required to perforate at 0.105N +/- 0.043 (p<0.0001). The Sacred Heart Halo 1.5F basket had the highest mean radial dilation force at 3.04 g +/- 0.15 (p<0.0001). The Cook NCircle 2.2F basket had the lowest mean radiation dilation force at 1.24 g +/- 0.084 (p<0.0001). The Cook NCircle 2.2F had the most linear pattern of opening, while the Coloplast No-Tip Dormia 2.2F and the Sacred Heart Halo 1.5F exhibited exponential opening dynamics. The Cook NCircle 2.2F limited scope deflection the most with a decrease in 4 downward and 10 upward (net 14 of lost deflection). The Sacred Heart Halo 1.5F had the least influence on deflection with a decrease in 3 downward and 5 upward (net 8 of lost deflection)

CONCLUSION(S): The penetration force, radial dilation force, opening dynamics and resistance to deflection varied between 5 commonly available tipless nitinol stone baskets. A small diameter 1.5F basket is capable of providing optimal performance, while sacrificing linear opening.

Status

CONFERENCE ABSTRACT

Institution

(Patel, Akhavein, Hinck, Jain, Monga) ClevelandOHUnited States

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514.

Modified ergonomic lithotripsy (MEL): A prospective single centre study demonstrating a novel method for retrograde intrarenal surgery (RIRS) to achieve high stone free rates without surgeon fatigue.

Gauhar V., Biligere S., Swaminathan G., Goh R.X., Heng C.T.

Embase

Journal of Urology. Conference: 112th Annual Meeting of the American Urological Association, AUA 2017. Boston, MA United States. 197(4 Supplement 1) (pp e347), 2017. Date of Publication: April 2017.

[Conference Abstract]

AN: 616357584

INTRODUCTION AND OBJECTIVES: RIRS in larger stones and complex renal anatomy when done conventionally challenges a surgeon, causing fatigue leading to poor outcomes and stone free rates. The Avicenna Robot addresses precision and surgeon fatigue. However, cost is a limiting factor. We used the MEL position with definitive maneuvers intra-operatively allowing focused lithotripsy to improve higher stone free rates with the hypothesis of being more cost efficient. - To describe, assess and review outcomes of our institute at Singapore doing RIRS in a modified lithotomy position to improve ergonomics for the endourologist especially in large calculi

and complex anatomy. - To assess surgeon fatigue and stone free rates(SFR) and the need for ancillary equipment and procedures.

METHOD(S): 100 Renal units had MEL from July 2015 to November 2016. A diagnostic retrograde pyelogram and semi rigid ureteroscopy was followed by a 11-13fr or 12/14fr 42-45 cm access sheath insertion in men and 35-36 cm in women. Position: Lithotomy with head up and table incline at 35 degrees, respiratory rate controlled at 7-8 per minute. 20 minutes prior to completion of procedure 10 mg furosemide was given to induce diuresis. Surgeon stool was raised such that hands were at the level of access sheath to relax shoulders and allow normal maneuvering without stress on flexible scope. SFR defined as residual fragments less than 3 mm was determined by CT scan 1 month or 3 months after surgery.

RESULT(S): All 100 cases involving 3 primary surgeons had successful RIRS by MEL technique with minimal fatigue. Mean operative time for large stones 90.8 min Mean laser time 53.6 min. 18% cases needed a basket to re-position stones. Rate of sepsis 3% Average hospital stay was 2 days Scopes serviced: 2 No loss in scope functionality. Good visibility maintained.

CONCLUSION(S): Having reproduced the MEL technique for 100 cases with no added morbidity and good outcomes, we believe that our aims were successful. We propose this technique as an alternative to standard RIRS. It definitely minimizes need for accessories is cost and surgeon effective,unless Avicenna becomes the cheapest alternative way forward in future. (Table Presented).

Status

CONFERENCE ABSTRACT

Institution

(Gauhar, Biligere, Swaminathan, Goh, Heng) SingaporeSingapore

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515.

Assessment of flexible ureteroscopic stone extraction skills of urology postgraduate trainees during objective structured clinical examinations: Is there a place for virtual reality simulators?.

Aloosh M., Couture F., Andonian S.

Embase

Journal of Urology. Conference: 112th Annual Meeting of the American Urological Association, AUA 2017. Boston, MA United States. 197(4 Supplement 1) (pp e695), 2017. Date of Publication: April 2017.

[Conference Abstract]

AN: 616357525

INTRODUCTION AND OBJECTIVES: The first objective of this study was to assess whether UroMentor™ simulator could be used during an Objective Structured Clinical Examination (OSCE) to assess flexible ureteroscopic stone-extraction skills of urology postgraduate trainees (PGTs). The second objective was to determine whether previous experience in performing this task in the operating theatre or on the simulator correlated with performance during the OSCE.

METHOD(S): After obtaining ethics approval, PGTs from postgraduate years (PGY) 3 to 5 were recruited from all 4 Quebec urology training programs to participate in the study during an OSCE. After a short orientation to the UroMentor™ simulator (Simbionix, Cleveland, Ohio, USA), PGTs were asked to perform Task 10 for 15 minutes, where two small stones from the left proximal ureter and renal pelvis were extracted using a basket. Objective assessments from the simulator and subjective evaluations using the validated Ureteroscopy- Global Rating Scale (URS-GRS) tool were used to assess competency of PGTs in performing the task. Performance reports generated by the simulator and the URS-GRS scores were analyzed using paired t-test and Pearson correlation.

RESULT(S): Out of thirty PGTs who participated in this study, 29 were right-handed. PGTs had performed a mean of 277.9 cystoscopies, 55.9 semirigid ureteroscopies, and 45.7 flexible ureteroscopies prior to the study. During the OSCE, mean URS-GRS score was 20.0 +/- 4.4, mean operative time was 10.9 +/- 2.1 minutes, mean fluoroscopy time was 7.0 +/- 4.9 seconds, and mean number of traumas was 10.8 +/- 3.8. Eight PGTs had practiced on the UroMentor simulator prior to the study with a mean URS-GRS score of 26.0 +/- 7.2 on their last practice trial. At the OSCE, mean URS-GRS score of those who practiced on the simulator was significantly higher than the mean score of those who did not practice on the simulator (24.6 +/- 3.0 vs. 18.3 +/- 3.6, $p < 0.001$). However, previous experience in the operating theatre and PGY level did not correlate with performance during the OSCE.

CONCLUSION(S): This study confirmed the feasibility of incorporating the UroMentor at OSCEs to assess competency of urology PGTs in ureteroscopic stone extraction skills. Moreover, PGTs who practiced on the simulator scored significantly higher than those who did not practice.

Status

CONFERENCE ABSTRACT

Institution

(Aloosh, Couture, Andonian) MontrealCanada

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516.

True stone free rates of flexible ureteroscopy for renal calculi utilizing strict ct criteria.

York N.E., Elmansy H.M., Rivera M.E., Krambeck A.E., Lingeman J.E.

Embase

Journal of Urology. Conference: 112th Annual Meeting of the American Urological Association, AUA 2017. Boston, MA United States. 197(4 Supplement 1) (pp e439), 2017. Date of Publication: April 2017.

[Conference Abstract]

AN: 616357348

INTRODUCTION AND OBJECTIVES: Stone free rate (SFR) determines ureteroscopy (URS) success rates. Inconsistent reporting using X-ray, ultrasound or CT scan contributes to data heterogeneity. A CT scan provides the most accurate assessment of SFR. Low dose CT scan (LDCT) is an attractive follow up imaging option, offering reduced radiation dose while preserving superior stone fragment visualization of a CT scan. We sought to assess SFR at our high volume

institution using low dose CT scan (LDCT) to provide the most accurate assessment of contemporary ureteroscopy success rates.

METHOD(S): A retrospective review of all patients undergoing flexible URS for renal stones with subsequent LDCT scan within 6 months of operation date. The operation note, CT report and images of every patient were reviewed to determine a ?true?, zero fragment SFR. A ureteral access sheath was placed and meticulous basketing of all stone fragments rather than dusting were utilized wherever possible. Patients with ureteral calculi alone, without co-existing renal calculi were not included in this study. Patients with true nephrocalcinosis (as determined by visual inspection of papilla at the time of URS) were assigned the ?stone free? category.

RESULT(S): Flexible URS was performed in 202 renal units of 150 patients with intrarenal calculi from September 2003 to July 2016. 71 out of 150 patients (47%) were male. 140 renal units were completely stone free by LDCT assessment representing a 69% ?true? SFR. 62 renal units had residual fragments. The largest fragment size was 1mm in 3% (6/202 renal units), 2-4 mm in 19% (39/202 renal units) and > 4 mm in 8% (17/202 renal units).

CONCLUSION(S): True stone free rate in patients undergoing flexible ureteroscopy for renal calculi utilizing active basketing of fragments, as determined by strict low dose CT assessment, is 69%. In patients with residual fragments, the majority are 2-4 mm in size.

Status

CONFERENCE ABSTRACT

Institution

(York, Elmansy, Rivera, Krambeck, Lingeman) IndianapolisINUnited States

Publisher

Elsevier Inc.

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Prospective randomized study of flexible ureteroscopic holmium laser lithotripsy using high-frequency stone dusting versus a low-frequency stone breaking protocol for the treatment of renal stones larger than 2 cm.

Singh A., Jain A., Ganpule A., Sabnis R., Desai M.

Embase

Journal of Urology. Conference: 112th Annual Meeting of the American Urological Association, AUA 2017. Boston, MA United States. 197(4 Supplement 1) (pp e438), 2017. Date of Publication: April 2017.

[Conference Abstract]

AN: 616357309

INTRODUCTION AND OBJECTIVES: Flexible Uretero- Renoscopy (FRUS) is used in cases with large (>2 cm) renal stones, but the duration of surgery gets unduly prolonged and there is increase incidence of staged procedure.

METHOD(S): A single-center prospective randomized doublearm study was performed to compare the high-frequency stone dusting and low-frequency stone breaking laser settings in FURS for the treatment of high-burden stone disease. Patients with stone size of >2 cm and <5 cm in the case of a single stone or the cumulative size of the largest stone diameters for stones =5 cm in case of multiple stones were included. The primary end point was the procedure time.

RESULT(S): The planned enrollment included 15 patients in each arm of the study. After 6 patients were enrolled in each arm, an interim analysis was performed, and the results were reported to the human research ethics committee (HREC). The average number of stones in each renal unit was 1.53+/-0.7 and 2.01+/-0.8 in Groups 1 and 2, respectively. The average stone bulk was 4734+/-2387 cc and 5666.67+/-1032.796 cc in Groups 1 and 2, respectively. In Group 1, eleven patients (11/15) could be completely cleared of stones at the end of one month after a single-stage FURS using high frequency dusting protocols. In Group 2, (50%) the stones could be cleared after a single session of FURS using the low frequency stone breaking protocol at the end of one month in three patients.

CONCLUSION(S): A high-frequency stone dusting protocol was significantly more effective than a low-frequency stone breaking protocol for FURS in the treatment of high bulk renal calculus disease. (Table Presented).

Status

CONFERENCE ABSTRACT

Institution

(Singh, Jain, Ganpule, Sabnis, Desai) NadiadIndia

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518.

Comparison of parameters of standard reusable flexible uretero-renaloscopes with a single use uretero-renaloscope (Lithovue).

Fojeci G., Hennessy D., Lawrentschuk N., Bolton D.

Embase

Journal of Urology. Conference: 112th Annual Meeting of the American Urological Association, AUA 2017. Boston, MA United States. 197(4 Supplement 1) (pp e686), 2017. Date of Publication: April 2017.

[Conference Abstract]

AN: 616357088

INTRODUCTION AND OBJECTIVES: The new single use digital flexible ureteroscope (fURS), LithoVue is an evolution in digital ureteroscope design. We aimed to assess the capability of this instrument in-vivo and in-vitro, and to compare it to commonly used flexible ureteroscopes in regard to these metrics and also its cost effectiveness **METHODS:** An analysis of standard flexible ureteroscope (Olympus URF-V) usage at our institution over 30 months was performed for a cost analysis of fURS practice. The LithoVue was then examined in-vitro for manoeuvrability and flow and compared to Olympus URF-V and Storz Flex Xc. Finally, LithoVue was used in 3 patients for the treatment of renal calculi. The single-use ureteroscope (Lithovue, Boston Scientific) and two reusable scopes (URF-F, Olympus and Flex-Xc, Karl Storz) were assessed. Angulation and irrigation fluid flow were examined first with an empty working channel and then with various instruments engaged: - hydrophilic guide wire - hydrophilic tip wire - laser fiber (200mm) - basket (1.9Fr) - biopsy forceps (3Fr) **RESULTS:** With regard to cost analysis 265 fURS procedures were performed over the study period. 20 instances of ureteroscope damage

occurred e classed as 15 major and 5 minor. Total cost of repairs was \$162,587 AUD. Including purchase price and repair costs, mean cost per fURS case was \$1883 AUD. In regard to performance metrics, with an empty working channel the Lithovue was superior to both the URF-V and Flex Xc in terms of movement. Flexion of the Lithovue is 285degree, while the URF-V is 180degree and the Flex Xc is 283degree. Deflection for the Lithovue is 286degree, the URF-V is 270degree and the Flex Xc 219degree. Superiority of the Lithovue over the two other ureteroscopes was maintained for movement in both directions with a variety of instruments placed within the working channel. Finally, the LithoVue was demonstrated to display satisfactory ergonomics, manoeuvrability and image quality in the treatment of renal stones in 3 patients. Instruments decreased the angulation range and fluid flow. However it was still possible to bend tested devices to almost 180 degrees in every case, which should be enough to reach all kidney calyces. Furthermore there were only slight differences in fluid flow in used scopes.

CONCLUSION(S): This version of a single use disposable flexible ureteroscope offers similar technical specifics to multiple use flexible ureteroscopes in regard to range of flexion and extension, and also in regard to fluid flow rates. It is likely to find utility in aspects of endourologic practice depending upon pricing issues. Based on purchase costs and rate of repair it may also represent a cost saving for hospitals in regard to an amortised cost per case for this procedure.

Status

CONFERENCE ABSTRACT

Institution

(Fojecki, Hennessy, Lawrentschuk, Bolton) MelbourneAustralia

Publisher

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Year of Publication

2017

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Impact of laser fiber tip cleavage on power output for ureteroscopy and stone treatment.

Haddad M., Emiliani E., Doizi S., Rouchausse Y., Coste F., Berthe L., Traxer O.

Embase

Journal of Urology. Conference: 112th Annual Meeting of the American Urological Association, AUA 2017. Boston, MA United States. 197(4 Supplement 1) (pp e684-e685), 2017. Date of Publication: April 2017.

[Conference Abstract]

AN: 616357001

INTRODUCTION AND OBJECTIVES: Holmium:YAG laser is the most used laser for urolithiasis treatment. As recommended in the literature, we use metallic scissors to cut the fiber tip in order to restore its effectiveness. Many cleaving methods have been described to avoid the fiber damage and to restore its greatest power such as metallic surgical scissors, scalpel, ceramic scissors or strippers. The aim of this study was to compare different methods of cleavage in order to improve the use of the laser in endo-urology.

METHOD(S): New single use 272mm fibers (Rocamed) were used with the MH01-ROCA FTS30W (Rocamed) lithotripter. Five different kinds of fiber tip were compared: a new intact fiber, cleaved with ceramic scissors, cleaved with metallic scissors, first cleaved with ceramic scissors then stripped and first stripped then cut with ceramic scissors (Figure 1A-1B). The fibers were used against synthetic stones, with fragmentation and dusting settings. We measured power output at 0, 1, 5, 10 and 15 minutes and evaluated the laser beam after 1 minute (Figure 1C).

RESULT(S): At t0, all the fibers had less than 7.5W. For fragmentation parameters (Figure 2A), there was a statistical difference between the 5 groups at 0 minutes ($p=0.042$) and 1 minute of laser use ($p=0.042$). After 1 minute of laser use, there was no statistical differences between the 5 groups. For dusting parameters (Figure 2B), there was a statistical difference at 0 minutes ($p=0.022$). At the 1-minute analysis and after, all the results were not statistically different. Laser fibers are made with two layers of silica with different refractive indices, which allow the light to travel along the fiber until the fiber tip. When the interaction of the two layers of silica is damaged, as in lithotripsy, or after cleaving the fiber, the energy leaks through the fissures and the power output is decreased.

CONCLUSION(S): Cleaving the fiber tip may restore its effectiveness to the fiber but, as we demonstrated, only for a limited time. Though, cleaving the fiber tip may preserve the scopes from damages. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Haddad, Emiliani, Doizi, Rouchausse, Coste, Berthe, Traxer) ParisFrance

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520.

Impact of laser fiber tip cleavage on power output for ureteroscopy and stone treatment.

Haddad M., Emiliani E., Rouchausse Y., Coste F., Berthe L., Doizi S., Buttice S., Somani B.,
Traxer O.

Embase

World journal of urology. 35(11) (pp 1765-1770), 2017. Date of Publication: 01 Nov 2017.

[Article]

AN: 622855339

PURPOSE: Holmium:YAG laser is the most used laser for urolithiasis. Generally, we use metallic scissors to cut the fiber tip to restore its effectiveness. Many cleaving methods have been described to avoid fiber damage and to restore its greatest power to the fiber. There is a lack of information regarding which cleaving method should be used and its effect on the fiber. In order to compare these effects, we studied different cleavage methods in terms of power output and its effects on the fiber. **METHODS:** New single-use 272- μ m fibers were used with a holmium:YAG laser lithotripter. Five kinds of fiber tips were compared: a new intact fiber, cleaved with ceramic scissors, cleaved with metallic scissors, first cleaved then stripped and first stripped then cleaved. The fibers were used against synthetic stones (BegoStone) similar to calcium oxalate monohydrate, with fragmentation (SP, 5 Hz, 1.5 J) and dusting (LP, 15 Hz, 0.5 J) settings. We measured power output at 0, 1, 5, 10 and 15 min.

RESULTS: For fragmentation parameters, there was a statistical difference between the 5 groups at 0 and 1 min of laser use ($p < 0.05$) and none for time period over 1 min ($p = 0.077-0.658$). For

dusting parameters, there was a statistical difference between the 5 groups at 0 min of laser use ($p < 0.05$) and none for time period over 0 min ($p = 0.064-1$).

CONCLUSION: Cleaving the fiber tip may restore its effectiveness to the fiber, but only for a limited time, although it may preserve the scopes from damage.

PMC Identifier

28560471 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=28560471>]

Institution

(Haddad, Doizi, Somani, Traxer) Department of Urology, Tenon Hospital, Assistance-Publique Hopitaux de Paris, 4 rue de la Chine, 75020, Paris, France (Haddad, Emiliani, Doizi, Buttice, Somani, Traxer) Sorbonne Universites, UPMC Univ Paris 06, AP-HP, GRC ndegree20, Groupe de Recherche Clinique sur la Lithiase Urinaire, Hopital Tenon, 4 rue de la Chine, 75020, Paris, France

(Haddad, Rouchausse, Coste, Berthe) Process and Engineering in Mechanics and Materials Laboratory (PIMM), UMR CNRS/ENSAM 8006, Paris, France

(Emiliani) Department of Urology, Fundacion Puigvert, Universitat Autonoma de Barcelona, Barcelona, Spain

(Buttice) Department of Human Pathology, Section of Urology, University of Messina, Via Consolare Valeria 1, 98125, Messina, Italy

Year of Publication

2017

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521.

Which is the best way to treat a stone on a flexible ureterorenoscopy? , Opinion: Dusting.

Lopes A.C.

Embase

International braz j urol : official journal of the Brazilian Society of Urology. 43(5) (pp 802-804), 2017. Date of Publication: 01 Sep 2017.

[Article]

AN: 621134527

PMC Identifier

29035474 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=29035474>]

Institution

(Lopes) Grupo de Litiase e Endourologia da Disciplina de Urologia da Faculdade de Medicina ABC, Santo Andre, SP, Brasil

Year of Publication

2017

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522.

To Dust or Not To Dust: a Systematic Review of Ureteroscopic Laser Lithotripsy Techniques.

Santiago J.E., Hollander A.B., Soni S.D., Link R.E., Mayer W.A.

Embase

Current Urology Reports. 18(4) (no pagination), 2017. Article Number: 32. Date of Publication: 01 Apr 2017.

[Review]

AN: 614743038

Purpose of Review: This review discusses factors affecting outcomes during ureteroscopy (URS) with laser lithotripsy (LL), explores specific clinical challenges to the efficacy of URS LL, and reviews the available literature comparing the dusting and basketing approaches to URS LL.

Recent Findings: Data show high stone-free rates with URS LL in all locations of the urinary tract and with all stone types and sizes. Recent data comparing LL with dusting versus basketing suggest higher rates of residual fragments with dusting but less utilization of ureteral access

sheaths and potentially shorter operative times. Differences in postoperative complications, re-intervention rates, and other outcome parameters are not yet clear. Interpretation of published data is problematic due to variability in laser settings, follow-up intervals, and definitions for what constitutes stone-free status.

Summary: URS has overtaken shock wave lithotripsy in the last decade as the most commonly utilized surgical approach for treating urolithiasis. Two primary strategies have emerged as the most common techniques for performing LL: dusting and basketing. There is a relative paucity of data examining the difference in these techniques as it pertains to peri-operative outcomes and overall success. We attempt to synthesize this data into evidence-based and experience-based recommendations.

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PMC Identifier

28271355 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=28271355>]

Status

Embase

Institution

(Santiago) Baylor College of Medicine, Houston, TX, United States (Hollander, Soni, Link, Mayer) Scott Department of Urology, Baylor College of Medicine, 7200 Cambridge, 10th Floor, Urology Suite B, Houston, TX 77030, United States

Publisher

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Robotic pyelolithotomy in a congenital pelvic kidney: side docking and robotic prostatectomy port - site approach.

Al-Yousef R., Almarzouq A., Aldousari S.

Embase

International braz j urol : official journal of the Brazilian Society of Urology. 43(2) (pp 374), 2017.

Date of Publication: 01 Mar 2017.

[Article]

AN: 617983298

INTRODUCTION AND OBJECTIVES: Ectopic pelvic kidneys with renal stones are challenging to treat. We report our experience in managing a case of ectopic pelvic kidney with a pelvic stone by robotic pyelolithotomy after failure of flexible ureteroscopy. MATERIALS AND METHODS: A 46-year old male with 2 months history of vague lower abdominal pain was found to have on Computed Tomography scan a left ectopic pelvic kidney with a 12mm stone in an anomalous renal pelvis. Flexible ureteroscopy failed to reach the stone twice and a 4.7 French ureteric stent was placed.

RESULTS: Side docking was utilized with the patient in supine Trendelenburg position. Port placements were similar to robotic assisted laparoscopic prostatectomy. Docking time was 35 minutes and console time was 150 minutes. Multiple attempts failed to follow the course of the ureter to the renal pelvis. Subsequently the renal pelvis was directly opened through the mesocolon and a flexible cystoscope was used to basket the stone out. Estimated Blood Loss was < 100ml. The patient was discharged 2 days postoperatively.

CONCLUSION: Robotic pyelolithotomy is safe and feasible for management of ectopic pelvic kidneys with pelvic stones. The use of flexible cystoscopy helped in localizing and extracting the stone in our case. Detailed understanding of patient's anatomy helps in the success of this procedure.

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PMC Identifier

27778490 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=27778490>]

Institution

(Al-Yousef) Faculty of Medicine, Kuwait University, Kuwait (Almarzouq) Urology Unit,

Department of Surgery, Mubarak Alkabir Hospital, Kuwait

(Aldousari) Urology Unit, Department of Surgery, Faculty of Medicine, Kuwait University, Kuwait

Year of Publication

2017

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524.

New technology in ureteroscopy and percutaneous nephrolithotomy.

Rassweiler J., Rassweiler M.-C., Klein J.

Embase

Current Opinion in Urology. 26(1) (pp 95-106), 2016. Date of Publication: 01 Jan 2016.

[Review]

AN: 608231568

Purpose of review New developments of retrograde intrarenal and percutaneous endoscopic surgery for nephrolithiasis have significantly enhanced the indications of endourology compared to extracorporeal shock wave lithotripsy. We want to review the most significant new technologies Recent findings New technology to access the renal collecting system includes marker-based tracking with iPad, laser-guided puncture on (Uro)Dyna-CT, electromagnetic tracking (only experimental), and optical tracking for ultrasound-guided puncture. Miniaturization percutaneous nephrolithotomy has been further extended and classified to Midi-PCNL (20-22F/L), Mini-PCNL (16-18F/M), Ultra/Super-mini-PCNL (12-14F/S), and Micro-PCNL (8-10F/XS). Knowledge of Ho:YAG-laser lithotripsy including power settings for fragmentation (depending on stone composition), dusting (0.5J/20Hz), and popcorn-effect/laser-burst (1J/30Hz) becomes mandatory. Also hydrodynamic mechanisms for retrieval of fragments (active/passive washout, purging, vacuum-cleaner-effect) have gained importance. Improvements of FURS focus on digital-HD-video-technology with post-processing software (NBI/SPIES) providing better resolution and increased optical field, further miniaturization of endoscopes to fit in smaller access sheath (12/14F), additional tip-less Nitinol baskets and graspers, and introduction of a robotic device (Avicenna Roboflex) to improve ergonomics of the procedure. Summary Based on recent technical developments, percutaneous nephrolithotomy and particularly flexible ureteroscopy will further gain preference in management of urolithiasis compared to ESWL. Endourology may offer a higher rate of primary success with minimal side-effects which could weigh out the slightly higher degree of invasiveness.

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PMC Identifier

26626887 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=26626887>]

Status

Embase

Institution

(Rassweiler) Department of Urology, SLK Kliniken Heilbronn, Am Gesundbrunnen 20, Heilbronn D-77074, Germany (Rassweiler) Department of Urology, Medical School Mannheim, University of Heidelberg, Heidelberg, Germany

(Klein) Department of Urology, University of Ulm, Ulm, Germany

Publisher

Lippincott Williams and Wilkins (E-mail: agents@lww.com)

Year of Publication

2016

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525.

Biochemical composition of urolithiasis from stone dust - a matched-pair analysis.

Ray E.R., Rumsby G., Smith R.D.

Embase

BJU International. 118(4) (pp 618-624), 2016. Date of Publication: 01 Oct 2016.

[Article]

AN: 612174419

Objective: To determine if the biochemical composition of a renal calculus can be measured from 'dust' obtained during laser fragmentation.

Patients and Methods: This pilot study was set in a tertiary referral hospital between 2011 and 2013. Stone dust was aspirated through the ureteroscope during lasering and a stone fragment also retrieved. Both samples were analysed by Fourier transform infrared spectroscopy. Pairs of

stone (standard) and dust were compared. They were deemed to match if both were of the same pure biochemical composition or if the predominant constituent was the same in mixed compositions, as this would not alter subsequent management.

Result(s): Paired specimens were obtained from 97 ureteroscopies. The dust specimen was sufficient for analysis in 66/97 (68%) cases. Of these, the composition matched that of the stone in 49/66 (74%) cases. In 12/66 (18%) the biochemistry differed only in the relative proportions of each constituent, whilst 5/66 (8%) showed a complete mismatch. The overall sensitivity was 51% and specificity 97%. A limitation of the study is the small number of some stone types analysed (<5 each cystine, atazanavir, mixed uric acid/calcium oxalate).

Conclusion(s): We have demonstrated in this pilot study successful proof of principle. Further work is required initially to improve the number of sufficient dust specimens. This technique may offer an option when a stone cannot be retrieved ureteroscopically.

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PMC Identifier

26917210 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=26917210>]

Status

Embase

Institution

(Ray, Smith) Department of Urology, University College Hospital London, London, United Kingdom (Rumsby) Department of Biochemistry, University College Hospital London, London, United Kingdom

Publisher

Blackwell Publishing Ltd (E-mail: customerservices@oxonblackwellpublishing.com)

Year of Publication

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526.

Evaluation of dusting versus basketing-can new technologies improve stone-free rates?.

Weiss B., Shah O.

Embase

Nature Reviews Urology. 13(12) (pp 726-733), 2016. Date of Publication: 01 Dec 2016.

[Review]

AN: 612619610

Over the past two decades, the management of upper-tract urinary stones has dramatically changed towards an increase in the use of ureteroscopic treatment. This change has been driven by technological advances such as the creation of flexible ureteroscopes with reduced calibre (which now have digital, disposable and dual flexion capability) and holmium lasers with increased power. Two basic principles exist when treating stones ureteroscopically: either creating stone dust and small fragments (<1-2 mm) to theoretically enable spontaneous passage of the small particles or stone fragmentation that enables safe extraction of the stone pieces with a basket or grasper in an efficient manner. Each method has unique advantages and disadvantages, but, ultimately, surgeon preference, stone size, composition, location and intrarenal and/or ureteral anatomy determine which technique is used. To date, clinical trials comparing these two techniques are lacking.

PMC Identifier

27698400 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=27698400>]

Status

Embase

Institution

(Weiss) Department of Urology, NYU School of Medicine, 550 First Avenue, New York 10016, United States (Shah) Division of Endourology and Stone Disease, Department of Urology, Columbia University College of Physicians and Surg, New York Presbyterian Hospital/ Columbia, University Medical Center, 161 Fort Washington Avenue, New York 10032, United States

Publisher

Nature Publishing Group (Houndmills, Basingstoke, Hampshire RG21 6XS, United Kingdom)

Year of Publication

2016

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527.

Is it necessary to actively remove stone fragments during retrograde intrarenal surgery?.

Lee Y.J., Bak D.J., Chung J.-W., Lee J.N., Kim H.T., Yoo E.S., Kim B.S.

Embase

Investigative and Clinical Urology. 57(4) (pp 274-279), 2016. Date of Publication: July 2016.

[Article]

AN: 611290237

Purpose: Based on the experiences of our center, we sought to verify the necessity of actively removing stones during retrograde intrarenal surgery (RIRS) for the management of renal stones.

Material(s) and Method(s): From March 2010 to March 2015, 248 patients underwent RIRS at our center. We classified these patients into 2 groups according to the performance of active stone removal; group A (n=172) included the patients whose stones were actively removed using a stone basket, and group B (n=76) included the patients whose stones were fragmented with laser lithotripsy without active removal of the fragments. We retrospectively compared the operation time, success rate, and complication rate between the 2 groups.

Result(s): There were no significant differences between groups A and B in terms of mean age (56.1 years vs. 58.6 years), male to female ratio (115:57 vs. 46:30), mean body mass index (24.5 kg/m² vs. 25.0 kg/m²), mean preoperative size of stone (11.1 mm vs. 11.1 mm), the ratio of unilateral and bilateral stones (136:36 vs. 64:12), success rate (89.0% vs. 86.8%), operation time (82.5 minutes vs. 82.1 minutes), overall complication rate (9.9% vs. 11.8%), incidence of febrile urinary tract infection (6.4% vs. 2.6%), gross hematuria (1.7% vs. 2.6%), or postoperative de novo hydronephrosis (2.9% vs. 5.3%).

Conclusion(s): This study demonstrated that during RIRS, fragmentation only, without the active removal of stones, is a safe and effective technique in which the surgical outcomes are comparable to those of procedures involving the active removal of stones.

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27437537 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=27437537>]

Status

Embase

Institution

(Lee, Bak, Chung, Lee, Kim, Yoo, Kim) Department of Urology, Kyungpook National University
School of Medicine, Daegu, South Korea

Publisher

Korean Urological Association (E-mail: urology@urology.or.kr)

Year of Publication

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528.

Ureteroscopy for management of stone disease: An up to date on surgical technique and disposable devices.

Torricelli F.C.M., Marchini G.S., Pedro R.N., Monga M.

Embase

Minerva Urologica e Nefrologica. 68(6) (pp 516-526), 2016. Date of Publication: December 2016.

[Review]

AN: 613737689

The surgical management of urinary stone disease developed substantially over the past decades and advanced minimally invasive techniques have been successfully introduced into clinical practice. retrograde ureteroscopy and ureterorenoscopy have become the first-line option for treatment of ureteral and renal stones worldwide with high success rates allied with a low morbidity profile. In this review, we will discuss some key points in ureteroscopy for stone disease, such as the access to upper urinary tract, including balloon and catheter dilation; how to choose and use some disposable devices (hydrophilic versus PTFE guide wires, ureteral catheters, and laser fiber setting); and lastly present and compare different techniques for kidney or ureteral stone treatment (dusting versus basketing).

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PMC Identifier

27441593 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=27441593>]

Status

Embase

Institution

(Torricelli, Marchini) University of Sao Paulo Medical School, Sao Paulo, Brazil (Pedro)

Universidade Estadual de Campinas, Campinas, Brazil

(Torricelli, Marchini, Pedro, Monga) Glickman Urological and Kidney Institute, Cleveland Clinic, Cleveland, OH, United States

Publisher

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Year of Publication

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529.

Transfer of Flexible Ureteroscopic Stone-Extraction Skill from a Virtual Reality Simulator to the Operating Theatre: A Pilot Study.

Aloosh M., Nouredin Y.A., Andonian S.

Embase

Journal of Endourology. 30(10) (pp 1120-1125), 2016. Date of Publication: October 2016.

[Article]

AN: 612649581

Aim: To assess the learning curve of flexible ureteroscopic stone extraction using the UroMentor™ simulator and transfer of flexible ureteroscopic stone extraction skills to the operating theatre.

Material(s) and Method(s): After obtaining ethics approval, urology Post-Graduate Trainees (PGTs) from Post-Graduate Years (PGYs) 1 to 4 were recruited. During phase I, participants completed 3 weekly 1-hour training sessions on the UroMentor simulator practicing task 10, where two stones from the left proximal ureter and renal pelvis were extracted using a basket. Objective assessments by the simulator and subjective assessments using the validated Ureteroscopy-Global Rating Scale (URS-GRS) were used to establish the learning curve. During phase II, the URS-GRS tool was used to assess performance of participants in the operating theatre. URS-GRS scores obtained on the simulator and in the operating theatre were correlated. **Result(s):** In phase I, eight urology PGTs (PGY1-4) with mean age of 27.8 +/- 2 (25-31) years participated in the study. PGTs practiced a total of 52 times, with a mean operative time of 14.6 +/- 4.3 minutes and a mean fluoroscopy time of 10.4 +/- 12 seconds. Competency in task 10 was achieved after seven trials on the UroMentor simulator. In phase II, 5 PGTs were assessed during 55 consecutive flexible ureteroscopic stone extraction in the operating theatre. The mean operative time was 51.4 +/- 15.2 minutes and the mean fluoroscopy time was 29 +/- 6 seconds. There was a significant positive correlation between URS-GRS scores obtained on the simulator and in the operating theatre ($r = 0.9$, $p = 0.03$), thus establishing predictive validity of performance on the UroMentor simulator.

Conclusion(s): Competency in task 10 on the UroMentor simulator (flexible ureteroscopic stone extraction) was achieved after seven trials. Since there was a strong positive correlation between URS-GRS scores on the simulator and in the operating theatre, the skills obtained on the simulator could be transferred to the operating theatre.

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PMC Identifier

27532227 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=27532227>]

Status

Embase

Institution

(Aloosh, Noureldin, Andonian) Division of Urology, McGill University Health Centre, 1001 Boulevard Decarie, Montreal, QC H4A 3J1, Canada (Noureldin) Department of Urology, Benha University Hospital, Benha University, Benha, Egypt

Publisher

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Year of Publication

2016

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530.

Ureteral Avulsion Associated with Ureteroscopy: Insights from the MAUDE Database.

Tanimoto R., Cleary R.C., Bagley D.H., Hubosky S.G.

Embase

Journal of Endourology. 30(3) (pp 257-261), 2016. Date of Publication: 01 Mar 2016.

[Article]

AN: 609056668

Background: Flexible and semirigid ureteroscopy (URS) are widely performed for the treatment of upper tract calculi and tumors. Ureteral avulsion is a rare, but devastating complication of endoscopic stone removal having multiple possible etiologies. Awareness and avoidance of this rare complication depend on identifying responsible mechanisms. This study examines the situations in which ureteral avulsion occurs as described anonymously in the Manufacturer and User facility Device Experience (MAUDE) database.

Material(s) and Method(s): The MAUDE database was systematically reviewed to account for all reported complications of flexible and semirigid URS. Keywords "ureteroscopy, injury, death, malfunction and other" were entered in the database and medical device reports were reviewed to capture any cases resulting in ureteral avulsion. Attention was paid to the type of ureteroscope involved and the mechanism for avulsion.

Result(s): A total of 104 entries were found detailing the reported complications of flexible and semirigid URS. Ureteral avulsion was clearly noted in six reports with flexible (2) and semirigid ureteroscopes (4). Potential mechanisms included locked deflection of a flexible ureteroscope (1), bunching of the distal bending rubber in a flexible ureteroscope (1), scabbard avulsion (3), and stone basketing (1).

Conclusion(s): Although the incidence of ureteral avulsion cannot truly be determined from this study, some potentially novel mechanisms for this rare complication are observed. This may target future educational efforts to maximize awareness and avoidance of this complication.

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PMC Identifier

26507706 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=26507706>]

Status

Embase

Institution

(Tanimoto, Cleary, Bagley, Hubosky) Department of Urology, Thomas Jefferson University Hospital, 1025 Walnut Street, Philadelphia, PA 19107, United States

Publisher

Mary Ann Liebert Inc. (E-mail: info@liebertpub.com)

Year of Publication

2016

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531.

Can We Provide Low Intrarenal Pressures with Good Irrigation Flow by Decreasing the Size of Ureteral Access Sheaths?.

Sener T.E., Cloutier J., Villa L., Marson F., Buttice S., Doizi S., Traxer O.

Embase

Journal of Endourology. 30(1) (pp 49-55), 2016. Date of Publication: January 2016.

[Article]

AN: 607790534

Background and Purpose: Flexible ureterorenoscopy (F-URS) plays a major role in the management of kidney stones. Ureteral access sheaths (UAS) are important tools for F-URS. In this study, we aimed to evaluate the difference in intrarenal pressures between different flexible ureteroscopes while using the same UAS and to calculate the irrigation flow variance.

Material(s) and Method(s): Eight different flexible ureteroscopes were tested with five different UAS on an artificial kidney model to measure intrarenal pressures and irrigation flow. Irrigation at 60 cmH₂O pressure was performed; the pressure and the irrigation flow amount were recorded

with different states of the operator channel: Free, with the laser fiber (272 μm), and with the nitinol basket (1.9F) inside.

Result(s): The highest pressure recorded was 46.68 cmH₂O with Wolf Boa and 9.5/11.5F Cook Medical UAS. All the ureteroscopes that fit inside the 10/12F Coloplast ReTrace provided pressures below 40 cmH₂O. The inner diameter of the 10/12F Rocamed Bi-Flex is actually 11F, so intrarenal pressures were lower and irrigation flow was higher. With the 11/13F Boston Scientific Navigator HD and 12/14F Coloplast ReTrace, the pressures were very low. The irrigation flow measurements were in concordance with pressure measurements.

Conclusion(s): The ureteroscope sizes diminished with advancements in technology. Small-sized ureteroscopes can provide low intrarenal pressures with good irrigation flow when used with convenient small-sized access sheaths. The compatibility between the ureteroscopes and UASs should be anticipated by all endourologists and considered during F-URS. The advantages of 10/12 UASs in terms of intrarenal pressure and irrigational flow should make these access sheaths an interesting first-line choice.

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Status

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Institution

(Sener, Cloutier, Villa, Marson, Buttice, Doizi, Traxer) Pierre and Marie Curie University,
Department of Urology, Tenon University Hospital, 4 Rue de la Chine 7, Paris 5020, France

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Mary Ann Liebert Inc. (E-mail: info@liebertpub.com)

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532.

Laparoscopic-assisted mini percutaneous nephrolithotomy in the ectopic pelvic kidney: Outcomes with the laser dusting technique.

Dsouza N., Verma A., Rai A.

Embase

Urology Annals. 8(1) (pp 87-90), 2016. Date of Publication: January 2016.

[Article]

AN: 607439615

Introduction: The treatment of renal lithiasis has undergone a sea change with the advent of extracorporeal shock wave lithotripsy (ESWL) and endourological procedures such as percutaneous nephrolithotomy (PCNL), ureterorenoscopy and retrograde intrarenal surgery (RIRS). The presence of anatomical anomalies, such as ectopic pelvic kidney, imposes limitations to such therapeutic procedures. This study is aimed to find a simple and effective way to treat the stones in ectopic kidney.

Material(s) and Method(s): From 2010 to 2014, nine patients underwent laparoscopic-assisted mini PCNL with Laser dusting for calculi in ectopic pelvic kidneys at our hospital. Retrograde pyelography was done to locate the kidney. Laparoscopy was performed and after mobilizing the bowel and peritoneum, the puncture was made in the kidney and using rigid mini nephroscope, and stones were dusted with Laser.

Result(s): The median interquartile range (IQR) stone size was 18 (6.5) mm. Median (IQR) duration of the procedure was 90 (40) min. The median (IQR) duration of postoperative hospital stay was 4 (2) days. The stone clearance in our series was 88.9%, with only one patient having a residual stone. No intra- or post-operative complications were encountered.

Conclusion(s): Laparoscopy-assisted mini PCNL with Laser dusting offers advantages in ectopic pelvic kidneys in achieving good stone clearance, especially in patients with a large stone burden or failed ESWL or RIRS.

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Institution

(Dsouza, Verma, Rai) Department of Urology, Yenepoya Medical College and Hospital, Derlakatte, Mangalore, Karnataka, India

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533.

Superperc in varieties of upper tract urolithiasis and for renal stone >1.5 cm.

Kaushikkumar S., Madhu A.

Embase

Indian Journal of Urology. Conference: 49th Annual Conference of Urological Society of India, USICON 2016. Hyderabad India. 32(Supplement 1) (no pagination), 2016. Date of Publication: January 2016.

[Conference Abstract]

AN: 620075344

Introduction and Objectives: Superperc is an upcoming modality for stone less than 1.5 cms.

Advances in optics & availability of holmium laser lithotripsy have made MIPP effective.

Superperc has suction capability with retrograde irrigation via multihole ureteric catheter. With increased speed of clearance of fragments, we evaluated feasibility in varied cases of upper tract urolithiasis with stone greater than 1.5 cms.

Method(s): All available varieties of low volume upper tract urolithiasis were treated by this technique. Multihole ureteric catheter is placed cystoscopically In prone position, suitable calyx preferably upper calyx is punctured & 10/12F superperc sheath is placed. Short ureteroscope is used. Laser lithotripsy is used to fragment/dust the stone. Suction combined with retrograde irrigation is used to clear the fragments rapidly. No nephrostomy is kept. DJ stent is kept if needed.

Result(s): Total 43 cases were treated in 16 months. It included renal stone >1.5 cms, upper ureteric stones, multiple stones, 2 with horseshoe kidney & 1 anomalous kidney, 1 with 2 years of age. 2 cases required conversion to 15F tract & one 22F tract to complete clearance. One

needed 2nd stage. There was 100% clearance. 7 patients had very minor hematuria, none needed transfusion. 5 had minor fever postoperatively. 20 patients had DJ stents & one had nephrostomy. Average hospital stay was 2 days.

Conclusion(s): It is feasible to offer superperc in wide varieties of upper tract urolithiasis.

Multicentric trials are needed to evaluate feasibility, safety & efficacy of superperc.

Status

CONFERENCE ABSTRACT

Institution

(Kaushikkumar, Madhu) Varun Kidney Hospital, Surat, Gujarat, India

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534.

Initial experience of RIRS.

Bhuiyan N.I.

Embase

Indian Journal of Urology. Conference: 49th Annual Conference of Urological Society of India, USICON 2016. Hyderabad India. 32(Supplement 1) (no pagination), 2016. Date of Publication: January 2016.

[Conference Abstract]

AN: 620075250

Introduction: Ability to obtain direct retrograde endoscopic access to ureter and kidney revolutionalized for treatment and diagnosis of upper urinary tract calculi, tumours and renal obstruction. Though the technique was introduced in different part of the world for a long time but

in Bangladesh it is regularly going on in small number of institute from a short time. This study was done to access Initial experience of RIRS for management of upper urinary tract calculi. Material(s) and Method(s): During July 2014 to December 2014 total 30 cases were underwent RIRS for management of upper urinary tract calculi. Among the 30 cases post PCNL residual stone 3 cases, middle calyceal stone 15 cases, upper ureteric stone 5 cases, renal pelvic stone 7 cases. Only 3 cases stone size more than 3 cm. Calculi were fragmented/dusted by holmium Laser. All cases done under general anesthesia. D J stent introduced in 17 cases and in other cases ureteric catheter kept in situ for next 24 hours.

Result(s): Age range 25 to 65 years. Average operation time 60 mins, stone clearance confirmed by direct visualization and C arm fluoroscope. Ureteric catheter along with urethral catheter removed on 1st POD. D J stent removed on 14th POD. None patient required blood transfusion. Duration of hospital stay 2-4 days. All patient followed up in 2 weeks.

Conclusion(s): RIRS is safe and effective method for the management of Upper ureteric & renal stone. RIRS by use of Flexible URS in the treatment of upper ureteric & renal stone offers a urologist wide range of therapies. Hospital stay short, patient can go normal activity faster. It needs expertise. For further comment study on large number of cases and in different institute are required.

Status

CONFERENCE ABSTRACT

Institution

(Bhuiyan) Square Hospital, Dhaka, Bangladesh

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Laparoscopic ureterolithotomy with intracorporeal flexible ureteroscopy for uretric and renal pelvic calculus.

Avijit K., Anil J., Piyush T.

Embase

Indian Journal of Urology. Conference: 49th Annual Conference of Urological Society of India, USICON 2016. Hyderabad India. 32(Supplement 1) (no pagination), 2016. Date of Publication: January 2016.

[Conference Abstract]

AN: 620074722

Introduction and Objective: Calculus disease is a common scenario, recent advances in endourology and laparoscopy has shown excellent results, one patient presented to us with complaints of right flank pain, on evaluation was diagnosed to have 10 mm renal pelvic and 2.5 cm mid ureteric calculus.

Method(s): Patient underwent laparoscopic ureterolithotomy for mis ureteric calculus, flexible uteroscope was then introduced through the 5 mm port via access sheath into the ureter, stone was held by dormia basket and removed on toto.

Result(s): Patient tolerated the procedure well, took 80 min, 50 ml blood loss, no conversion to open, drain removed 2nd POD, patient discharged after 2 days dj stent removed at 6 weeks.

Conclusion(s): This modality of treatment is an excellent option to deal with these situations, complete armamentarium including flexible and rigid scopes is needed.

Status

CONFERENCE ABSTRACT

Institution

(Avijit, Anil, Piyush) Regnecy Renal Science Center, Kanpur, Uttar Pradesh, India

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536.

Flexible ureteroscopic holmium laser lithotripsy using high frequency stone dusting for treating renal stones: Our initial experience.

Abhinav J., Abhishek S., Shashikant M., Arvind G., Sabnis R.B., Desai M.R.

Embase

Indian Journal of Urology. Conference: 49th Annual Conference of Urological Society of India, USICON 2016. Hyderabad India. 32(Supplement 1) (no pagination), 2016. Date of Publication: January 2016.

[Conference Abstract]

AN: 620074758

Introduction: Holmium lithotripsy is the modality of choice for RIRS. Most surgeons use low wattage (20W) for stone clearance but that may lead to increase in operative time and incomplete stone clearance.

Material(s) and Method(s): A total of 15 patients with a total renal stone bulk of 2-4 cm underwent flexible ureteroscopic holmium laser lithotripsy using high frequency stone dusting with energy and frequency settings of 0.3-1 Joules and 35-80 Hz (40W). The end points in the study were total lasing and procedure time, use of accessories for stone clearance, stone clearance at 1 month follow up and use of auxiliary procedures for stone clearance Results: The average number of stones in each renal unit was 1.53 +/- 0.7. The average stone bulk was 4734 +/- 2387 cc. The average lasing time and total operative time was 21 +/- 14 minutes and 39.3 +/- 12 minutes respectively. One patient had staghorn with secondary calculi, 10 had stones in pelvis and single calyx whereas 4 patients had multiple calyceal calculi. 33.3% (5/15) patients had residual fragments larger than 2 mm intraoperatively The initial complete clearance rate at 1 month follow up was 73.3% (11/15) which improved to 100% with subsequent auxiliary procedures. PCNL, RIRS and a combination of RIRS and PCNL was employed for subsequent stone clearance.

Conclusion(s): High frequency flexible ureteroscopic holmium laser stone dusting is an efficient method of treating intrarenal calculi with high clearance rate.

Status

CONFERENCE ABSTRACT

Institution

(Abhinav, Abhishek, Shashikant, Arvind, Sabnis, Desai) Muljibhai Patel Urological Hospital, Nadiad, Gujarat, India

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537.

High energy holmium laser combined with suction for large renal stone lithotripsy.

Abhishek S., Mishra S., Murli V., Ganpule A., Singh A., Sabnis R.B., Desai M.

Embase

Indian Journal of Urology. Conference: 49th Annual Conference of Urological Society of India, USICON 2016. Hyderabad India. 32(Supplement 1) (no pagination), 2016. Date of Publication: January 2016.

[Conference Abstract]

AN: 620073287

Introduction and Objectives: The most common method for treatment of large burden kidney stones utilizes a direct approach to the kidney by percutaneous nephrolithotomy (PCNL). In order to achieve stone clearance remaining fragments need to be collected and removed. When treating large stone burdens, this can be a tedious and time consuming. The objective of this study was to demonstrate the use of high power holmium laser lithotripsy with simultaneous aspiration for the removal of large kidney stones.

Material(s) and Method(s): Prospective, open, single center study including twenty patients presenting with large burden kidney stone of at least 2 cm on a single diameter, requiring a PCNL procedure. A single procedure incorporating high powered holmium laser combined with suction and laser suction probe was performed. Stone clearance was demonstrated at the 1 month follow-up visit. Results PCNL was performed in 19 patients aged 52.52 +/- 23.5 years. There were 17 male patients and 2 female patients. The mean stone size and stone volume was 35.67

+/- 23.74 mm and 10450 cm³ respectively. The mean operative time was 57.5 +/- 27.9 minutes. The mean Lithotripsy time was 24.15 +/- 19.25 minutes with Hb drop of 1.24 gms%. Four patients had postoperative fever and 2 patients had hematuria out of which 1 required angioembolisation. Complete stone clearance was achieved in 15 patients at 1 month.

Conclusion(s): Removal of large burden kidney stone with high power holmium laser and simultaneous aspiration is efficient and safe. Calculi could be broken into fine dust reducing the need for fragment collection and resulted in shorter procedure time.

Status

CONFERENCE ABSTRACT

Institution

(Abhishek, Mishra, Murli, Ganpule, Singh, Sabnis, Desai) Department of Urology, Muljibhai Patel Urological Hospital, Nadiad, Gujarat, India

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538.

Natural history, complications, and re-intervention rates of asymptomatic residual stone fragments post-ureteroscopy: A report from the EDGE research consortium.

Chew B.H., Brotherhood H., Sur R.L., Knudsen B.E., Miller N.L., Yong C., Marien T., Wang A.-Q., Charchenko C., Krambeck A.E., Humphreys M.R.

Embase

Canadian Urological Association Journal. Conference: 71st Annual Meeting of the Canadian Urological Association. Vancouver, BC Canada. 10(5-6 Supplement 1) (pp S94), 2016. Date of Publication: June 2016.

[Conference Abstract]

AN: 617747070

Introduction and Objectives: Non-obstructing fragments <4 mm are termed "clinically insignificant residual fragments" (CIRFs) - a controversial term due to high rates of re-intervention. We examined the natural history, complication, and re-intervention rates of fragments following ureteroscopy.

Method(s): Data was collected retrospectively from members of the Endourology Disease Group for Excellence (EDGE) in 232 patients with residual fragments following ureteroscopy (URS) from 2006-2013. Patients with at least one KUB X-ray, ultrasound (US), or computed tomography (CT) within 12 months were studied for fragment location, size, growth, passage, complication, and re-intervention rates.

Result(s): Of the 232 subjects, 131 (56%) required no further intervention and remained asymptomatic, 34 (15%) developed complications requiring no intervention, and 67 (29%) required intervention. Fragments >4 mm were more likely to grow over time ($p<0.001$) and have complications ($p=0.039$). Logistic regression shows the original stone size ($p=0.0475$) to be the only significant predictor of complication. Re-intervention was predictable based on the size ($p=0.017$) and location of fragments ($p=0.02$). There was a trend towards complication depending on the location of residual fragments ($p=0.068$) and re-intervention with older age ($p=0.075$). Kaplan-Meier analysis found that dusting the stone and larger residual fragments (>4 mm) were more likely to require re-intervention ($p=0.004$). Re-interventions included URS (58), percutaneous nephrolithotomy (PCNL) (4), and shock wave lithotripsy (SWL) (3).

Conclusion(s): This study suggests that fragment sizes >4 mm following ureteroscopy is associated with significantly higher rates of stone growth, complications, and need for re-intervention. Even for fragments <4 mm, 28% underwent stone growth and 22% suffered a complication, challenging the traditional description of CIRF. Ensuring complete stone-free status is the best way to reduce the rate of complications and interventions following ureteroscopy.

Status

CONFERENCE ABSTRACT

Institution

(Chew, Brotherhood) Urologic Sciences, University of British Columbia, Vancouver, BC, Canada

(Sur, Wang) Urology, University of California San Diego, San Diego, CA, United States

(Knudsen, Yong) Urology, Ohio State University, Columbus, OH, United States

(Miller, Marien) Urology, Vanderbilt, Nashville, TN, United States

(Charchenko, Krambeck) Urology, Mayo Clinic, Rochester, MN, United States

(Humphreys) Urology, Mayo Clinic, Phoenix, AZ, United States

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539.

Dusting vs. basketing during ureteroscopic lithotripsy: A multicentre prospective trial from the EDGE Research Consortium.

Chew B.H., Shah O., Sur R.L., Knudsen B.E., Matlaga B.R., Krambeck A.E., Miller N.L., Monga M., Humphreys M.R.

Embase

Canadian Urological Association Journal. Conference: 71st Annual Meeting of the Canadian Urological Association. Vancouver, BC Canada. 10(5-6 Supplement 1) (pp S15), 2016. Date of Publication: June 2016.

[Conference Abstract]

AN: 617746090

Introduction and Objectives: There is little evidence as to whether dusting stones is more efficacious than basket extraction of fragments during ureteroscopic lithotripsy. We prospectively followed patients to determine which method resulted in the higher stone-free rate.

Method(s): Patients undergoing ureteroscopy for renal stones between 5-20 mm were eligible. The Endourology Disease Group for Excellence (EDGE) includes high-volume stone centres with well-established dusting (four sites) or basketing (four sites) approaches to renal calculi. Laser lithotripsy was used and patients were imaged within three months following ureteroscopy. The definition of stone-free was no fragments of any size on kidneys-ureters-bladder (KUB) and ultrasound imaging. All patients were stented postoperatively and given alpha blocker for 30 days.

Result(s): 59 patients were enrolled and followed for three months (n=36 basketing, n=23 dusting). The stones were slightly larger in the dusting group and significantly more laser energy

was used in the dusting group. Operating room time was longer in the basketing group. There were fragments present in 4/36 (11.1%) in the basketing group compared to 9/23 (39.1%) of the dusting group. The stone-free rate was 89.1% in the basketing group and 60.9% in the dusting group. Only one patient from each group became symptomatic. There was no difference in emergency room admission or hospitalization between groups (18.4% dusting vs. 12% basketing) or in re-intervention rates (one dusting, two basketing).

Conclusion(s): Our analysis shows that in patients undergoing ureteroscopy for renal stones between 5-20 mm that active extraction of all fragments with a basket produces a higher stone-free rate (89.9%) than dusting the stone (60.9%). However, there was no difference in readmission or reintervention rates and only one patient in each group became symptomatic from their residual fragments. Long-term followup of these patients will also determine the fate of these fragments and whether they become symptomatic and require treatment.

Status

CONFERENCE ABSTRACT

Institution

(Chew) Urologic Sciences, University of British Columbia, Vancouver, BC, Canada (Shah)

Urology, Columbia University, New York, NY, United States

(Sur) Urology, University of California San Diego, San Diego, CA, United States

(Knudsen) Urology, Ohio State University, Columbus, OH, United States

(Matlaga) Urology, Johns Hopkins, Baltimore, MD, United States

(Krambeck) Urology, Mayo Clinic, Rochester, MN, United States

(Miller) Urology, Vanderbilt, Nashville, TN, United States

(Monga) Urology, Cleveland Clinic Foundation, Cleveland, OH, United States

(Humphreys) Urology, Mayo Clinic, Phoenix, AZ, United States

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540.

Pulsed fluoroscopy safely reduces radiation exposure during ureteroscopy.

Liang L., Meng Y., Mironov O., Tsai K., Kukreja J., Dever D., Ghazi A.

Embase

Canadian Urological Association Journal. Conference: 68th Annual Meeting of the Northeastern Section of the American Urological Association. Buffalo, NY United States. 10(9-10 Supplement 4) (pp S183-S184), 2016. Date of Publication: September 2016.

[Conference Abstract]

AN: 617743481

Background: Fluoroscopy is a standard procedural component of endourology. Occupational radiation exposure increases the risk of carcinogenesis, cataract formation and harmful genetic effects in a dose-dependent manner. We evaluated the average radiation exposure and complication rate with continuous or pulsed fluoroscopy in ureteroscopy cases for urolithiasis.

Method(s): We retrospectively reviewed the operative details of 66 patients who underwent ureteroscopy for urolithiasis performed by two PGY-5 urology residents under the supervision of a single attending at an academic affiliate institution from June 1, 2014 to May 30, 2015. Residents A and B performed ureteroscopy using continuous fluoroscopy (30 frames per second) for 17 and 30 cases, respectively. Resident A then performed 19 consecutive cases using pulsed fluoroscopy (three frames per second). Fluoroscopy time (FT), stone size, stone location, number of procedural components (access sheath placement, stent placement, basketing, laserling, and ureteral dilation), and procedure-related complications were included in our analysis. Differences in FT between Resident A and B were compared using t-test. Correlations between FT and stone size, stone location and number of procedural components were assessed with Spearman rho test. Complication rates were compared using chi-square analysis.

Result(s): Prior to intervention, there was no difference between average FT per case between Resident A and Resident B ($p=0.993$). Following intervention, Resident A reduced average fluoroscopy exposure per case compared to pre-intervention ($45\pm33s$ to $24\pm20s$; $p=0.028$) and compared to Resident B ($p=0.04$). Resident B did not show a significant reduction in FT over the course of the study ($p=0.309$). FT was positively correlated with the number of procedural components ($p=0.0001$; Spearman coefficient 0.453) and more difficult stone position ($p=0.001$; Spearman coefficient 0.423). FT was not correlated with stone size or patient gender. There was no statistically significant difference in procedure complexity and complication rate between cases performed by Residents A and B post-intervention or between cases performed by Resident A pre- and post-intervention. The control and intervention groups had four and three complications,

respectively, including bleeding and ureteral injury. There was one instance of stent malposition into the ureter in each group.

Conclusion(s): Ureteroscopy cases using pulsed fluoroscopy had a 47% reduction in FT with a similar complication rate compared to cases using continuous fluoroscopy. Our results suggest that pulsed fluoroscopy may be safely used in place of continuous fluoroscopy to reduce occupational radiation exposure. (Table Presented).

Status

CONFERENCE ABSTRACT

Institution

(Liang, Meng, Tsai, Kukreja, Dever, Ghazi) University of Rochester Medical Center, Rochester, NY, United States (Mironov) University of Toronto, Toronto, ON, Canada

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541.

Robotic (Avicenna) flexible ureteroscopy in renal stones.

Geavlete P., Saglam R., Georgescu D., Multescu R., Iordache V., Kabakci A.S., Ene C., Geavlete B.

Embase

European Urology, Supplements. Conference: 16th Central European Meeting of the European Association of Urology. Vienna Austria. 15(11) (pp e1443), 2016. Date of Publication: December 2016.

[Conference Abstract]

AN: 615207079

INTRODUCTION & OBJECTIVES: Roboflex Avicenna represents a new device used in association with the flexible ureteroscope, capable to offer a more efficient lithotripsy for renal calculi. **MATERIAL & METHODS:** The study was prospective and included a number of 68 patients which underwent robotic flexible ureteroscopy (FURS) for renal calculi between and June 2015- February 2016. All the procedures were performed with a Storz SPIES type flexible ureteroscope in association with Avicenna Roboflex. Stone fragmentation was performed using a Dornier Medilas 20H, Holmium Laser of 20 watt power and 2.1µm wavelength.

RESULT(S): The mean age was 53 years (range 25-76 years) and the mean stone size was 2.3 cm (range 1.1-3.7 cm). The average operation time was 44 min (range 37-104 min), while the average dusting time was 34 min (range 26-85 min). Concerning the intraoperative complications, there was only one case of intraoperative bleeding during robotic FURS. The number of cases which required retreatment was significantly reduced for robotic FURS (only 8.8%). The stone free rate after 3 months was 91.2%, thus representing a clear performance of the robotic technique. In some cases there were noticed residual fragments smaller than 3 mm, in 10.2% of patients who underwent robotic FURS.

CONCLUSION(S): In conclusion, the robotic treatment of kidney stones represents already a viable method with confirmed outcomes.

Status

CONFERENCE ABSTRACT

Institution

(Geavlete, Iordache) Sanador Hospital, Dept. of Urology, Bucharest, Romania (Saglam)

Medicana International Hospital, Dept. of Urology, Ankara, Turkey

(Georgescu, Multescu, Ene, Geavlete) St. John Clinical Hospital of Emergency, Dept. of Urology, Bucharest, Romania

(Kabakci) Hacettepe University, Dept. of Bioengineering, Ankara, Turkey

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542.

Multicenter phase II study using the Avicenna Roboflex URS robot in robotic RIRS.

Klein J.-T., Saglam R., Kabakci A.S., Fiedler M., Rassweiler J.

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Uro-Technology, ESUT 2016. Athens Greece. 15(6) (pp 189), 2016. Date of Publication: July 2016.

[Conference Abstract]

AN: 615206960

INTRODUCTION & OBJECTIVES: Pre- and intraoperative data from all patients who underwent robotic retrograde intrarenal stone surgery (robRIRS) using the Avicenna Roboflex system (Elmed, Turkey) at the two European robotic stone centers located in Heilbronn (Germany) & Ankara (Turkey) was prospectively recorded and analyzed. **MATERIAL & METHODS:** In 2013&2014 the Roboflex system was successfully introduced in two European stone centers. All data of patients (n=266) who underwent robRIRS with the system was prospectively recorded and analyzed.

RESULT(S): General data: n=266 (female=90, male=176), age: 55a, min 25a, max 76a, BMI: 29,1; min 20,6, max 43,3; ASA: 2,3, UTI preop: 14%, Stone localisation: right: 118x, left 148x, Number of stones/kidney: 1,8 min:1, max 6; stone load: 1620 mm³, min 98, max 10600; prestenet: 43%. Intraop data: number of surgeons: 5, OR-time: 96min; min 58, max 193; access sheath used: 100%, Instrument: Digital flex scope incl. chip on the tip technology. Stone-treatment: Holmiumlaserdesintegration: 92%, fragment extraction using dormia basket: 42%, console time: 65 min, min 16, max 174, stone-clearance rate: 25 mm³/min, min: 9, max 101. postop: DJ 44%. Complications intra-op: 0,7% technical system failure. Stone migration: 20%. X-ray parameters: time 02:30min, 297 cGy*cm². Robottimes: Preparation&Set up time preop: 04:30 min, min 3, max 8, docking time 4min, min1, max 29, console time to stone contact: 4 min, min 1, max 12.

CONCLUSION(S): All technical surgical aspects of flexible URS (dusting & fragmentation of the stone, stone extraction with a stone basket aso) has been completely and successfully performed using the robot system. The robot provides a non exhausting environment for the surgeon especially in larger stone loads with a reduction of radiation exposure of the surgeon during the procedure. Stonetreatment using robRIRS can be safely performed. The set up of the system is not time-consuming. The clinical application of the system in an every day routine setting can be managed easily within a short learning curve.

Status

CONFERENCE ABSTRACT

Institution

(Klein, Fiedler, Rassweiler) SLK-Kliniken Heilbronn GmbH, Dept. of Urology, Heilbronn, Germany

(Saglam) Medicana International Hospital, Dept. of Urology, Ankara, Turkey

(Kabakci) Medical Systems, Ankara, Turkey

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543.

Prospective clinical results of kidney stone treatment using the Avicenna Roboflex URSsystem.

Charalampogiannis N., Gozen A., Fiedler M., Weiss H., Rieker P., Scheitlin W., Salzler N.,

Rassweiler J., Achinas S.

Embase

European Urology, Supplements. Conference: 5th Meeting of the EAU Section of Uro-

Technology, ESUT 2016. Athens Greece. 15(6) (pp 188), 2016. Date of Publication: July 2016.

[Conference Abstract]

AN: 615206957

INTRODUCTION & OBJECTIVES: To examine a novel Roboflex Avicenna system for performing robotic retrograde intrarenal surgery. MATERIAL & METHODS: From January 2015 until February 2016 a total of 103 Patients (64 men and 39 women) suffering from Nephrolithiasis underwent robotic retrograde intrarenal stone treatment (RobRIRS) in our Center using the Avicenna Roboflex robotic device. 10 Patients were excluded because of simultaneously semirigide Ureteroscopy and a Roboflex RIRS who underwent, or they had inadequate data. We

analyzed the preoperative and the operative data from the patients. Primary end points were based on data about successful fragmentation, second sessions, complications (based on Clavien-Dindo classification) and any malfunction of the robot related to the flexible ureteroscope. Secondary end points depended on the operative time, the robot docking time, the console time, the console time to locate the stone, the fragmentation time and the speed (cubic millimeters per min).

RESULT(S): 7 experienced surgeons from our Center operated 93 Patients with renal calculi. The mean stone burden was 14716 mm³ (range: 400-4100). The mean Hounsfield in CT Kidney was 731 (range: 276-1423). The mean age was 51,79 yr (range: 17-82 yr), the mean BMI 27,7 (range: 19,57-40,43) and the mean ASA score II (range: I-IV). The statistical analysis from the operative parameters showed that the mean operative time was 90,61 min. (range: 31-263), the mean robot docking time 4,48 min (range: 1-14), the mean console time 64,43 min (10-229) and mean console time to Stone contact was 5,6 min (30 sec-20 min). Mean fragmentation time was 22,66 min. (range: 4,5-90 min.) corresponding to a mean fragmentation speed 26,1 mm³ (range: 8-100). Mean remove fragments from the Kidney with basket 23,6 min (range: 1-125). In relation of the postoperative complications one Patient died due to severe sepsis. According to the Clavien classification system two Patients were presented complications Grade II and one complication Grade IIIA. Three Patients required secondary FURS, the one of them because of malfunction of the flexible digital ureteroscope and the other two because of larger residual fragments. At the remaining 90 cases (96,77%), complete stone fragmentation was accomplished. DJ stents were placed in 83 patients, 44 DJ-stents were removed in the first postoperative Day, 39 DJ-stents after 7-14 Days.

CONCLUSION(S): Roboflex Avicenna provides a suitable and a safe platform for robotic FURS. The new robotic device provides a non-exhausting environment for the surgeon especially during long FURS. Ongoing refinement is likely to spread out the role of this technology in retrograde intrarenal surgery in the near future.

Status

CONFERENCE ABSTRACT

Institution

(Charalampogiannis, Gozen, Fiedler, Weis, Rieker, Scheitlin, Salzler, Rassweiler) SLK Am Gesundbrunnen Heilbronn, Dept. of Urology, Heilbronn, Germany (Achinis) University of Groningen, Dept. of Mathematics and Natural Science, Groningen, Netherlands

Publisher

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Year of Publication

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544.

Emergency ureteroscopy in obstructed ureteric calculi-outcomes with backstop.

Biligere S., Heng C.T., Gauhar V.

Embase

BJU International. Conference: 25th Malaysian Urological Conference, MUC 2016. Kuala Lumpur Malaysia. 118(Supplement 4) (pp 14), 2016. Date of Publication: November 2016.

[Conference Abstract]

AN: 614674839

Introduction: Acute ureteric obstruction secondary to calculus disease is commonly managed by stenting or with nephrostomy in an acute setting. Semi rigid ureteroscopy (URS) is seldom considered as primary treatment as apart from difficulty in accessing stone due to oedema and the inadvertently injuring the ureter, the possibility of retropulsion is not uncommon resulting in ancillary procedures or staged surgeries. Here, we evaluate the outcomes of feasibility and use of BackStop in emergency ureteroscopy for treatment of obstructing proximal ureteric calculi and hence obviate the need to use a flexible URS. The BackStop gel is a water-soluble reverse thermosensitive polymer that forms a plug in the ureter which prevents stone migration without affecting the ureter.

Objective(s): To evaluate the use of BackStop gel and its feasibility in emergency Semi-rigid ureterorenoscopy in treating obstructing proximal ureteric calculi in a single institute.

Material(s) and Method(s): 15 renal units with proximal ureteric stone sizes varying from 8 mm to 1.5 cm causing acute ureteric obstruction and varying grades of hydroureteronephrosis (HUN) were diagnosed using a CT scan and subjected to URS under fluoroscopic guidance with a semi rigid scope and Holmium laser after application of the Backstop Gel via a 3Fr/ 5Fr ureteric catheter, 1-3 cm proximal to the site of impaction of stone. Intra-operative stone fragmentation was achieved with holmium laser and if required a zero tip Nitinol basket was used to completely remove all stones. The entire procedure for all cases was completed within 45 min.

Result(s): BackStop was deployed in all 15 renal units irrespective of the degree of stone impaction. 3 cases required initial dusting of the stone to get access beyond the stone and site of impaction. URS was performed in all cases and once stone was accessed, laser fragmentation was carried out after deployment of BackStop. In 7 of these cases with stone size greater than 1 cm the backstop gel was mixed with methylene blue to further enhance its visualisation. BackStop gel allowed for effective stone fragmentation and successfully prevented retropulsion. Average operative time was 50 min from intubation to completion. Average time to laser fragmentation after backstop deployment was 30 min. All 15 cases had successful stone clearance confirmed by 1 month post-op CT scan. No additional intervention was needed to attain stone free rate.

Conclusion(s): BackStop appears to be feasible, safe, easy to deploy and use even in acute ureteric obstruction and hence avoid an additional procedure for the patient. The fragmentation of stones should be completed within 45 min of deployment following which there will be partial dissolution of gel. Warm or room temperature saline may be preferably used for irrigation during the procedure as cold saline causes the gel to disintegrate. Methylene blue addition did not change the properties of the gel and actually helped in visualisation of gel column throughout the procedure. We believe that even in this era of Flexible URS, BackStop gel still has a role in those patients with acute proximal ureteric obstruction hence obviating the need for a second procedure with Flexible URS or Shock wave Lithotripsy.

Status

CONFERENCE ABSTRACT

Institution

(Biligere, Heng, Gauhar) Ng Teng Fong General Hospital, Jurong Health, Singapore, Singapore

Publisher

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Year of Publication

2016

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545.

Retrograde intra renal surgery (RIRS): Not all disposables are disposables!!!.

Joshi R.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A339), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613824386

Introduction & Objective: In last decade, RIRS has emphatically cemented its place in most if not all guidelines for management of medium sized renal calculi citing its excellent stone free rates with minimum morbidity. The biggest challenge against its widespread adoption remains the cost constraint pertaining to expensive disposables and its fragile shelf life. We hereby report our economic model to make it cost effective without any quality compromise.

Material(s) and Method(s): From October 2014 to March 2016, 328 candidates for RIRS at our institution were randomized into two groups: Group A-122 patients who underwent RIRS using disposable accessories and Group B-206 patients, who, after prior consent, underwent RIRS utilizing recycled accessories after appropriate sterilization. Both groups underwent procedure by a single surgeon using two different dedicated flexible endoscopes. The standard accessories reused included Tarumo guide wire, Ureteral Access Sheath, Nitinol Basket and Laser Fiber. The patients in both the groups were matched for demographics, stone characteristics and perioperative management protocol. Procedural performance, Surgical outcome and Endoscope wear and tear were the three primary end points assessed and compared.

Result(s): Overall success rate for satisfactory completion of procedure were comparable between both the groups. We found no statistically significant differences in operating times (84 v/s 92 minutes), stone free rates (89 v/s 87.5%), complication rates (14 v/s 18%) mean hospital duration (1.8 v/s 2.1 days). Endoscope wear and tear in terms of active deflection (265 v/s 260 degree), irrigation flow at 100 cm of H₂O (46 v/s 44.5 ml/min) (Table presented) and number of broken optical fibers (1 v/s 3dots) was equivalent. Overall cost of disposables per case was 976 \$ in group A and 239.71 \$ in group B.

Conclusion(s): Re-usage of manufacturer labeled disposable accessories after appropriate sterilization does not seem to adversely affect procedure performance, patient outcome and endoscope durability.

Status

CONFERENCE ABSTRACT

Institution

(Joshi) Aarna Superspeciality Hospital, India

Publisher

Mary Ann Liebert Inc.

Year of Publication

2016

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546.

Fluoroless ureteroscopy: A single center experience.

Elnagar M., Elsobky E.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A368), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613824374

Introduction & Objective: Ureteroscopy is a common urological procedure in daily practice. The radiation exposure during the procedure is inevitable. The objective was to report on the feasibility and safety of using the fluoroless ureteroscopy in the management of ureteral stones to minimize the future radiation exposure during the endoscopy procedure.

Material(s) and Method(s): A total of 132 consecutive retrograde ureteroscopic procedures by using semi-rigid ureteroscopes were carried out between years 2014 and 2015 in a prospective protocol. The study included two senior urologists who carried out the endoscopy procedures. The time of the procedure, stone locations, the size of the stone and auxiliary accessories (guide wire, ureteral balloon, and ureteral stent) were recorded and saved operation theater staff technicians. The success rate, minor, and major complications were reported. The time (in seconds) of fluoroscopy was recorded when used. The statistical analysis was performed by using SPSS software.

Result(s): The mean age of the patients was 37.4 +/- 8 years. The mean stone size was 9.5 +/- 3.7 mm. The stones were localized in the proximal, middle and lower ureter in 35, 18 and 35 patients respectively. The mean duration of the procedure was 25.7 +/- 7.4 minutes. The procedures were succeeded (complete extraction of the stone or the fragments) in 123 (93.18%) and failed in 9 (6.8%) patients. Five stones migrated to the kidney and three patients had tortuous ureter, and JJ stent was inserted under fluoroscopy (mean fluoroscopy times was 9.6 +/- 8 seconds). One the major complication was ureteral avulsion during forcible basket extraction of the stone at the pelvic part of the ureter and necessitated immediate laparotomy and ureteral reimplantation.

Conclusion(s): The use of flouroless ureteroscopy in the treatment of ureteral stones is feasible and safe in the majority of patients. In a limited number of cases, fluoroscopy was helpful. A prospective multicenter study is essential to verify or refute the current study results. In the future, modified guidelines of the flouroless ureteroscopy could be adopted to minimize the hazards of radiation exposure.

Status

CONFERENCE ABSTRACT

Institution

(Elnagar, Elsobky) Elnagar Urology Center, Egypt

Publisher

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Year of Publication

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547.

Dusting vs fragmentation for renal stones - Prospective study using different laser settings in one system platform.

Grunberger I., Colon I., Zoltan E., Yanke B.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A337-A338), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613824332

Introduction & Objective: Stone fragmentation and retrieval are established approaches to treat renal stones. The introduction of the newer stone dusting technique utilizing very high repetition rates presented the potential for more efficient and safer modality. The outcomes and efficiency of the different treatments for renal stones were tested in a prospective randomized study in which patients were divided into two groups utilizing different laser settings.

Material(s) and Method(s): A randomized prospective study was designed to compare the treatment process and outcomes of renal fragmentation vs. dusting technique in 20 patients. With an approval from an institutional, review board, patients with 8-20mm renal calculi were recruited. All subjects were candidates for flexible ureteroscopy and did not require concomitant procedures during the treatment session. All patients were treated with the same laser system (Lumenis Pulse™ 120H Holmium Laser) together with its compatible ball-tip fiber (SlimLine™ 200 D/F/L). Patients were randomized into two groups: stone fragmentation (Group 1) using high energy and low repetition rates (max. 30Hz), and stone dusting (Group 2) treated with low energy and high repetition rate (70-80 Hz). Evaluation of complication and stone free rates was performed at discharge and on a one month follow up. Surgeons rated the procedure utilization parameters, including the need for retrieval devices and duration of procedure.

Result(s): To date, a limited number of patients have completed treatments thus precluding a comprehensive statistical analysis. However, all procedures to date were completed without any significant complications or bleeding. The flexible ureteroscope deflected well with the laser fibers and high visibility scores were recorded in both groups. Lithotripsy was performed well in Group 1 and easily performed in Group 2 (75%). Catheterization and stenting rates revealed a trend towards reduced usage in Group 2.

Conclusion(s): In patients eligible for FURS both fragmentation and dusting techniques may be considered as the treatment of choice. High power holmium lithotripsy may be utilized to support both techniques to offer efficient treatment. Our preliminary analysis reveals the new dusting technique to be safe and may present advantages to the performing surgeon and patient outcomes.

Status

CONFERENCE ABSTRACT

Institution

(Grunberger, Colon, Zoltan, Yanke) New York Methodist Hospital, United States

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548.

Ex vivo ureteroscopy in deceased donor transplant kidneys.

Machen G.L., Milburn P., El Tayeb M.M.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A367), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613824323

Introduction & Objective: When encountered, the ideal management of urolithiasis in allograft kidneys is not clearly defined. Historically, stones in the donor kidney have been considered a relative contraindication to donation. In live donors, specific criteria exist to determine if an individual with a history of nephrolithiasis may be considered a suitable candidate for donor nephrectomy. In cadaveric allografts, the ideal management is less clear. At our institution, 4 renal units (RU) containing stones were successfully transplanted after performing ex-vivo ureteroscopy, including 1 while the allograft remained on pump. We attempt to briefly describe our experience here.

Material(s) and Method(s): After IRB approval, A retrospective chart review was done to identify patients who had undergone ex-vivo ureteroscopy on the back table prior to deceased donor renal transplantation. Ultimately, 4 patients who had received RUs from 2 cadaveric donors were found. In each case, bilateral nephrolithiasis was diagnosed pre-transplant via CT scan. In 1 recipient, the donor kidney was left on pump; the 3 other kidneys were taken off-pump and placed

in an ice bath. The ureter was spatulated and flexible ureteroscope inserted. Laser lithotripsy was utilized to fragment the stones; these fragments were then removed using a basket extraction device. Each RU was endoscopically stone free before transplant.

Result(s): There were no ureteroscopy related complications in the transplant recipients. At a mean follow up of 10 months (range 5-16), all patients were free of de novo stone recurrence. Creatinine nadir for each individual ranged from 0.80-1.41. A metabolic urine evaluation was performed several months post operatively in 3 of the transplant recipients, and was notable for hypocitraturia in two patients, and hypercalciuria in the third.

Conclusion(s): As previously mentioned, the presence of stones in donor kidneys was traditionally felt to be a relative contraindication to transplantation. However, due to a shortage of organs many centers are reconsidering this criterion in both living and deceased donor kidneys. While continued long term follow up is necessary, based on our series ex vivo ureteroscopy seems to be a safe option in deceased donor kidneys, both on and off pump, to remove stones prior to transplantation.

Status

CONFERENCE ABSTRACT

Institution

(Machen, Milburn, El Tayeb) Texas AandM College of Medicine, Baylor Scott and White, United States

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549.

Laser, ultrasound or pneumatic? Which one will make you chase the stone during ureteroscopy?.

Dragos L.B., Daminescu L., Martis S., Proietti S., Buttice S., Villa L., Pupca G., Minciu R., Boiborean P., Botoca M.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A336-A337), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613824292

(Figure presented) Introduction & Objective: Lithotripsy during ureteroscopy can be performed with different energy sources, with different characteristics. The goal of our study was to compare the stone retropulsion in a bench model using laser, ultrasound and pneumatic devices.

Material(s) and Method(s): We used a Storz Calculase II SCB with 230 and 600 lm laser fibers, a Storz Calcuson with an 1.5mm diameter ultrasonic lithotripsy probe, an EMS Swiss Lithoclast Master with an 1mm diameter pneumatic probe and a 8/9,5 Fr Storz semirigid ureteroscope. After placing a stone into an irrigation tube filled with saline, we introduced the ureteroscope into the tube, we activated each lithotripsy device for 5 seconds and we measured the length of the stone retropulsion. We used 0,5 Joules and 10 Hertz, respectively 1,2 Joules and 6 Hertz laser settings for each fibre size. For the pneumatic lithotripsy we applied 2 Hertz and 40% energy settings. We repeated each measurement five times and then we calculated the median.

Result(s): The highest retropulsion effect was observed during pneumatic lithotripsy and the lowest when the 230 lm laser fiber was used with "dusting" settings. Ultrasonic probe had a lower retropulsion effect then the 600 lm laser fiber and even then the 230 lm laser fiber when "fragmentation" setting was used. The chart presents the median length of the stone retropulsion obtained with different devices.

Conclusion(s): When approaching ureteral stones with a high potential of retrograde migration, it might be better to use laser (especially small fiber size and "dusting" technique) or ultrasound devices instead of pneumatic lithotriptors.

Status

CONFERENCE ABSTRACT

Institution

(Dragos, Daminescu, Martis, Proietti, Buttice, Villa, Pupca, Minciu, Boiborean, Botoca)

Emergency County Hospital Pius Branzau Timisoara, Romania

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550.

Retrograde IntraRenal surgery in transplanted kidney.

Jo J., Park S., Park H., Kim Y., Choi J., Seo J.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A403-A404), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613824114

Introduction & Objective: Female 47 years old patients who underwent kidney transplantation was visited due to hematuria. We performed CT scan and found stone in renal pelvis of transplanted kidney.

Material(s) and Method(s): We performed retrograde intrarenal surgery to remove of stone using flexible ureteroscope. We identified neo-ureteral orifice using indigocarmine. During operation, we fragmented stone using laser and extracted stone using stone basket. After checking no remnant stone, we indwelled ureteral stent.

Result(s): Total operation time was 150 minutes and EBL was trace. On follow-up CT scan, there was no remnant stone

Conclusion(s): We performed RIRS for removal stone in renal pelvis of transplanted kidney. It was successful removal of stone using flexible ureteroscope instead of percutaneous nephrostomy.

Status

CONFERENCE ABSTRACT

Institution

(Jo, Park, Park, Kim, Choi, Seo) Hanyang University Hospital, South Korea

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551.

Ex-vivo ureteroscopy for renal stone removal in a living donor: A video presentation.

Yang P., Abourbih S., Wai P., De Vera M., Kelly I., Keheila M., Baldwin D.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A403), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613824093

Introduction & Objective: In the United States, over 120,000 patients are waiting to receive a kidney transplant and more than 6500 die every year prior to receiving one. Many centers will allow patients with a single prior stone episode to donate a kidney. Donors who present with stones may undergo surgery prior to donation to remove the stone or the kidney may be transplanted with the stone in place. This video will demonstrate an ex-vivo removal of a 4mm stone from a donated kidney.

Material(s) and Method(s): During evaluation of a 52-year-old donor a 4mm lower pole stone was identified in the left kidney. The patient's 24 hour urine evaluation revealed no significant metabolic abnormality with an isolated low urine volume of 1.07 liters. A nuclear renogram demonstrated left kidney function of 48% and a decision was made to remove the left kidney. The kidney was removed using a hand-assisted laparoscopic technique and placed in iced saline and perfused with University of Wisconsin solution. In preparation for ureteroscopy, two 5-0 PDS sutures were placed into the ureter to assist in manipulation. A 0.038 inch angle-tipped hydrophilic wire was passed into the kidney under direct external vision. Using a 6 French endhole catheter, the hydrophilic wire was converted to a 0.038 inch standard PTFE coated guidewire. A flexible ureteroscope was advanced into the renal pelvis under direct external

visualization. Renal mapping was performed and the solitary 4mm stone in the lower pole was basketed and removed intact.

Result(s): This video describes the successful use of ex-vivo ureteroscopy in a living donor to remove a lower pole stone. The total operative time during ureteroscopy was 14 minutes.

Chemical analysis of the removed stone demonstrated 100% calcium oxalate monohydrate and the donor was advised to dramatically increase his fluid intake to decrease his risk of future stone formation. The donor and recipient were both discharged on post-operative day 3 with no complications. The recipient's nadir creatinine was 1.0mg/dl and is doing well 10months later with no complications.

Conclusion(s): In this donor with a single 4mm lower pole renal stone, the use of flexible ex-vivo ureteroscopy allowed his recipient to receive the lifesaving organ transplant without risk for stone passage or obstruction. This technique is easily performed and may reduce the risk from additional surgeries preoperatively for the donor and avoid the risk of leaving the stone in situ for the recipient. This technique should be considered in any donor presenting with a solitary stone.

Status

CONFERENCE ABSTRACT

Institution

(Yang, Abourbih, Wai, De Vera, Kelly, Keheila, Baldwin) Loma Linda University Health,
Department of Urology, United States

Publisher

Mary Ann Liebert Inc.

Year of Publication

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552.

Retrograde intra renal surgery by a modified ergonomic position in calculi 1.5 cm and above: A prospective outcome analysis in Asian ureter in a single institution.

Goh R., Biligere S., Heng C., Gauhar V.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A317), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613824085

Introduction & Objective: RIRS is now an accepted form of minimally invasive approach for renal calculus management. Larger stones are a challenge to the surgeon, especially with prolonged operative time while standing causing fatigue, which is an important limiting factor for effective surgery. To overcome this drawback, we used a modified ergonomic lithotripsy (MEL) position to assess stone free outcomes.

Material(s) and Method(s): Once the access sheath was placed all patients were positioned in an inclined lithotomy with head up 35 degrees position while surgeon sits down throughout. At end of procedure, all patients were given induced diuresis to aid gravity clearance of fragments. Single institute, prospective study, between July 2015-May 2016. Inclusion criteria: Calculi >1.5cm (Figure presented) (Table presented) Multiple calculi - each calculus at least 1 cm in size Calculi in complex anatomy Stone free rate (SFR) defined as residual fragments less than 3mm was determined by CT scan 1 month/3 months after surgery Results: Average age was 53 (range 21-74) Mean operative time 90.8 min with mean laser time 53.6 min. Access was successful in all 39 cases 26/38 cases had clearance in 1 stage SFR of 0.9 and low morbidity rate of 0.05 was demonstrated in our study.

Conclusion(s): All patients were successfully operated upon with the MEL technique. Dusting was our preferred method albeit requiring relatively longer operating times with a low power laser. With the surgeon sitting, minimal fatigue with equally good maneuverability and intra-op vision as when standing allowed a longer laser time. No difference in access or the use of additional instruments was noted. There was no loss of scope functionality by virtue of handling the scope in sitting position. Inclining the patient with addition of diuretic 20 min before completion of surgery enabled a effective gravity assisted wash out of fragments RIRS is an even more attractive option in management of cases of large stone loads or complex anatomy with this modification, with possible prospects of external validation to certify its reproducibility.

Status

CONFERENCE ABSTRACT

Institution

(Goh, Biligere, Heng, Gauhar) Ng Teng Fong General Hospital, Singapore

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553.

Robotic flexible ureteroscopy in renal stones.

Geavlete B., Saglam R., Georgescu D., Multescu R., Iordache V., Kabakci A., Ene C., Geavlete P.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A335), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613824040

Introduction & Objective: Roboflex Avicenna represents a new device used in association with the flexible ureteroscope, capable to offer a more efficient lithotripsy for renal calculi.

Material(s) and Method(s): The study was prospective and included a number of 68 patients which underwent robotic flexible ureteroscopy (FURS) for renal calculi between and June 2015-February 2016. All the procedures were performed with a Storz SPIES type flexible ureteroscope in association with Avicenna Roboflex. Stone fragmentation was performed using a Dornier Medilas 20H, Holmium Laser of 20 watt power and 2.1µm wavelength.

Result(s): The mean age was 53 years (range 25-76 years) and the mean stone size was 2.3 cm (range 1.1-3.7 cm). The average operatory time was 44 min (range 37-104 min), while the average dusting time was 34 min (range 26-85 min). Concerning the intraoperative complications, there was only one case of intraoperative bleeding during robotic FURS. The number of cases which required retreatment was significantly reduced for robotic FURS (only 8.8%). The stone free rate after 3 months was 91.2%, thus representing a clear performance of the robotic

technique. In some cases there were noticed residual fragments smaller than 3 mm, in 10.2% of patients who underwent robotic FURS.

Conclusion(s): In conclusion, the robotic treatment of kidney stones represents already a viable method with confirmed outcomes.

Status

CONFERENCE ABSTRACT

Institution

(Geavlete, Saglam, Georgescu, Multescu, Iordache, Kabakci, Ene, Geavlete) Saint John Emergency Clinical Hospital, Carol Davila University of Medicine and Pharmacy, Romania

Publisher

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554.

Prospective evaluation of stone free rates by CT after aggressive ureteroscopy.

Lay A., Canvasser N., Kolitz E., Antonelli J.A., Pearle M.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A315), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613823998

Introduction & Objective: Renal ultrasound and KUB x-ray are currently the recommended imaging modalities for follow-up after ureteroscopic stone treatment (URS). Previous retrospective and prospective studies have shown surprisingly low stone free rates (SFRs) using CT criteria, although the aggressiveness of fragment extraction was not always quantified. Our

goal was to determine SFR by CT after URS and aggressive fragment retrieval and quantify the number of ureteroscopy passes to remove stones to determine if aggressive fragment extraction could result in improved SFRs.

Material(s) and Method(s): We prospectively evaluated patients undergoing URS at our institution between 12/2015 and 5/2016. Basket extraction technique was employed in all cases and every attempt was made to extract all stone fragments, regardless of size after fragmentation. Patient demographics, stone number, stone size, stone location, and the number of passes of the ureteroscopy to extract fragments were recorded. SFR was determined using non-contrast CT scan approximately 8 weeks after the procedure. Size of residual fragments (RF) was recorded. SFR was analyzed by stone size, stone number, and ureteroscopy passes using the student's T-test, while SFR by location was compared using the chi-squared test. Statistical significance was set at $p < 0.05$.

Result(s): We prospectively evaluated 37 patients with 49 renal units treated by URS for stone disease. Patient demographics and stone characteristics are shown in Table 1. The overall SFR by CT was 59.2%. Mean size of RF was 2.6mm (range 1-8mm). Mean (Table presented) number of ureteroscopy passes to extract fragments was 44 (range 1-164). When stratified by stone location, SFR was lower for renal compared with ureteral stones [55.2% for renal stones ($n = 29$) and 100.0% for ureteral stones ($n = 8$), respectively, ($p = 0.027$)]. The mean number of treated stones was significantly lower in SF cases compared to non-SF cases (2.45 vs. 5.5, $p = 0.0004$). There were no significant differences in initial stone size or number of ureteroscopy passes in SF compared to non-SF renal units.

Conclusion(s): SFRs by CT after URS are disappointing low for renal calculi despite aggressive manual fragment extraction averaging 44 passes of the ureteroscopy. Long term follow-up is necessary to determine the clinical significance of residual fragments. Further work is also needed to establish the optimal method to treat calculi with URS.

Status

CONFERENCE ABSTRACT

Institution

(Lay, Canvasser, Kolitz, Antonelli, Pearle) Department of Urology, University of Texas Southwestern, United States

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555.

Latest evolution of the avicenna roboflex in robotic assisted retrograde intra-renal surgery (RA-RIRS) for renal stones and urothelial cancer.

Patel A., Tokatli Z., Sarica K., Bedir S., Kabakci A., Imamoglu A., Ayyildiz A., Saglam R.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A434), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613823971

Introduction & Objective: Saglam et al., developed the first robotic manipulator which can remotely control all functions of commercially available flexible endoscopes. Advantages of this new robotic master slave device for the treatment of kidney stones include improved precision with enhancement of stone fragmentation and dusting, while reducing operator fatigue and radiation exposure, and prolonging endoscope longevity through torque elimination.

Method(s): The surgeon inserts a suitable ureteral access sheath, and the technician moves the Roboflex manipulator to the docking position. The fURS is introduced into the ureteral lumen through the access sheath manually, the instrument hand piece is coupled and locked into the special adaptor of the robotic arm. The right joystick enables precise deflection with a new integrated thumb-wheel. The precision of the deflection mechanism is very important. The Avicenna Roboflex allows the surgeon to control the endoscope tip by choosing the scaling precision of the thumb wheel. The left joystick stick enables rotation and in-and-out movements of the fURS. By using precise left and right control joysticks, the fURS is advanced into the kidney. The laser fiber actuator holding the laser fiber is inserted into the working channel of the fURS. Once the fire button is pressed, the tip of the laser fiber is automatically advanced to the nearest firing position. Further advancement of fiber can be performed by the operator using the in-out controls. The foot pedals of laser and fluoroscopy devices are remotely controlled with the new universal remote pedal control unit.

Result(s): According to Ideal criteria and users' evaluation, the new design improved on previous design.

Conclusion(s): The incremental improvements incorporated into the Avicenna Roboflex console described above, allow better operator control of key aspects of the procedure releasing expensive staff resources (cost savings), while improving both safety and efficacy for our patients. Together with elimination of radiation safety protocols and better comfort for the operator when treating large renal stones, efficiency can be improved especially when multiple such procedures are planned in a days operating.

Status

CONFERENCE ABSTRACT

Institution

(Patel, Tokatli, Sarica, Bedir, Kabakci, Imamoglu, Ayyildiz, Saglam) Spire Roding, United Kingdom

Publisher

Mary Ann Liebert Inc.

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2016

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556.

"Optical dilation" of the ureter for reliable and safe access to the upper urinary tract.

Thum D., Afshar A., Patel D., Houman J., Hannemann A., Fuchs G.J.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A357), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613823958

Introduction & Objective: Retrograde upper tract endoscopy is an important tool for treatment and diagnosis of a variety of conditions. However, access to ureteral and renal pathology can still be cumbersome and significant risk of ureteral damage from access is reported at approximately 1-3 percent. The purpose of this study was to demonstrate the utility of "optical dilation" (OD) as a safe and cost effective way to visually dilate the ureter with minimal risk of damage.

Material(s) and Method(s): Interval stone cases from 2012-2014 cases where OD was utilized were retrospectively evaluated. Intraoperative and post-operative data were evaluated including ability to achieve access sufficient for treatment, events of ureteral damage and occurrence of post-operative stricture. The technique is as follows: 1) Cystoscopy and retrograde pyelogram are performed to assess anatomy 2) Safety wire is placed into the kidney 3) Using a 9.5 semirigid ureteroscope backloaded with a Bentson guidewire, the ureteral orifice is identified and cannulated with the 2nd guidewire. 4) The two wires are manipulated into the 6 o'clock (working wire thru the scope) and 12 o'clock positions (safety wire) 5) The scope is advanced, moving along between the two wires, thus minimizing direct contact with the ureter. 6) If the ureteroscope does not advance easily, a stent is placed to allow for passive dilation and return procedure at a later date (usually within 14 days) Based on our results we did a cost comparison using the OD technique in contrast to a common technique of using a dual lumen ureteral catheter to access the upper tracts.

Result(s): Amongst 156 consecutive cases for ureteral and renal stones for which optical dilation was utilized no ureteral injuries occurred during OD. One minor ureteral injury was observed while basketing an impacted ureteral stone, which healed without stricture. In a theoretical cost benefit analysis of 1,000 cases, utilization of optical dilation versus a dual lumen to gain upper tract access saved an estimated \$30,000.

Conclusion(s): "Optical dilation" provides a safe and effective means to access the upper tracts for diagnostic and therapeutic interventions. It also has the potential to be a more cost effective method and lead to significant savings in operative expenditures. (Table presented).

Status

CONFERENCE ABSTRACT

Institution

(Thum, Afshar, Patel, Houman, Hannemann, Fuchs) USC Keck School of Medicine, Department of Urology, United States

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557.

Initial experience of using high power holmium laser for Dusting of large bulk renal stones by RIRS.

Sabnis R., Ganpule A., Desai M.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A333), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613823946

Introduction & Objective: RIRS (Retrograde Intrarenal surgery) has become an accepted treatment modality for treating small renal stones, with Low wattage (20-30 W) holmium laser being used as the energy source. However for large stones it has disadvantages of prolonged operation time, requirement of multiple stages, decreased clearance rate and increased chances of infection. We present our experience of RIRS for large burden renal stones using high power laser as energy source.

Material(s) and Method(s): A total of 15 patients with renal stone bulk >2 cm underwent flexible ureteroscopic holmium laser lithotripsy using high power laser (P120H, Lumenis TM, Israel). While dusting the stone energy used, varied from 0.3 to 1J and frequency varied from 35 to 80Hz. A 200 microns ball tip fiber was used (200D/F/L, Lumenis TM). Either an Olympus TMP6 or a Storz Flex X2 ureteroscope was used, with access sheath being utilized in all the cases. A double J stent was used post operatively in all the cases. The end points in the study were total lasing and procedure time, use of accessories for stone clearance, need of auxiliary procedures and stone clearance at 1 month follow up.

Result(s): The mean age of patients was 49.2 +/- 11.7 years. The average number of stones in each renal unit was 1.53 +/- 0.7, with mean stone size being 29.46 +/- 7.3mm and stone density being 1232 +/- 400 HU. One patient had staghorn with secondary calculi, 10 had stones in pelvis with calyceal extension, whereas 4 patients had multiple calyceal calculi. Renal access time was

4.53 +/- 3.6 minutes. The average lasing time and total operative time was 21 +/- 14 minutes and 39.3 +/- 12 minutes respectively. Accessories were not needed in any of the procedures. At the end of one month, stone clearance was achieved in 11 (73.3%) patients after a single treatment. Of the remaining 4 patients, 3 required PCNL and 1 required 2 nd stage RIRS. Two patients had fever (clavien Grade I) and one patient had urinary tract infection (clavien Grade II) as complications.

Conclusion(s): High power laser energy with dusting protocol is effective in clearing large bulk renal stones in short time.

Status

CONFERENCE ABSTRACT

Institution

(Sabnis, Ganpule, Desai) Muljibhai Patel Urological Hospital, India

Publisher

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558.

Clinical experience of ureteroscopic lithotripsy with swiss lithoclast.

Hong Y., Park D., Choi K., Park K.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A312), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613823853

Introduction & Objective: We reviewed our ureteroscopic lithotripsy using pneumatic lithoclast (ULPL) performed for 14 years for the treatment of ureteral calculi to figure out factors affecting success.

Material(s) and Method(s): We reviewed 911 ureteric units of ULPL performed in 857 patients (13 to 81 years old) from 2000 to 2013 in a single hospital. We used 9.5 Fr or 10 Fr semi-rigid ureteroscopes and Swiss Lithoclasts. Success was defined as being free of residual stones larger than 3mm and stone-related symptoms. We also addressed tips to overcome difficulty cases including upper ureter stone in male patients and large sized impacted stones.

Result(s): The overall success rate determined after 2 to 4 weeks of operation was 92.9%. The success rates were different according to the location of stone. The success rate of upper ureter stone was significantly lower than those of middle to lower ureter stones. The success rate of stones larger than 10mm in diameter was lower than stones smaller than 10 mm. Hydronephrosis was another independent factor that affects success. The most common cause of failure was upward migration, followed by intraoperative complication of ureteral perforation (Tables 1, 2). Lessons learned from failure were, (1) ureteral dilation may be applied depending on individual ureteral anatomy, but in most cases it is not necessary, (2) a hydrophilic guide wire is very helpful to reach the ureteral calculi without pushing upward, (3) two guide wire system (one within the ureter, the other within the ureteroscope) is helpful to advance URS by spacing the ureteral lumen, (4) stone basket is useful to hold the stones during lithotripsy with lithoclast especially in hydronephrosis, (5) irrigation flow rate should be in control during the entire operation process to secure visual field and to hold the stone in place as it was, (6) double pig-tail stent is recommended in most cases except in cases of minimal manipulation.

Conclusion(s): Pneumatic lithotripsy with Swiss Lithoclast is an effective and safe treatment modality for ureter stones. Its efficacy is reduced in case of large sized upper ureter stones with marked hydronephrosis because of higher chance of stone fragment migration during lithotripsy. (Table presented).

Status

CONFERENCE ABSTRACT

Institution

(Hong, Park, Choi, Park) Cha University, School of Medicine, South Korea

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559.

Retroperitoneoscopic ureterolithotomy with simultaneous flexible ureteroscopic renal stone removal.

Chen I., Lin J., Tsai J., Yu C., Wu T.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A414), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613823827

Introduction & Objective: Ureteroscope-assisted double-J stenting following laparoscopic ureterolithotomy is a simple and safe method allowing fluoroless stent placement and prompt management of residual stone fragments. In order to remove ipsilateral renal calculi, we have developed a modified positioning technique to simultaneously perform retroperitoneoscopic ureterolithotomy and flexible ureteroscopic renal stone removal.

Material(s) and Method(s): We present a video demonstrating our technique. The patient was placed in the modified decubitus and lithotomy position, and retroperitoneoscopic ureterolithotomy was conducted by the conventional three-port procedure. After removing the large proximal ureteral stone, simultaneous flexible ureteroscopy was performed to retrieve ipsilateral renal stones using a stone basket and place the double-J stent. Additionally, when severe periureteral adhesions were encountered, it could help locating the ureteral calculus to shorten the operation time.

Result(s): Between March 2015 and June 2016, we had performed retroperitoneoscopic ureterolithotomy and simultaneous ureteroscopy for 15 consecutive patients with large proximal or mid ureteral stones. Five of them had ipsilateral pelvicalyceal calculi and flexible ureteroscopic renal stone removal was done. The median patient age was 57 years old and body mass index was 28 kgw/m². The median stone size was 3.4 cm; the median operative time was 160minutes. The median estimated blood loss was 20ml and postoperative hospital stay was 3 days. All procedures were uneventful without intraoperative or perioperative complications.

Conclusion(s): This modified approach will enhance the stonefree rate of the upper urinary tract, and facilitate the stenting procedure during laparoscopic ureterolithotomy.

Status

CONFERENCE ABSTRACT

Institution

(Chen, Lin, Tsai, Yu, Wu) Kaohsiung Veterans General Hospital, Taiwan (Republic of China)

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560.

Modified ergonomic lithotripsy : AA novel way forward for flexible ureterorenoscopic surgery.

Gauhar V., Biligere S., Goh R., Heng C.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A431), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613823812

Introduction & Objective: To describe and assess if FURS is possible by modified ergonomic lithotripsy (MEL) to enable the endourologist with a primary aim to maximise stone free rates (SFR). Retrograde intra renal surgery (RIRS) is rapidly gaining momentum worldwide. We modified the lithotomy position with definitive manoeuvres intra-op allowing the surgeon to be seated during RIRS thereby limiting fatigue with an aim to achieve good SFR in different subsets of patients.

Material(s) and Method(s): 75 patients underwent RIRS between July 2015 to June 2016. Patients were put in lithotomy position and after a diagnostic retrograde pyelogram and semi rigid ureteroscopy in all men a 11-13 fr, Boston 42cm access sheath and women 11- 13 fr, 36cm was used. Olympus URf-V or V2 was the scope of choice. Fragmentation by Dornier 40 watt low power laser. The table was given a head up incline at 35 degrees, respiratory rate controlled at 7-8 breaths per minute. 20 minutes prior to completion of procedure 10mg furosemide was given to induce diuresis. Surgeons stool was raised such that his hands were at the level of access sheath while sitting to relax shoulders and allow normal manoeuvring without stress on flexible scope, as done while standing.

Result(s): RIRS was successfully completed in all 75 cases. No difficulty in access to all calyces even with complex anatomy, performing all manoeuvre's including lithotripsy or use of ancillary equipment and reproducibly done by different surgeons at our institute. Salient observation was minimal fatigue especially for large calculi. Excellent visibility maintained throughout unless inadvertent bleeding encountered. In the inclined position drainage was found to be superior as all dust quickly washed out without much need for manual pumping or syringing to clear fragments limiting need to slow down lithotripsy as well as minimising any intra renal reflux. There was no additional morbidity intra-op or post op. Controlled breathing helped limit respiratory excursion thereby ensuring complete calyceal access

Conclusion(s): Modified Ergonomic Lithotripsy (MEL) is a feasible, easily reproducible way forward to treat renal stones with no added morbidity to existing FURS but decreased surgeon fatigue and ease of surgery actually helps hasten the procedure to achieve good SFR. More cases and possible external validation will add strength in adopting this procedure.

Status

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561.

A complex RIRS: First chapter.

Bevilacqua L., Puliatti S., Bocchialini T., Micali S., Bianchi G.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A430-A431), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613823759

Introduction & Objective: RIRS (retrograde intrarenal surgery) is a surgical technique for treatment of renal stones between 1 to 2 centimeters. In some cases can be used to treat larger renal stones when PCNL is contraindicated. Here a therapeutic strategy in case of complex renal calculi.

Material(s) and Method(s): Caucasian woman of 35 years old affected by cystinuria, with bilateral massive renal stones and an history of many open and transcutaneous surgical procedures. CT scan in April 2015 shows bilateral massive renal stones of 2.5 cm diameter at the right side and 2.8 cm diameter at the left side. Renal scintigraphy shows 60% functionality for the right kidney and 40% for the left kidney. In our center the patient was treated with three times RIRS (July and October 2015 and January 2016) and ESWL in march 2016.

Result(s): Our approach with three times RIRS for the right lithiasis, followed by ESWL, was successful. In fact we've got a remarkable volume reduction of stones. Surgical times were respectively 180, 120 and 90 minutes using FLEX-X 2 and 200 micron Holmium laser fiber in dusting modality. During the first look it was very hard to approach the lower calyx containing the big stone, because of the dysmorphic pelvis and a narrow Pyeloureteral junction. After the first treatment the lithiasis results decreased of 50% but the ureteral stent was not placed in the lower calyx. After the following two RIRS treatment we obtained a progressive reduction of residual right stones and ureteral stent was placed in the lower calyx.

Conclusion(s): For us this approach in subverted anatomic conditions may represent a valid alternative for the treatment of massive renal stones when PCNL is contraindicated.

Status

CONFERENCE ABSTRACT

Institution

(Bevilacqua, Puliatti, Bocchialini, Micali, Bianchi) University of Modena and Reggio Emilia, Italy

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562.

Is there any rationale of preferring ultraminiperc (MIP S) over miniperc(MIP M)?Prospective randomized study.

Sabnis R., Ganpule A., Desai M.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A376-A377), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613823747

Introduction & Objective: It is well known fact that tract size is directly proportional to the complications of PNL. Hence several new methods (miniperc, ultraminiperc, microperc) are introduced having smaller tract size which are grouped as minimally invasive PNL (MIP). Schilling at al suggested uniform nomenclature to avoid use of often confusing & overlapping terminologies. Now a days MIP M (miniperc) is widely used for treating small renal stones however MIP S (ultraminiperc) is also becoming popular. In this study we tried compare these 2 methods with respect to procedure time, Hemoglobin drop, Analgesics requirement, clearance rate & complications.

Material(s) and Method(s): 60 patients with stone size <1.5 cms were enrolled in the study & randomized in Group A (MIP-M) & Group B (MIP-S). PNL was performed in standard fashion. In Group A Karl Storz second generation modular MIP system was used having sheath size 15/16 with 12 F telescope. In Group B Karl Storz second generation modular MIP system having sheath size 11/12 with telescope 7.5 F was used. Stone fragmentation was done with laser fiber 230 micron. Energy varied from 0.5 to 1.5 Jules & frequency from 10 to 15 Hz. In none of cases

baskets, forceps were used. In all cases, irrigation was under gravity of 60 cm water column. Visibility was assessed by Likert scale by surgeon. Flushing from ureteric catheter was done to enhance washing out of fragments by the side of telescope. Insertion of Nephrostomy or JJ stent was left to surgeon's discretion.

Result(s): Demographic pattern of stone, Age, Male:Female ratio were similar in both groups., Total operation time in Gr. A & Gr B was 30.2 mins & 35.9, Fragmentation time was 20.4 & 25.6 mins respectively both statistically significant. Hb drop in Gr A was 1.1 & Gr. B was 0.45 gm% which was statistically significant clinically not relevant. There was no statistical difference in Surgeon's Likert score on intra-op vision, hospital stay, Visual analogue score for pain. & analgesic requirement. In Gr A one patient required 2 punctures. 29 (96.7%) patients had complete clearance 1 patients required RIRS for complete clearance. In Gr.B all were cleared in 1 stage. Gr B one patient developed chest pain on next day while being discharged & hence was transferred to Cardiology dept. (Clavian Gr IV). One patient developed sepsis requiring change of antibiotics. (Clavian Gr II). In Gr A none had any complication.

Conclusion(s): Miniperc is safe & effective than ultraminiperc to treat small renal calculi.

Status

CONFERENCE ABSTRACT

Institution

(Sabnis, Ganpule, Desai) Muljibhai Patel Urological Hospital, India

Publisher

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563.

Routine stenting is not necessary after uncomplicated ureterorenoscopy.

Keskin M.S., Simsek V., Ob Argun M.D., Tufek I., Kural A.R.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A307), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613823655

Introduction & Objective: Routine placement of a JJ stent may not be necessary for uncomplicated ureteroscopic treatment of ureter stones. We retrospectively analyzed our patients with a history of ureteroscopic treatment for ureteral stone, in whom the JJ stent was placed or not placed.

Material(s) and Method(s): We analyzed the results of 155 patients who were operated for middle or lower ureteral stone with a rigid ureteroscope between januray 2015 and april 2016. A 8F of 9.5F semirigid ureteroscope were used in all patients. The stones were fragmented with pneumatic litotriptor or holmium:YAG laser and nitinol basket was used for the extraction of the stones when necessary. The decision of placement of a stent was at surgeons' discretion according to intraoperative findings. When the surgery was uneventful without any injury to the ureter and patients with functioning contralateral kidney, a stent wasn't placed. We compared both groups in terms of postoperative complications and symptoms related to the procedure and stent placement itself.

Result(s): The mean stone size of the stented vs nonstented group was 10,35 (+/-5,06) vs 7,59 (+/-2,13) respectively. Ureteral stent wasn't placed in 101 of patients (%65) In the stented group 45 of patients experienced irritative symptoms (%84), hematuria was present in 20 patients (%27.7). None of the patients required secondary intervention due to symptoms. All patients were prescribed nonsteroidal anti-inflammatory drugs. In the non-stented group there were no hematuria or irritative symptoms. Four patients had renal colic episodes (%7.2), which resolved with oral medication. All patients were stone free after the first intervention.

Conclusion(s): Routine stenting is not necessary for all patients with middle or distal ureteral stones undergoing ureteroscopic stone removal. Irritative symptoms can be seen more than %80 of patients after stent placement. Endoscopic inspection of the ureter and surgeons decision whether to place a stent or not is required. The most common problem in the non-stented patients is renal colic episodes, which generally resolve with oral medication.

Status

CONFERENCE ABSTRACT

Institution

(Keskin, Simsek, Ob Argun, Tufek, Kural) Acibadem University, Department of Urology, Istanbul, Turkey

Publisher

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564.

Ureteroscopy- is the risk of erectile dysfunction a consideration?.

Shah B., Juwono T., Uichanco L., Fisher J., Patel T., Carrion R.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A307), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613823630

Introduction & Objective: The surgical treatment of nephrolithiasis includes shock wave lithotripsy, ureteroscopy with laser lithotripsy and basket stone extraction, and percutaneous nephrolithotripsy. Of the three treatment modalities, only ureteroscopy requires endoscopic navigation through the urethra in order to access to the ureter and kidney. This single-institution study aims to analyze any impact ureteroscopy may have on erectile function.

Material(s) and Method(s): A retrospective review of the IRB approved University of South Florida Stone Database was conducted. Between October 01, 2011 and July 31, 2015, a total of 100 male patients underwent ureteroscopy for nephrolithiasis. Of those 100 patients, 38 had both pre and post-procedure Sexual Health Inventory for Men (SHIM) scores available on record. These 38 patients were categorized by the grade of their pre-procedure erectile dysfunction (ED) based on their SHIM score as follows: no ED (SHIM of 22-25), mild (17-21), mild to moderate (12-16), moderate (8-11), and severe ED (1-7). The pre and post-procedure SHIM were analyzed using student T-test for worsening of ED grade following ureteroscopy. Median time between the procedure and the post-procedure SHIM recording was 37 days.

Result(s): Sixteen (42%) of the 38 patients in this cohort experienced an overall decrease in SHIM score. Among patients with none to mild ED prior to ureteroscopy, 7 (27%) experienced postprocedural worsening of their ED grade ($p = 0.049$). Among patients with $\geq$ mild to moderate pre-procedure grade, only one (8%) patient regressed (table 1). All 8 patients had undergone ureteroscopy with laser lithotripsy, basket stone extraction, and stent placement. Two of the 8 patients were subsequently treated with a (Table presented) PDE5 inhibitors, with the patient with mild ED improving back to baseline and the patient with moderate ED continuing to regress.

Conclusion(s): The role of ureteroscopy and its affect on EF is poorly stated. We have embarked on this vital retrospective pilot analysis alluding to a negative relationship. Further investigation is needed to formalize a relationship between ureteroscopy and EF.

Status

CONFERENCE ABSTRACT

Institution

(Shah, Juwono, Uichanco, Fisher, Patel, Carrion) University of South Florida, United States

Publisher

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Year of Publication

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565.

Ergonomics influences stone free rate for retrograde intrarenal surgery: A prospective single center study with Modified Ergonomic Lithotripsy position to outline "tips, tricks and technique for best outcomes".

Gauhar V., Goh R., Biligere S., Heng C.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A306-A307), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613823603

Introduction & Objective: Retrograde intra renal surgery (RIRS) is rapidly gaining momentum worldwide. Stone characteristics, equipment, surgeon fatigue time and ergonomics intraop determine a good stone free rate (SFR). We used a Modified Ergonomic Lithotripsy (MEL) position with definitive manoeuvres intra-op allowing the surgeon to be seated during RIRS thereby limiting fatigue with an aim to assess if RIRS is possible and to improve ergonomics with a primary aim to maximise SFR.

Material(s) and Method(s): 60 patients underwent RIRS between July 2015 to June 2016.

Patients were put in lithotomy position and after a diagnostic retrograde pyelogram and semi rigid ureteroscopy in all men a 11-13 fr, Boston 42 cm access sheath and women 11- 13 fr, 36 cm was used. Olympus URf-V or V2 was the scope of choice. Fragmentation by Dornier 40 watt low power laser. The table was given a head up incline at 35 degrees, respiratory rate controlled at 7-8 breaths per minute. 20 minutes prior to completion of procedure 10mg furosemide was given to induce diuresis. Surgeons stool was raised such that his hands were at the level of access sheath while sitting to relax shoulders and allow normal manoeuvring without stress on flexible scope, as done while standing.

Result(s): RIRS was successfully completed in all 60 cases with no additional difficulty in access of calyceal system. Reproducibly done by 4 surgeons. Excellent visibility maintained throughout. Controlled breathing helped limit respiratory excursion, ensuring good calyceal access. In the inclined position gravity aided diuresis and drainage was found to be superior as dust quickly washed out without much need for manual pumping to clear fragments allowing continuous lithotripsy without need to slow down for visibility and fragment clearance. Dusting, popcorning, basket extraction and all other standard operative descriptions for SFR were effectively deployed by MEL and done with ease and less stress and fatigue in complex/large stones especially once 45 min had elapsed.

Conclusion(s): We hypothesise these manoeuvres may be useful to consider especially in large stones or patient with compromised renal reserve to reduce fatigue and prevent any chances of acute kidney insult due to prolonged surgical time. A definitive outcome of improved ergonomics was decreased surgeon fatigue translating to more focussed RIRS to achieve better SFR especially in large/multiple/complex time consuming renal calculus surgery. Larger numbers are required to confirm reproducibility of the MEL technique.

Status

CONFERENCE ABSTRACT

Institution

(Gauhar, Goh, Biligere, Heng) Ng Teng Fong General Hospital, Singapore

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566.

Implementation of extra small percutaneous nephrolithotomy for large volume (>2 cm) multiple renal calculi: A prospective analysis of safety, efficacy and feasibility.

Joshi R.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A372-A373), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613823571

Introduction & Objective: Role of newer miniaturized Percutaneous Nephrolithotomy (PCNL) techniques like Microperc and Ultra Mini PCNL (UMP) has been restricted to low volume single renal calculus because of inability to access multiple calyces through one puncture. We, hereby, present our preliminary report of treating patients with multiple renal calculi with high volume (>2 cm) with newer Extra Small Mini Nephroscope (MINIPERC XS)

Material(s) and Method(s): From April 2015 to March 2016 we treated 130 patients with Miniperc XS out of which 68 were enrolled into present study depending upon presence of multiple calculi in pelvis and different calyces with a high overall stone burden. Our technique of Miniperc XS included use of 9.5 fr (Table presented) sheath, 7.5 fr Extra Small nephroscope and lithotripsy by 365 micron laser fiber with 100 watt laser in dusting mode. Stone free status was evaluated at 1st day and 4th week postoperatively by plain x-ray and ultrasound KUB.

Result(s): The most common combination was pelvis and lower calyceal calculi and the mean stone burden was 25.6mm (range: 22-38mm). The mean operative time was 72.7 minutes (52-128), mean hemoglobin drop was 0.7 g/dL (0.3-1.9) and mean hospital stay was 1.8 days (1.3-3.5). The overall stone free rate was 94.11% on 1st day which rose to 98.50% at 4th week when ancillary Retrograde Intra Renal Surgery (RIRS) at the time of DJ stent removal in 4 patients was considered. Complications were encountered in 5 cases with fever in 3 and sepsis in 2 cases.

Conclusion(s): MINIPERC XS is technically feasible, safe and efficacious in treatment of multiple and large volume renal calculi with excellent stone free rates, negligible complication rates and faster recovery.

Status

CONFERENCE ABSTRACT

Institution

(Joshi) Aarna Superspeciality Hospital, India

Publisher

Mary Ann Liebert Inc.

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2016

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567.

1,...2,...3 encrusted JJ stents in the same ureter: An Endourology nightmare!.

Adam A., Bhattu A., Patel H.

Embase

Journal of Endourology. Conference: 34th World Congress of Endourology, WCE 2016. Cape Town South Africa. 30(Supplement 2) (pp A166-A167), 2016. Date of Publication: 2016.

[Conference Abstract]

AN: 613823569

Introduction & Objective: Stent encrustation and forgotten stents have always proven to be a challenging dilemma facing the Endo-Urologist. We describe the first reported case of 3 encrusted stents within the same renal system. Since the PUJ segment was completely inaccessible via the retrograde approach, PCNL was performed using multiple punctures.

Material(s) and Method(s): A two point renal access was performed after attaining Ultra-sound guided access. The second (Figure presented) access point was used for multiple access puncture points at PCNL, and as an outflow tract to allow for irrigation. Multiple combined, endo-urological procedures were performed, including; bladder stone laser, stent coil resections, rigid and flexible retrograde ureteroscopy, ureteric basket manipulation, PCNL and prograde (flexible) ureteroscopy.

Result(s): After over 19 hours of cumulative operative time, with 6 sessions, and a complete hospital stay of 21 days, total clearance was achieved via the Endo-Urological route. The resulting renogram confirmed a 45 percent functioning ipsilateral system.

Conclusion(s): We describe the first report of 3 encrusted stents within the same ureter. In cases where retrograde access is not possible prior to PCNL, the use of a second outflow tract may prove useful, to gain multiple calycael access points if needed and to better assist with irrigation and maintaining a low intra renal pressures. Patients with forgotten, encrusted stents warrant a multi-modality approach in most instances. (Figure presented).

Status

CONFERENCE ABSTRACT

Institution

(Adam, Bhattu, Patel) Department of Urology, Helen Joseph Hospital, Department of Paediatric Urology, Rahima Moosa Mother and Child (Coronation) Hospital, Division of Urology, University of the Witwatersrand, Johannesburg, South Africa

Publisher

Mary Ann Liebert Inc.

Year of Publication

2016

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568.

Supine navigation percutaneous nephrolithotomy (PCNL): A case report.

Ngo C.C., So H.S., Lam K.M., Cheung M.H.P., Shum J.K., Lam W.C., Lee L.F., Cheng K.C.,
Chan H.C.W., Chau H.L.

Embase

International Journal of Urology. Conference: 14th Asian Congress of Urology of the Urological
Association of Asia, ACU 2016. Singapore Singapore. Conference Publication: (var.pagings).
23(SUPPL. 1) (pp 140-141), 2016. Date of Publication: July 2016.

[Conference Abstract]

AN: 72344450

Introduction and objective The creation of PCNL tract has conventionally be guided by fluoroscopy, ultrasound (USG), or a combination of both. Fluoroscopy means radiation exposure and we should cut down as much as possible. Limitations of ultrasound-guided puncture include difficulty in accurately visualizing the needle during insertion which may lead to multiple passes with risk of bleeding and it is highly operator dependent with a steep learning curve. To solve the above problems, we use navigation USG to achieve a radiation free puncture with high accuracy and which is easy to master. **Methods** A 69 year old man with history of hypertension, diabetes and stroke had left upper ureteric stone of 21 mm and another left lower ureteric stone of 4 mm and a left lower pole renal stone 6 mm in size. The renal function was found to be 161 $\mu\text{mol/L}$. We perform simultaneous supine PCNL and ureteroscopy under navigation ultrasound guidance. The navigation ultrasound system includes an ultrasound transducer with a sensor attached, 16G electronic needle with a sheath for guidewire passage and a magnet. Under the magnetic field, the real time images of the needle and the expected path are shown on the USG screen to achieve a precise puncture. Subsequent dilatation of the tract is similar to conventional PCNL. The patient was put under modified lithotomy position with left loin area elevated by a cushion 20 degrees and ipsilateral leg extended. The ureteric stones were pushed back to proximal ureter and left kidney with the ureteroscope while the PCN tract was dilated to 26Fr. Subsequently the stones were fragmented using pneumatic energy device and removed with forceps. Using a flexible nephroscope, the lower ureteric stone and lower pole stone were retrieved with a 4Fr basket to achieve complete stone clearance. A 6Fr double J stent was inserted retrogradely. At the end of the procedure, resectoscope was inserted via the 26Fr Amplatz sheath and PCN tract was cauterized with a ball electrode using monopolar diathermy under 1.5% glycine irrigation for a PCN-less procedure. **Results** Operation time was 2 h with complete stone clearance confirmed by non-contrast CT scan. Hemoglobin was static post op and serum creatinine improved to 147

mumol/L. The patient was discharged on post-op day 1. Zero radiation was achieved for tract creation and total fluoroscopic time and dose of 150 s and 7.4 mGy (for guide-wire manipulation and tract dilatation) respectively were recorded for the whole procedure. Less than 1 L of glycine was used. Conclusion Navigation ultrasound provides many benefits over other imaging modalities. It allows easy, accurate and radiation-free tract creation for PCNL even with the patient in supine position while all the advantages of supine PCNL preserved.

Status

CONFERENCE ABSTRACT

Publisher

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Year of Publication

2016

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569.

Novel technique of super mini percutaneous nephrolithotomy.

Zhong W., Zeng G., Zhao Z.

Embase

International Journal of Urology. Conference: 14th Asian Congress of Urology of the Urological Association of Asia, ACU 2016. Singapore Singapore. Conference Publication: (var.pagings).

23(SUPPL. 1) (pp 139), 2016. Date of Publication: July 2016.

[Conference Abstract]

AN: 72344445

Objective To present a novel super mini percutaneous nephrolithotomy (SMP) technique, which used modified miniature endoscopy system and percutaneous tract sheath, and investigate the safety and efficacy of SMP in treating upper urinary tract stone. Patients and methods 146 patients were arranged for SMP, while 5 patients required conversion to standard PCNL, thus

141 patients received success SMP. The mean BMI was 21.6 $\pm$ 4.5(11.2-29.3) kg/ m², the mean stone size was 2.2 $\pm$ 0.6(0.7-5.1) cm. Solitary kidney was noted in 8 (5.7%) cases, paediatric (aged < 14 years) in 27 (19.1%), previous failed RIRS in 8 (5.7%) and residual stones after PCNL in 21 (14.9%). The endoscopy system was consisting of a 7 Fr nephroscope, 10-12 Fr metal access sheath with suction-evacuation function. After retrograde ureteral catheterization, patients were turned to prone position. Percutaneous puncture into target calyx and dilation to 12 Fr was guided by ultrasonography and fluoroscopy, the suctionevacuation sheath was used. The stones were fragmented with Ho: YAG laser or pneumatic lithotripter. The irrigation with dust and small stone fragments is sucked out from the sheath, which would provide a clear visualization and decrease renal pelvic pressure during the SMP procedure. Results The mean operative time was 45.6 $\pm$ 21.5(25-115) min, the mean hemoglobin drop was 11.3 $\pm$ 8.7(0-38) g/L, no patient required blood transfusion. The initial stone-free rate (SFR) was 90.1%, the SFR at the 3rd month follow-up was 95.8%. Three patients required auxiliary procedures for residual stones. 72.3% of the patients did not require any kind of catheter, while 19.8% had JJ stents and 5.7% had nephrostomy tubes placed. The mean hospital stay was 2.1 days. Complications in Clavien grade = II were noted in 12.8% of the patients. Conclusions SMP is a safe and effective treatment for renal stones <2.5 cm. The novel metal access sheath with suction-evacuation function would facilitated stone removal, provide a clear visualization and decrease renal pelvic pressure during the SMP procedure.

Status

CONFERENCE ABSTRACT

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Outcomes of laser lithotripsy without basket extraction in Dubbo Base Hospital in Australia.

Han S.P., Indrajit B.

Embase

International Journal of Urology. Conference: 14th Asian Congress of Urology of the Urological Association of Asia, ACU 2016. Singapore Singapore. Conference Publication: (var.pagings). 23(SUPPL. 1) (pp 111), 2016. Date of Publication: July 2016.

[Conference Abstract]

AN: 72344356

Background Laser lithotripsy is an established endourological modality. There are two commonly used methods of laser lithotripsy, either laser lithotripsy alone or laser lithotripsy with basket extraction of fragment of stones. Basket extraction can potentially damage the ureterorenoscope. Objective To evaluate the efficacy and cost-effectiveness of laser lithotripsy alone without basket extraction in our hospital. Methods Retrospective reviews of the patients undergoing laser lithotripsy in our hospital from 2013 to 2014. Operating time, stone size, readmission within one, two, three and twelve months and costs of ureterorenoscope repairs were studied. Results There are 116 patients in our studies. Mean age is 57 (male = 72, female = 44). Mean operating time is 41 min. There is one patient readmitted within a month with urosepsis and there is another patient readmitted within a year with pyelonephritis. There was no patient readmitted due to residual fragment of stones. Ureterorenoscopes were repaired twice during these years and the total cost was 16 000 Australian dollars. Conclusion Laser lithotripsy alone without basket extraction is a reliable and cost-effective method of stone removal.

Status

CONFERENCE ABSTRACT

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571.

Clearance rates of residual stone fragments and dusts after endoscopic lithotripsy procedures using a holmium laser: 2-year follow-up results.

Kang M., Cho S.Y., Cho M.C., Jeong H., Son H.

Embase

International Journal of Urology. Conference: 14th Asian Congress of Urology of the Urological Association of Asia, ACU 2016. Singapore Singapore. Conference Publication: (var.pagings).

23(SUPPL. 1) (pp 101-102), 2016. Date of Publication: July 2016.

[Conference Abstract]

AN: 72344325

Purpose To investigate the spontaneous clearance rates of remnant particles following miniaturized percutaneous nephrolithotomy (mini- PCNL) and retrograde intrarenal surgery (RIRS). **Methods** Among 624 patients who underwent mini-PCNL or RIRS at Seoul National University Boramae Hospital from 2011 to 2015, we collected data of 247 patients with 2 years of follow-up. Of these, we included 148 patients with unilateral renal stones between 10 and 30 mm, as well as remnant particles after surgery. The size criteria of dusts and residual fragments (RFs) were, respectively, <1 mm and <3 mm. The Institutional Review Boards of our institution approved the study design and the use of patients' clinical information (No. 16- 2013-11). **Results** After excluding 22 patients, 126 patients (RFs = 21, dusts = 98, and both RFs and dusts = 7) were analyzed. Mean age was 56.5 (+/-14.4) years and mean stone size was 19.5 (+/-12.5) mm. The mean follow-up period was 18.5 (+/-12.9) months. In patients whose remnant particles were naturally eliminated following lithotripsy, the mean stone passage time was 9.0 (+/-9.3) months in the dusts and 13.9 (+/-11.1) months in the RFs groups (P = 0.135). Remnant particles disappeared in 42 out of 105 patients (40.0%) in dusts and 7 out of 28 patients (25.0%) in RFs groups (P = 0.187). The size of dusts and RFs increased, respectively, in 18.1% (19/105) and 28.6% (8/28) of patients with remnant particles during the follow-up period. **Conclusions** The presence of dusts and RFs were poor prognostic factors in patients underwent renal stone surgery using a holmium laser. Complete residual stone removal by using a basket or dusts eradication by irrigation for an adequate time during surgery can be a good surgical strategy.

Status

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572.

Dust/Blast/Clast/Pop renal calculi between 1.5 and 3.5 cm by retrograde intrarenal surgery: Does it actually work to achieve a stone free rate: A single centre experience in Asian men.

Goh R., Chow M., Biligere S., Tiong Heng C., Gauhar V.

Embase

International Journal of Urology. Conference: 14th Asian Congress of Urology of the Urological Association of Asia, ACU 2016. Singapore Singapore. Conference Publication: (var.pagings).

23(SUPPL. 1) (pp 92), 2016. Date of Publication: July 2016.

[Conference Abstract]

AN: 72344294

Aim Prospective study of outcomes renal calculi (1.5-3.5 cm) managed with retrograde intrarenal surgery. Materials and Methods Patients with CT diagnosed calculi were consented and underwent retrograde intrarenal surgery (RIRS) as a principal procedure for treatment. Olympus URF-V or V2 with Boston 11/13 access sheath and 270 lm Dornier fibre using a 40 watt Dornier laser machine were used. The principal outcome was to ascertain if adequate stone free rate (SFR) can be achieved via RIRS using the various techniques described. Outcomes were assessed by CT done 3- 6 weeks after procedure. "Stone free" was defined as no fragments, or fragments <2 mm, requiring no further procedure. Secondary outcomes observed included intra-op difficulties, need for ancillary instruments, laser settings beneficial for maximising efficacy, number of additional RIRS procedures; need for ancillary procedures such as shock wave, complications encountered, operative time, difficulties in ergonomics for surgeon. Results 26 cases of RIRS with renal calculi more than 1.5 cm in maximal diameter, or multiple stones occurred in a single institution between July 2015 and February 2016. Total 24 patients were followed up in the study. 20 patients were male (83.3%). Mean maximal stone diameter was 20.3

+ 6.0 mm. 10/26 cases had multiple stones. Mean total operative time was 97.5 + 17.4 min, with the larger and harder stones requiring longer duration of op. Mean laser time was recorded to be 63.6 + 34.9 min. 11/26 cases had to undergo stenting before RIRS proper. 5/26 cases had a second RIRS procedure for achieving SFR (19.2%). Amongst these, 1 had a solitary kidney, hence limiting the laser time per session, and another had an equipment problem and procedure was abandoned midway. The other cases were all large stones with mean maximum diameter of 2.5 cm. 3 patients with lower pole stones had difficulty with stone access intraoperatively. One of them required further shock wave for residual stone. The other 2 were stone free on follow-up. Only 8/26 required baskets for repositioning or extraction of calculi (mainly lower pole fragments). Two cases had grade 1 ureteric injury, and another 2 had postoperative urosepsis of which 1 patient presented 2 weeks later. There were no other significant complications, and other patients were discharged POD 0-2. 4/25 Patients had estimated 100% stone clearance intra-op and awaiting the follow up CT before stent removal. Conclusions RIRS is a safe, viable option in management of large renal calculi. Learning curve is not as steep compared to per-cutaneous approach. A combination of all fragmentation techniques is mandatory for effective achievement of SFR, and minimising operative time and further procedures. While dependency on instruments and auxiliary equipment is an important consideration in this surgery, with clever use of combination of manoeuvres, the overall cost can be minimised. The ease, safety, and good outcomes of RIRS compel promulgation of RIRS as an alternate first line in management of renal calculi sized between 1.5 and 3.5 cm.

Status

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573.

Dusting vs basketing during ureteroscopic lithotripsy: What is more efficacious? A multi-center prospective trial from the EDGE research consortium.

Knudsen B.E., Chew B., Humphreys M., Krambeck A., Matlaga B., Miller N., Monga M., Shah O., Sur R.

Embase

Urolithiasis. Conference: 13th International Symposium on Urolithiasis. Chiba Japan. Conference Publication: (var.pagings). 44(1 SUPPL. 1) (pp S29), 2016. Date of Publication: July 2016.

[Conference Abstract]

AN: 72343803

Introduction: There is controversy and very little evidence as to whether dusting stones is more efficacious than basket extraction of fragments during ureteroscopic lithotripsy. We prospectively followed patients to determine which method resulted in the higher stone free rate.

Method(s): IRB approval was obtained across all sites and patients undergoing ureteroscopy for renal stones between 5 and 20 mm were eligible. The Endourology Disease Group for Excellence (EDGE) includes high volume stone centers who had a well established dusting (3 sites) or basketing (5 sites) approach to intrarenal calculi that participated in the study. Laser lithotripsy was utilized and patients were imaged within 3 months following ureteroscopy. The definition of stone-free was no fragments of any size on KUB and ultrasound imaging. All patients were stented postoperatively and given alpha-blocker for 30 days.

Result(s): 110 patients were enrolled and followed for 3 months (N = 68 Basketing, N = 52 Dusting). The stones were slightly larger in the dusting group and significantly more laser energy was used in the dusting group. There were fragments <2 mm present in 11.8 % in the basketing group compared to 27.3 % in the dusting groups. Only 2.8 % (basketing) and 8.6 % (dusting) of patients in each group became symptomatic from their residual fragments. There was no difference in readmission to ER or hospital between the groups (13.9 %-dusting vs 14.6 %-basketing) or in reintervention rates (9.7 %-basketing vs 4.3 % dusting). There were no differences between the groups in post-operative creatinine or stone analyses. There was a slightly higher risk of complications in the basketing (17 %) vs dusting (13.3 %) cohorts.

Conclusion(s): Our interim analysis shows that in patients undergoing ureteroscopy for renal stones between 5 and 20 mm that active extraction of all fragments with a basket produces a higher stone-free rate (86.4 %) than dusting the stone (54.3 %). There was no difference in readmission or re-intervention rates and few patients in either group became symptomatic from their residual fragments. Long-term followup of these patients will also determine the fate of these fragments.

Status

CONFERENCE ABSTRACT

Institution

(Knudsen) Ohio State University, Wexner Medical Center, United States (Chew) University of British Columbia, Canada

(Humphreys) Mayo Clinic, Scottsdale, United States

(Krambeck) Mayo Clinic, Rochester, United States

(Matlaga) Johns Hopkins University, United States

(Miller) Vanderbilt University, United States

(Monga) Cleveland Clinic, United States

(Shah) Columbia University, United States

(Sur) University of California San Diego, United States

Publisher

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574.

Robotic assisted flexible ureterorenoscopic (Robotic FURS) management of renal calculi.

Sarica K.

Embase

Urolithiasis. Conference: 13th International Symposium on Urolithiasis. Chiba Japan. Conference

Publication: (var.pagings). 44(1 SUPPL. 1) (pp S9-S10), 2016. Date of Publication: July 2016.

[Conference Abstract]

AN: 72343749

Flexible ureteroscopy (FURS), facilitated by retrograde intrarenal surgery, evolved rapidly over the last decade based on significant improvements in the armamentarium and has become a

viable alternative to ESWL and PCNL, even for larger renal calculi. However, FURS represents a technically challenging procedure that requires specific endourologic skills. Despite progress in the design of ureterorenoscopes and accessories, FURS cannot be performed as solo surgery. The endourologist needs assistance to insert and advance laser fibres or baskets and to start and maintain irrigation while holding the endoscope and focusing on the target. Digital endoscopes with "tip at the chip" technology may lead to difficulties orienting the renal collecting system in comparison to standard systems with a pendulum camera attached to the eyepiece. During FURS, the surgeon has to activate several devices by foot pedal, such as those for digital fluoroscopy, laser lithotripsy, or irrigation. Most surgeons accomplish this in a standing position, a suboptimal ergonomic posture that may result in orthopaedic complaints. It may have also a negative impact on performance of FURS, particularly in cases of larger stones requiring longer operative times, and may contribute to higher rates of secondary treatment when compared with mini-PCNL. Like other fluoroscopically guided procedures, FURS is associated with radiation exposure of the operator in the range of 1.7-56 mSv. Robot-assisted surgery has dramatically influenced minimally invasive surgery with the introduction of console-based manipulators, such as the da Vinci robot (Intuitive Surgical, Sunnyvale, CA, USA) or the Hansen device (Hansen Medical, Mountain View, CA, USA). Desai and colleagues used the Hansen device, designed for cardiovascular interventions, to perform robot-assisted flexible ureterorenoscopy; however, this project has been discontinued. Since 2012, ELMED (Ankara, Turkey) has been working on a robot specifically designed for FURS. In conclusion, despite its increased application, FURS may represent a challenging technique, particularly in complicated cases. Roboflex Avicenna provides a suitable and safe platform for robotic FURS, with significant improvement of ergonomics. Future studies must evaluate the impact of the device on clinical outcomes of FURS (IDEAL stage 3) to determine the role of robotic FURS.

Status

CONFERENCE ABSTRACT

Institution

(Sarica) Department of Urology, Dr. Lutfi KIRDAR Research and Training Hospital, Turkey

Publisher

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575.

Management of ureteral stones with semirigid ureteroscopy: Tips and tricks for a successful and complication free procedure.

Lahme S.

Embase

Urolithiasis. Conference: 13th International Symposium on Urolithiasis. Chiba Japan. Conference Publication: (var.pagings). 44(1 SUPPL. 1) (pp S9), 2016. Date of Publication: July 2016.

[Conference Abstract]

AN: 72343748

Semirigid ureterorenoscopy allows to treat ureteral stones of the lower, mid and upper part of the ureter. Today there are ureteroscopes with a small instrument diameter available, that allow an easy and atraumatic access to the ureter. In order to know the morphology of the upper urinary tract it is recommended first to perform a retrograde pyelography. After that a guidewire should be inserted in the ureter. This allows to insert a DJ-stent or to manage difficulties at any time during the procedure. It is recommended to pass the ureteral orifice next to the guidewire. During the advancement of the ureterorenoscope an irrigation flow is needed. The mucosa of the ureter should always slide over the instrument ("sliding mucosa"). After the stone had been reached, smaller stones can be taken out by different stone baskets. In case of large stones lithotripsy is needed. A lot of different lithotripsy techniques are available, such as ultrasound, ballistic lithotripsy and holmium laser lithotripsy. After removal of the stone the insertion of a DJ-stent is often needed. During the whole procedure flouroscopy should be available in order to have a maximum security. The presentation gives tips and tricks to reach a maximum success of the procedure and to avoid or manage any complication.

Status

CONFERENCE ABSTRACT

Institution

(Lahme) Center for minimally-invasive Therapy-robotic-assisted Surgery, Siloah St. Trudpert Hospital, Pforzheim, Germany

Publisher

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576.

Flexible ureteroscopy and laser lithotripsy for renal stones using 'pop-dusting': Comparison of outcomes between traditional dusting settings versus ultra-high frequency settings.

Tracey J., Gagin G., Morhardt D., Hollingsworth J., Ghani K.

Embase

Journal of Urology. Conference: 2016 Annual Meeting of the American Urological Association, AUA. San Diego, CA United States. Conference Publication: (var.pagings). 195(4 SUPPL. 1) (pp e683), 2016. Date of Publication: April 2016.

[Conference Abstract]

AN: 72240324

INTRODUCTION AND OBJECTIVES: The "dusting" technique for laser lithotripsy during flexible ureteroscopy (fURS) has become popular with the advent of multi-cavity high power holmium lasers. However the evidence base in this area is limited, especially regarding different laser settings for dusting. We analyzed our outcomes of dusting for renal stones, before and after acquisition of a 120-watt holmium system that can achieve frequencies of up to 80 Hertz (Hz).

METHOD(S): We performed a retrospective review of consecutive fURS for renal stones by a single surgeon using a dusting technique over a 14-month period. Dusting, i.e. high frequency and low pulse energy, was used in two groups: Group 1 using 60-100-watt Holmium: YAG systems with settings of 0.2-0.5 Joules (J) x 30-50Hz; Group 2 using a 120-watt system (Pulse 120H, Lumenis Inc, San Jose, CA) using settings of 0.2-0.5J x 30-80Hz, including the technique of 00Popdusting 00 (0.5J x 80Hz). All cases were recorded in a database and assessed for stone size, Hounsfield unit (HU), use of staged procedures and ureteral access sheaths (UAS). Stone clearance was determined on post-operative radiography, ultrasound or computed tomography.

Complications were classified using the Clavien-Dindo Grade.00 RESULTS: Dusting for renal stones was performed in 28 patients in Group 1 and 35 patients in Group 2, including a total of 6 patients with partial staghorn stones. The mean stone sizes were 11.1 (Group 1) and 12.2 mm (Group 2) ($p=0.41$). The mean body mass index was higher in Group 2 (33.3 vs 29.7, $p<0.05$). There were no differences in HUs (1015 vs 948, $p=0.45$), or percentage of solitary (71% vs 74%, $p=0.58$) or lower pole (25% vs 29%, $p=0.78$) stones between groups 1 and 2, respectively. UAS was used in 32% (Group 1) and 37% (Group 2) of patients, primarily to keep low intra-renal pelvic pressures. There was no difference in mean laser energy used between groups (7.2kJ vs 6.6kJ, $p=0.85$, Groups 1 and 2, respectively). The zerofragment and ≥ 2 mm-fragment rates were 39% vs 66% ($p<0.05$), and 57% vs 77% ($p=0.11$) for Groups 1 and 2, respectively. There were no differences in complications (Group 1: Grade 1-2=3 vs Group 2: Grade 1-2=4). Staged procedures were performed less frequently in Group 2 (11% vs 32%, $p=0.06$).

CONCLUSION(S): We demonstrated an improvement in complete stone-free rates when using a dusting technique for renal stones with ultra-high frequencies. Our results suggest dusting during fURS is a reasonable alternative to conventional laser lithotripsy strategies or basket retrieval techniques.

Status

CONFERENCE ABSTRACT

Institution

(Tracey, Gagrin, Morhardt, Hollingsworth, Ghani) Ann ArborMIUnited States

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Elsevier Inc.

Year of Publication

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577.

Definitive Ureteral Stone Treatment (DUST) score predicts success of ureteroscopy in acutely obstructing proximal ureteral stones.

Tran T., Thavaseelan S., Pareek G.

Embase

Journal of Urology. Conference: 2016 Annual Meeting of the American Urological Association, AUA. San Diego, CA United States. Conference Publication: (var.pagings). 195(4 SUPPL. 1) (pp e683), 2016. Date of Publication: April 2016.

[Conference Abstract]

AN: 72240323

INTRODUCTION AND OBJECTIVES: Definitive treatment for patients emergently presenting with obstructing proximal ureteral stones is often deferred due to concern for higher complication rates and lower efficacy in the setting of acute ureteral inflammation and spasm. We sought to evaluate our experience with a scoring system (DUST Score) to assess if the decision to definitively treat or to place a ureteral stent could be guided based on computed tomography done at presentation.

METHOD(S): All patients that underwent inpatient ureteroscopy (URS) from 2010 to present were reviewed. Inclusion criteria were presentation to the Emergency Department with acute renal colic, age > 18 years old, non-contrast CT with proximal ureteral stone and no evidence of sepsis. Laboratory and radiographic data were analyzed. Statistical difference was assessed with Student's t-test. DUST score was determined based upon the number of cutoff values a patient was below for rise in serum creatinine (DELTACr) and periureteral density (PUD).

RESULT(S): 101 patients met inclusion criteria, 75 of which (74.2%) were stone free after emergency URS. One patient (0.9%) had a complication (extravasation on retrograde pyelogram). PUD and DELTACr were both statistically different between patients that were stone-free and those that were not (-3.3 versus 18.8 HU, $p < 0.01$ and 0.22 versus 0.62 mg/dL, $p < 0.01$, respectively). Cutoff values of 10.0 HU for PUD and 0.2 mg/dL for DELTACr were established. PUD < 10 HU was associated with a SFR of 97.2% while a SFR of 20.1% was noted for PUD ≥ 10 . Similarly, DELTACr < 0.2 had a SFR of 100%, while DELTACr ≥ 0.2 had a SFR of 51.8%. DUST score of 0, 1 and 2 correlated with treatment success rates of 8%, 91% and 100%, respectively. Success rates were not different between surgeons with and without endourology fellowship training (60.7% vs. 74.5%, $p = 0.32$).

CONCLUSION(S): URS in the setting of acute renal colic for proximal ureteral stones is safe and effective. Pre-operative utilization of the DUST score can identify optimal candidates for definitive treatment versus stent placement. Treatment success does not appear to require advanced endourology training.

Status

CONFERENCE ABSTRACT

Institution

(Tran, Thavaseelan, Pareek) ProvidenceRIUnited States

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2016

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578.

Factors predicting success of emergency ureteroscopic treatment of ureteral stones: A 3 years single center experience in 212 patients.

Umari P., Bucci S., Rizzo M., Pavan N., Liguori G., Trombetta C.

Embase

Journal of Urology. Conference: 2016 Annual Meeting of the American Urological Association, AUA. San Diego, CA United States. Conference Publication: (var.pagings). 195(4 SUPPL. 1) (pp e682), 2016. Date of Publication: April 2016.

[Conference Abstract]

AN: 72240322

INTRODUCTION AND OBJECTIVES: The aim of this study is to investigate the role of emergency ureteroscopy (eURS), in the definitive treatment of ureteric stones and to determine the factors predicting favorable results.

METHOD(S): We retrospectively analyzed all the patients underwent eURS from January 2012 through December 2014 by the same surgeon. Only patients presenting with a first episode of ureteric colic were included in the study. All the procedures were performed within 48 hours from the presentation to the emergency room. Laser lithotripsy, basket stone removal and ureteral stenting were performed when necessary. The database included: age, gender, anthropometric parameters, side of disease, position of the stone, size of the stone, presence of hydronephrosis,

serum creatinine, urinalysis and pretreatment imaging. Operative time, hospitalization, complications, stone free status (SFR) and need for auxiliary procedures were evaluated. Regarding the results, patients were separated into two groups, Gr1 had successful eURS and Gr2 failed their treatment and needed auxiliary procedures (ESWL or URS). The collected data were analyzed using SPSS software with the purpose to assess the efficacy of the procedure and the presence of factors predicting favorable results.

RESULT(S): Of the 212 patients underwent eURS the mean stone size was 6.72 mm (6.55 mm in Gr1 and 7.70 mm in Gr2) and most of them were located in the distal ureter 64.1% (75.3% in Gr1 and 34,5% in Gr2). 72.1% of the patients had hydronephrosis at diagnosis (18.3% severe). 154 patients (72.6%) were stone free after eURS (Gr1) and 58 patients (27.4%) failed treatment and went on to have a secondary procedure (Gr2). SFR for proximal and distal stones was 50% and 85.3% respectively. SFR for distal stones smaller than 7 mm reached 90%. Ureteral stenting was slightly higher in Gr2 than in Gr1, 96.6% vs 89.6% respectively. The mean operative time and hospitalization time was comparable in both groups, 43.1 min and 3.4 days in Gr1 and 32.6 min and 3.9 days in Gr2. Complications rate was higher in Gr2 than in Gr1, 17.2% and 7.8% respectively; no patient experienced major perioperative and postoperative complications.

CONCLUSION(S): In our experience, immediate ureteroscopy for ureteral stone colic proved to be safe and effective, offering both immediate stone fragmentation and pain relief. The success rate of the procedure is higher in patients with smaller stones (<7mm) and located in the distal ureter. A subgroup of younger and healthier patients benefit the most from the procedure.

Status

CONFERENCE ABSTRACT

Institution

(Umari, Bucci, Rizzo, Pavan, Liguori, Trombetta) TriesteItaly

Publisher

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2016

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579.

A novel technique of suctioning flexible ureteroscopy with automatic control of renal pelvic pressure: An initial experience of 37 cases.

Song L., Deng X., Xie D., Fan D., Peng Z., Liu T., Ye Z.

Embase

Journal of Urology. Conference: 2016 Annual Meeting of the American Urological Association, AUA. San Diego, CA United States. Conference Publication: (var.pagings). 195(4 SUPPL. 1) (pp e682), 2016. Date of Publication: April 2016.

[Conference Abstract]

AN: 72240321

INTRODUCTION AND OBJECTIVES: Flexible ureteroscopy (URS) is rapidly becoming a first line therapy for patients with renal and ureteral calculi. Currently the medical infusion devices can only monitor infusion flow and pressure, but not renal pelvic pressure (RPP).

METHOD(S): We designed a patented intelligent system to help flexible URS, including an irrigation and suctioning platform and a ureteral access sheath with a pressure-sensitive tip, which can precisely regulate the infusion flow and control the vacuum suctioning by computerized real-time recording and monitoring of RPP. A stable RPP was ensured by pressure feedback technology. Thirty-seven patients with renal or ureteral calculi participated in the study and received flexible ureteroscopic laser lithotripsy and gravel particles were sucked out automatically. Patients were evaluated on postoperative days 1 and 30 by KUB to assess stone-free status.

RESULT(S): The procedure was successfully performed in all patients with clear operative visualization without a need of stone basketing. The mean stone size was 15.9 +/- 5.2 mm. The mean operative time was 24.8 +/- 15.9 min. The stone-free rates at postoperative days 1 and 30 were 89.2% (33/37) and 94.6% (35/37), respectively. Grade 1 complications were noted in 3 (8.1%) cases according to the Clavien classification, including systemic inflammatory response syndrome in 1 case (2.7%), and fever in 2 cases (5.4%).

CONCLUSION(S): The patented system is technically feasible, safe, and efficacious for treating upper urinary calculi with advantages of breaking stones more effectively and low complication rates because of its automatic control of RPP.

Status

CONFERENCE ABSTRACT

Institution

(Song, Deng, Xie, Fan, Peng, Liu) GanzhouChina (Ye) WuhanChina

Publisher

Elsevier Inc.

Year of Publication

2016

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580.

The new developments of the robotic assisted retrograde intra-renal surgery (RA-RIRS) with avicenna roboflex.

Rassweiler J., Sarica K., Geavlete P., Tokatli N.Z., Klein J., Traxer O., Al Zarooni A.Q., Farahat Y., Hoenig D.M., Giusti G., Tugcu V., Imamoglu M.A., Muslumanoglu A.Y., Savas M., Saglam R., Patel A.

Embase

Journal of Urology. Conference: 2016 Annual Meeting of the American Urological Association, AUA. San Diego, CA United States. Conference Publication: (var.pagings). 195(4 SUPPL. 1) (pp e663), 2016. Date of Publication: April 2016.

[Conference Abstract]

AN: 72240276

INTRODUCTION AND OBJECTIVES: Robotic flexible ureterorenoscopy (fURS) was first attempted by Desai M et al treating only a limited number of patients. Saglam R et al, developed the first robotic manipulator which can remotely control all functions of commercially available flexible endoscopes. Advantages of this new robotic master slave device for the treatment of kidney stones include improved precision with enhancement of stone fragmentation and dusting, while reducing operator fatigue and radiation exposure, and prolonging endoscope longevity through torque elimination.

METHOD(S): The surgeon inserts a suitable ureteral access sheath, and the technician moves the Roboflex manipulator to the docking position. The fURS is introduced into the ureteral lumen

through the access sheath manually, the instrument hand piece is coupled and locked into the special adaptor of the robotic arm. The fURS is manipulated with two joysticks. The right one enables precise deflection with a new integrated thumb-wheel. The precision of the deflection mechanism is very important. The Avicenna Roboflex allows the surgeon to control the endoscope tip by choosing the scaling precision of the thumb wheel. The left joystick stick enables rotation and in-and-out movements of the fURS. By using precise left and right control joysticks, the fURS is advanced into the kidney. The laser fiber actuator holding the laser fiber is inserted into the working channel of the fURS. Once the fire button is pressed, the tip of the laser fiber is automatically advanced to the nearest firing position. Further advancement of fiber can be performed by the operator using the "in-out" controls. The foot pedals of laser and fluoroscopy devices are remotely controlled with the new universal remote pedal control unit. If high respiratory rate or excursion makes stone fragmentation difficult, some surgeons ask the anaesthetist to reduce tidal volume or request periods of apnea. However, an easier way with a simple, pump inflatable balloon compression device works equally well after consulting the anaesthetist for safety.

RESULT(S): N/A

CONCLUSION(S): The incremental improvements incorporated into the Avicenna Roboflex console described above, allow better operator control of key aspects of the procedure releasing expensive staff resources (cost savings), while improving both safety and efficacy for our patients. Together with elimination of radiation safety protocols and better comfort for the operator when treating large renal stones, efficiency can be improved especially when multiple such procedures are planned in a day's operating.

Status

CONFERENCE ABSTRACT

Institution

(Rassweiler) HeilbronnGermany (Sarica, Tugcu, Muslumanoglu) IstanbulTurkey

(Geavlete) BucharestRomania

(Tokatli, Imamoglu, Saglam) AnkaraTurkey

(Klein) UlmGermany

(Traxer) ParisFrance

(Al Zarooni, Farahat) Umm Al QuwainUnited Arab Emirates

(Hoenig) Long IslandNYUnited States

(Giusti) MilanItaly

(Savas) AntalyaTurkey

(Patel) LondonUnited Kingdom

Publisher

Elsevier Inc.

Year of Publication

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581.

Developments in ureteroscopic stone treatment (DUST): Tips and tricks for lithotripsy of renal stones using multi-cavity high-power holmium lasers.

Ghani K., Gagin G., Hollingsworth J., Faerber G., Roberts W., Wolf Jr. J.S.

Embase

Journal of Urology. Conference: 2016 Annual Meeting of the American Urological Association, AUA. San Diego, CA United States. Conference Publication: (var.pagings). 195(4 SUPPL. 1) (pp e661), 2016. Date of Publication: April 2016.

[Conference Abstract]

AN: 72240272

INTRODUCTION AND OBJECTIVES: 'Dusting' is the use of high frequency and low pulse-energy (HiFr-LoPE) laser settings to ablate stones into sub-millimeter fragments. In this video we demonstrate our technique of ureteroscopic stone dusting for renal stones using multi-cavity high-power Holmium:YAG systems.

METHOD(S): We present three cases of renal pelvic stones (1.4, 1.5 and 1.4 cm, respectively) and one partial staghorn (3.0 cm) treated with dusting technique via flexible ureteroscopy. We used a 100-Watt (VersaPulse, Lumenis Inc, San Jose, CA) or a 120-Watt holmium laser (Pulse 120H, Lumenis). The 120-Watt system permits dual lithotripsy mode of 'Fragmentation' and 'Dusting' as well as change in pulse width. Energy settings were adjusted according to stone composition, location and size, varying from 0.2-0.8 Joules (J) with repetition rates between 30-80 Hertz (Hz).

RESULT(S): Effective strategies for dusting renal stones include the technique of 'nudging' and 'herding' to displace renal stones into upper pole calyces. Dusting methods include chipping,

dancing and pop-corning maneuvers. For chipping, the laser fiber is directed to the periphery of the stone to allow small fragments to break off. For dancing, the tip of the laser fiber is brushed back and forth across the stone surface. We also illustrate the new technique of 'pop-dusting' using a setting of 0.5J x 80Hz, for rapidly ablating fragments within calyces into powder. With dusting strategy, the utilization of ureteral access sheaths and retrieval devices are minimized. CONCLUSION(S): High-power holmium lasers have opened a new frontier in laser lithotripsy. Strategies that optimize fragmentation and post-procedural drainage when using a dusting technique include nudging and herding stones into upper pole calyces. Pop-dusting is a new technique that can ablate stones rapidly into fine powder. Further clinical evidence is needed to determine if outcomes are similar to conventional laser lithotripsy strategies.

Status

CONFERENCE ABSTRACT

Institution

(Ghani, Gagin, Hollingsworth, Faerber, Roberts, Wolf Jr.) Ann ArborMIUnited States

Publisher

Elsevier Inc.

Year of Publication

2016

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582.

Differences between high-frequency and long-pulse laser lithotripsy-a practical explanation and an objective evaluation.

Kronenberg P., Traxer O.

Embase

Journal of Urology. Conference: 2016 Annual Meeting of the American Urological Association, AUA. San Diego, CA United States. Conference Publication: (var.pagings). 195(4 SUPPL. 1) (pp e660), 2016. Date of Publication: April 2016.

[Conference Abstract]

AN: 72240270

INTRODUCTION AND OBJECTIVES: Lithotripters allowing high-frequency and long-pulse lithotripsy are fairly new techniques used in renal stone treatment. They offer several advantages over standard lithotripsy but their ablation efficiencies and relationships are still unclear. The authors decided to explain these lithotripsy modes in a straightforward manner, as well as to objectively evaluate and assess their individual lithotripsy performances.

METHOD(S): The authors use a video to illustrate the differences between standard, high-frequency, and long-pulse lithotripsy. They discuss some of their individual features, such as stone fragment size and stone dusting. Afterwards a precise comparison of high-frequency and long-pulse lithotripsy experiments was undertaken using an automated laser fragmentation testing system. Artificial stones made of soft and hard stone material (plaster of Paris and BegoStone), as well as standard 273-mm core laser fibers (SureFlex from AMS and MF272STs from Rocamed) were used in the experiments. Lithotripter settings for high-frequency experiments were set at 40 Hz and at a total power level of 8, 16, 24, and 32W, while long-pulse experiments were done at 15Hz with a total power level of 7.5, 15, and 22.5W. The lithotripters used were the VersaPulse Powersuite 100W from Lumenis, and the MH01-ROCA FTS30W from Rocamed. Additional high-frequency experiments were conducted with a ball-tipped laser fiber, given the increasing trend of using high-frequency with such fibers (AccuTrac from Boston Scientific). Ablation volumes and laser fiber tip degradation were evaluated.

RESULT(S): Long-pulse lithotripsy accomplished higher ablation volumes than high-frequency lithotripsy ($p < 0.00001$), with ablation volumes on average over 50% higher (up to 150% higher). Even in comparison to high-frequency experiments done with the ball-tipped fiber, long-pulse experiments maintained a better and higher performance ($p < 0.0001$). The ball-tipped fiber was as ablative as the standard fiber, yet showed extensive fiber tip degradation at higher energy levels, which might explain the performance drop observed at those levels.

CONCLUSION(S): Long-pulse lithotripsy performed better than high-frequency lithotripsy. Within the range of settings evaluated, longpulse laser lithotripters, not capable of high-power high-frequency lithotripsy, can still compete with the more heavy-weight lithotripters, capable of very high-frequency lithotripsy. The ball-tipped fiber wasn't more ablative than a standard fiber for high-frequency lithotripsy.

Status

CONFERENCE ABSTRACT

Institution

(Kronenberg) AmadoraPortugal (Traxer) ParisFrance

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583.

Stone dusting: Outcomes of ureteroscopic lithotripsy using a multi-cavity high-power holmium laser.

Tracey J., Gaglin G., Morhardt D., Hollingsworth J., Ghani K.

Embase

Journal of Urology. Conference: 2016 Annual Meeting of the American Urological Association, AUA. San Diego, CA United States. Conference Publication: (var.pagings). 195(4 SUPPL. 1) (pp e510), 2016. Date of Publication: April 2016.

[Conference Abstract]

AN: 72239927

INTRODUCTION AND OBJECTIVES: A popular approach to treating renal stones with ureteroscopy (URS) is laser fragmentation and basket retrieval. Recently, there has been great interest in 'Dusting' technique in comparison to retrieval. However, critics contend this may be associated with high residual fragment (RF) rates. To better inform this debate we evaluated our experience with dusting using a multicavity high-power holmium laser.

METHOD(S): We performed a retrospective review of all consecutive URS cases performed by a single surgeon at an academic center utilizing a 120-Watt Holmium:YAG laser (Pulse 120H, Lumenis Inc, San Jose, CA). The 120-Watt has dual lithotripsy modes of 'Dusting' and 'Fragmentation'. Dusting i.e., high frequency and low pulse energy (HiFr-LoPE), settings of 0.2-0.5 J x 30-80 Hz were utilized. All cases were recorded on a database by a research assistant

and assessed for stone size, Hounsfield unit (HU), and use of: staged procedures, ureteral access sheath (UAS) and post-operative stenting. Stone clearance was determined on post-operative radiography (KUB), ultrasound or computed tomography. Complications were classified using the Clavien-Dindo Grade.

RESULT(S): Over an eight month period, URS was performed on 82 renal units (71 patients). Renal stones constituted the majority of cases (73.2%) including four partial staghorn stones. Bilateral URS was performed in five patients, while a further five had staged procedures. The mean stone size and HU were 11.5 mm (SD 5.6; range 4-30) and 1032.9 (range 200-1530), respectively. The maximum cumulative diameter for stones ranged from 5 to 50 mm. UAS was used in 15 patients (21.1%) primarily to keep low intra-renal pelvic pressures. Mean laser energy used was 5.20kJ (range 0.06-42.09). Post-operative stents were used in 91.4% of cases, of which 41.3% were self-extraction strings. Ten patients (14.0%) had complications (Grade 1=5, Grade 2=5). Four of these patients had an emergency department visit, but no readmission. At a mean follow-up of 102 days, the zero-fragment and ≤ 2 mm residual fragment rates were 67.2% and 80.3%, respectively.

CONCLUSION(S): In our series we observed acceptable rates of residual fragments and post-operative complications after dusting technique for ureteroscopy. These data would suggest that dusting may be an attractive alternative to basket extraction thereby sparing patients possible morbidity associated with the routine use of ureteral access sheaths.

Status

CONFERENCE ABSTRACT

Institution

(Tracey, Gagin, Morhardt, Hollingsworth, Ghani) Ann ArborMIUnited States

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Elsevier Inc.

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584.

Is it necessary to remove stone actively when we perform retrograde intrarenal surgery?.

Lee J.N., Chung J.-W., Ha Y.-S., Choi S.H., Kim J.S., Kim G., Kim B.S., Kim H.T., Kim T.-H., Yoo E.S., Kwon T.G., Chung S.K., Kim B.W.

Embase

Journal of Urology. Conference: 2016 Annual Meeting of the American Urological Association, AUA. San Diego, CA United States. Conference Publication: (var.pagings). 195(4 SUPPL. 1) (ppe443), 2016. Date of Publication: April 2016.

[Conference Abstract]

AN: 72239772

INTRODUCTION AND OBJECTIVES: Recently, retrograde intrarenal surgery (RIRS) is widely being performed for treatment of renal stones with the development of instruments and technique, and its efficacy and safety has been proven in many studies. When we perform RIRS, we usually try to remove stone fragments actively using a stone basket but this procedure can increase the operation time and risk of ureter injury. Herein, we tried to verify the necessity of active stone removal during RIRS, based on our experiences.

METHOD(S): From January 2010 to January 2015, 254 patients underwent RIRS at our institution. We classified these patients into 2 groups according to the performance of active stone removal. Group A included the patients who underwent active stone removal using stone basket during RIRS (n=177), and group B included the patients who underwent dusting of stones without active stone removal during RIRS (n=77). Overall success rate, complications and the operation time were retrospectively compared between the two groups. Single surgeon performed all operations using 8.4F flexible ureteroscopy (Olympus, URF-P5) and 200 nm Holmium laser. The success was defined as complete stone free or presence of clinically insignificant residual fragments (<3mm) without any symptoms on non-contrast computed tomography (CT) after 1 month of procedure.

RESULT(S): There were no significant differences in mean age (56.2 vs. 58.5), male to female ratio (118/59 vs. 47/30), body mass index (24.5 vs. 25.0 kg/m²), mean stone size (11.1 vs. 11.2 mm) and bilaterality (37/177 vs. 12/77) between the two groups. There were also no significant differences in overall success rate, (76.3% vs 66.2%, p=0.067), operation time (83.7 vs 83.1 minutes, p=0.896), and complication rate (32.8% vs 31.2%, p=0.461) between both groups.

CONCLUSION(S): RIRS is considered to be effective and safe procedure for the management of small or intermediate-sized renal stones. Excellent success rate can be expected if we crush stone to small fragments enough to pass even without active stone removal.

Status

CONFERENCE ABSTRACT

Institution

(Lee, Chung, Ha, Choi, Kim, Kim, Kim, Kim, Yoo, Kwon, Chung, Kim) DaeguSouth Korea (Kim)
Gumi-siSouth Korea

Publisher

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585.

Office-based ureteroscopy for renal and ureteral stone treatment: A pioneer experience.

Jibara G., Marks J., Sablesak P., Glumi F.

Embase

Journal of Urology. Conference: 2016 Annual Meeting of the American Urological Association, AUA. San Diego, CA United States. Conference Publication: (var.pagings). 195(4 SUPPL. 1) (pp e442), 2016. Date of Publication: April 2016.

[Conference Abstract]

AN: 72239771

INTRODUCTION AND OBJECTIVES: Ureteroscopic stone management is a fundamental part of endourologic practice. Its safety and efficacy have long been established in hospitals and ambulatory surgical centers. The feasibility and safety of ureteroscopic stone treatment in an office-based surgical (OBS) setting has not been evaluated. In this study, we present our experience of ureteroscopic stone treatment in an office-based surgical center.

METHOD(S): Ureteroscopic stone treatments were done at five OBS centers that are accredited by The Accreditation Association for Ambulatory Health Care (AAAHC) in New York. Office-based ureteroscopy was not done on patients with morbid obesity (BMI ≥ 45) or an ASA (American

Society of Anesthesiologists) score of ≥ 4 . The stones size and/or location, however, did not influence the choice of the procedure setting (office vs. hospital). All patients were required to have a negative urine culture within one week of the procedure. Perioperative data were prospectively collected and analyzed for the purpose of this study.

RESULT(S): Between January 2014 and September 2015, a total of 187 ureteroscopic stone treatments were performed on 169 patients with documented urolithiasis. Ureteroscopy with or without ureteral dilation, laser lithotripsy, stone basketing, and stent placement was successfully completed in all patients with a median operative time of 28 minutes. All data are listed in table - 1- below. There were only two postoperative complications: A urinary tract infection that necessitated hospital admission within 24 hrs of the procedure. This patient did not establish a negative urine culture preoperatively The second complication was a transfer to the hospital to rule out aspiration after anesthesia completion. Aspiration was ruled out without hospital admission.

CONCLUSION(S): This is the first prospective study that demonstrates the safety, efficacy and time savings of ureteroscopic stone treatment in an office-based surgical setting. Perioperative complications can be reduced by following the same standard of care practices that are followed in hospitals. With the general push from the insurance industry towards performing surgical procedures in an outpatient setting, office-based surgical centers may become the future of ureteroscopic stone treatments. (Table Presented).

Status

CONFERENCE ABSTRACT

Institution

(Jibara, Glumi) BrooklynNYUnited States (Marks, Sablesak) New YorkNYUnited States

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Stone volume is best predictor of operative time required in retrograde intrarenal surgery for renal calculi: Implications for surgical planning and quality improvement.

Sorokin I., Cardona-Grau D., Rehfuss A., Birney A., Stavrakis C., Herr A., Leinwand G., Feustel P., White M.

Embase

Journal of Urology. Conference: 2016 Annual Meeting of the American Urological Association, AUA. San Diego, CA United States. Conference Publication: (var.pagings). 195(4 SUPPL. 1) (pp e437), 2016. Date of Publication: April 2016.

[Conference Abstract]

AN: 72239760

INTRODUCTION AND OBJECTIVES: Retrograde intrarenal surgery (RIRS) is highly successful at eliminating renal stones of various sizes and compositions. As urologists are taking on more complex procedures using RIRS, this has led to increase in operative (OR) times. Our objective was to determine the best predictor of operative time in patients undergoing RIRS.

METHOD(S): We retrospectively reviewed the records of patients undergoing unilateral RIRS for solitary stones over a 10 year time span. Stones were fragmented and actively extracted using a basket. Stone volume was calculated using the formula $p/6 \times L \times W \times H$. Variables potentially effecting OR time such as patient age, sex, BMI, lower pole stone location, volume, Hounsfield units (HU), composition, ureteral access sheath (UAS) use, and pre-operative stenting were collected. Multivariable linear and stepwise regression was used to evaluate predictors of OR time.

RESULT(S): There were 119 patients that met inclusion criteria. The median stone volume was 282.6 mm³ (IQR 150.7-644.7) and the mean OR time was 50 minutes (+/- 25.9 SD). UAS was used in 41% of the cases, pre-operative stents were placed in 30% of cases, and both were placed in 16% of cases. On univariate linear regression, stone volume had a moderate correlation with OR time ($y=38.2 + 0.022 \times \text{Stone volume}$, $r^2=0.363$, $p<0.01$). On multivariable stepwise regression, stone volume had the strongest impact on OR time, increasing time by 2.0 (SE 0.2, $p<0.01$) minutes for each 100mm³ increase in stone volume. UAS added 13.5 (SE 3.9, $p<0.01$) minutes and renal lower pole location added 9 minutes (SE 4.3, $p=0.03$) per 100mm³ in each case they were used. Pre-operative stenting, HU, calcium oxalate stone composition, sex, and age had no significant effect on operative time.

CONCLUSION(S): Amongst the main stone factors in RIRS, stone volume has the strongest impact on operative time. This can be used to predict the length of the procedure by roughly adding 2 minutes per 100mm³ increase in stone volume. The surgeons schedule in the operating

room can be rendered more efficient which means potential for quality improvement and patient satisfaction. (Figure presented).

Status

CONFERENCE ABSTRACT

Institution

(Sorokin, Cardona-Grau, Rehfuss, Birney, Stavrakis, Herr, Leinwand, Feustel, White)

AlbanyNYUnited States

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587.

Comparison of an electric pulse lithotripter to the holmium laser: Stone fragmentation efficiency and impact on flexible ureteroscope deflection and flow.

Kaplan A., Chen T., Shin R., Dale J., Cabrera F., Radvak D., Ackerman A., Sankin G., Zhong P., Scales Jr. C., Ferrandino M., Simmons N., Preminger G., Lipkin M.

Embase

Journal of Urology. Conference: 2016 Annual Meeting of the American Urological Association, AUA. San Diego, CA United States. Conference Publication: (var.pagings). 195(4 SUPPL. 1) (pp e408), 2016. Date of Publication: April 2016.

[Conference Abstract]

AN: 72239689

INTRODUCTION AND OBJECTIVES: A new intracorporeal lithotripter uses a nanosecond duration electrical discharge through a flexible coaxial probe to endoscopically fragment urinary

stones. This device was compared to a holmium laser with regards to stone fragmentation efficiency and their impact on flexible ureteroscope deflection and flow of irrigation.

METHOD(S): Using a custom bench model, stone fragmentation efficiency of the Nano-electric Pulse Lithotripter (NPL, Lithotech Group, Israel) was evaluated with a begostone (mixture 5:2) confined under 0.9% normal saline atop sequential mesh sieves. Two NPL probe sizes (2.0 and 3.6F) and two holmium laser fibers (200 mm and 365mm) were evaluated using 6mm begostones. Time to first break, time to complete break (all fragments <3mm), and overall fragment sizes were measured. Ureteroscope deflection was tested in 5 new 4th generation flexible ureteroscopes, with an empty channel followed by placement of a 2.0F NPL probe, a 2.4F NPL probe, a 200mm laser fiber, and a 1.9F wire basket. Ureteroscope irrigation flow was measured using normal saline at 100 cm, with an empty channel and then with a 2.0F NEP probe, a 200mm laser fiber, and a 1.9F wire basket.

RESULT(S): The 2.0F NPL showed improved stone fragmentation efficiency compared to the 200mm laser (86 mg/min vs. 52 mg/min, $p = 0.014$) as did the 3.6F NPL vs. the 365mm laser (173 mg/min vs. 80 mg/min, $p=0.05$). The NPL created more 1-2 mm fragments, while the laser created more dust (< 1 mm fragments); the difference was more pronounced between the larger NPL and laser probes. In the 5 ureteroscopes tested, ureteroscope deflection was reduced by an average of 3.75degree with the 2.0F NPL probe and 22.25degree with the 2.4F NLP probe (compared to 5.25degree with the laser and 2.75degree with the basket). Irrigation flow through the ureteroscope was 36.5 ml/min on average, and was reduced to 18.3 ml/min with the 200mm laser fiber, and to 6.3 ml/min with the 2.0F NEP probe.

CONCLUSION(S): The Nano-electric pulse lithotripter produces improved stone fragmentation efficiency as compared to the holmium laser. However the 2.0F and 2.4F NPL probes limit flow and the 2.4F probe limits ureteroscope deflection.

Status

CONFERENCE ABSTRACT

Institution

(Kaplan, Chen, Shin, Dale, Cabrera, Radvak, Ackerman, Sankin, Zhong, Scales Jr., Ferrandino, Simmons, Preminger, Lipkin) DurhamNCUnited States

Publisher

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588.

Dusting vs basketing during ureteroscopic lithotripsy: what is more efficacious? Final results from the edge research consortium.

Chew B., Shah O., Sur R., Knudsen B., Matlaga B., Eisner B., Krambeck A., Miller N., Monga M., Humphreys M.

Embase

Journal of Urology. Conference: 2016 Annual Meeting of the American Urological Association, AUA. San Diego, CA United States. Conference Publication: (var.pagings). 195(4 SUPPL. 1) (pp e407), 2016. Date of Publication: April 2016.

[Conference Abstract]

AN: 72239688

INTRODUCTION AND OBJECTIVES: There is controversy and very little evidence as to whether dusting stones is more efficacious than basket extraction of fragments during ureteroscopic lithotripsy. We prospectively followed patients to determine which method resulted in higher stone free rates.

METHOD(S): IRB approval was obtained across all sites and patients undergoing ureteroscopy for renal stones between 5-20mm were eligible. The Endourology Disease Group for Excellence (EDGE) includes high volume stone centers who had a well established dusting (3 sites) or basketing (5 sites) approach to intrarenal calculi participated in the study. Laser lithotripsy was utilized and patients were imaged within 3 months following ureteroscopy. The definition of stone free was no fragments of any size on KUB and ultrasound imaging. All patients were stented postoperatively and given an alpha blocker for 30 days.

RESULT(S): 152 patients were prospectively enrolled and followed for 3 months (N=82 Basketing, N=70 Dusting). Overall 47.7% were female and 52.3% were male. The stones were slightly larger in the dusting group (see table) and significantly more laser energy was used in the dusting group. There were fragments present in 7/51 (13.7%) in the basketing group compared to 20/49 (40.8%) of the dusting group. This equates to a stone free rate of 86.3% in the basketing group and 59.2% in the dusting group. Only 2 and 3 patients, respectively, from each group became symptomatic during 3 month follow-up. There was no difference in readmission to ER or

hospital between the groups (14.5%-dusting vs 14%-basketing) or in reintervention rates (2 patients in dusting, 3 in basketing). There were no differences between the groups in post-operative creatinine, or stone analyses.

CONCLUSION(S): In patients undergoing ureteroscopy for renal stones between 5-20 mm active extraction of all fragments with a basket produces a higher stone free rate (86.3%) than dusting the stone (59.2%). However, there was no difference in readmissions, reintervention rates, or patients becoming symptomatic from their residual fragments. Long-term follow-up of these patients will also determine impact of residual fragments in this group of patients. (Table presented).

Status

CONFERENCE ABSTRACT

Institution

(Chew) VancouverCanada (Shah) New YorkNYUnited States

(Sur) San DiegoCAUnited States

(Knudsen) ColumbusOHUnited States

(Matlaga) BaltimoreMDUnited States

(Eisner) BostonMAUnited States

(Krambeck) RochesterMNUnited States

(Miller) NashvilleTNUnited States

(Monga) ClevelandOHUnited States

(Humphreys) PhoenixAZUnited States

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Should stone removal be done after stone fragmentation in the management of upper urinary system stones?.

Alkan E., Turan M., Ozkanli A.O., Arpali E., Basar M.M., Acar O., Balbay M.D.

Embase

Journal of Urology. Conference: 2016 Annual Meeting of the American Urological Association, AUA. San Diego, CA United States. Conference Publication: (var.pagings). 195(4 SUPPL. 1) (pp e407), 2016. Date of Publication: April 2016.

[Conference Abstract]

AN: 72239687

INTRODUCTION AND OBJECTIVES: The aim of this study was to present whether or not the fragmented stones to be removed with the nitinol basket after laser fragmentation has any impact on the outcomes in the management of intrarenal stones.

METHOD(S): Patients with upper urinary system stones (stone burden between 10 mm and 40 mm) who underwent RIRS (retrograde intrarenal surgery) were included. Patients were allocated into two groups. Group 1 consisted of patients who underwent RIRS but no basket catheters were used. Whereas, basket catheters were used during RIRS on patients in Group 2 for stone removal after stone fragmentation. After ureteral access sheath was inserted into the ureter, the flexible ureterorenoscope was then advanced inside the access sheath up to the kidney. All stone pieces were fragmented roughly down to ≈ 3 mm in size. Stone fragments were removed with a nitinol basket according to surgeon's discretion. SFR (Stone free rates) was defined as no fragments or the presence of clinically insignificant residual fragments smaller than 4 mm in the urinary system.

RESULT(S): A total of 268 operations on 247 patients were included in the present study. Patients' demographics data and preoperative stone characteristics in each group are detailed in Table 1. Intraoperative and postoperative results between two groups are shown in Table 2. Mean operative time was significantly longer in group 2 ($p=0.001$). Use of nitinol basket (Group 2) for the removal of stone fragment following stone fragmentation increased the mean operative time for 15.4 ± 13.1 minutes on average compared to that in Group 1. The complication rates were not statistically different between the groups ($p=0.313$; $\chi^2=0.451$). Overall SFR were 87.8%, and 92.1% in groups 1, and 2, respectively ($p=0.164$; $\chi^2=1.406$).

CONCLUSION(S): Use of nitinol basket after stone fragmentation with holmium laser prolongs operative times, but it does not change SFR. Therefore use of nitinol basket after stone fragmentation intending stone free status is not realistic. (Table presented).

Status

CONFERENCE ABSTRACT

Institution

(Alkan, Turan, Ozkanli, Arpali, Basar, Acar, Balbay) IstanbulTurkey

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590.

RIRS: Dusting vs fragmentaion for renal stone <2cm.

Gamal W., Mmdouh A.

Embase

Journal of Urology. Conference: 2016 Annual Meeting of the American Urological Association, AUA. San Diego, CA United States. Conference Publication: (var.pagings). 195(4 SUPPL. 1) (pp e254), 2016. Date of Publication: April 2016.

[Conference Abstract]

AN: 72239334

INTRODUCTION AND OBJECTIVES: To compare the outcomes of stone dusting using low power high frequency holmium laser session and stone fragmentation using high power low frequency holmium laser session for renal stone < 2 cm using the flexible ureteroscopy.

METHOD(S): Between April 2012 and April 2015 forty six cases with unilateral renal stone < 2 cm (1.3 +/- 0.6 cm) were randomized into two groups. Group 1 (23 case) in which the stone was dusted using low power (0.2-0.4 Jouls) high frequency laser session (20-30 HZ) and group 2 (23 cases) in which the stone is fragmented using a high power (1-2 Jouls) low frequency (4-5 HZ) laser session. The patient age was ranged 23 - 56 (means 37 +/- 3 years). The hardness of the stone using the house field unit were evaluated. The stone free rate, the operative time, the use of access sheath and any intraoperative complication were evaluated. The number of FURS entry and reentry were also evaluated.

RESULT(S): The stones were radiopaque in 38 cases and radiolucent in 8 cases. The housefield unit for group 1 was 790 +/- 30 and was 820 +/- 26 in group 2 which is statistically non-significant ($p = 0.19$). All the stones were successfully approached. The stone free rate was 86% in group 1 and 89% in group 2. NO ancillary maneuver or repeated session was needed in any case. The operative time was 57 +/- 9 minutes in group 1 and 73 +/- 13 minutes in group 2 (statistically significant $p=0.001$). No access sheath was used in group 1 but used in all cases of group 2. Single ureteroscopic entry were recorded in group 1 and multiple entries in group 2 (6 +/- 2) times per case. No reported intraoperative complications were in group1 but 3 cases of entrapped Dormia in the upper ureter were recorded in group 2 in which the Dormia was successfully cut to extract it. DJ stent were inserted in 3 cases of group 1 and in all cases of group 2.

CONCLUSION(S): RIRS holmium Yag laser stone dusting and fragmentation for renal stone < 2 cm have the same success rate. Stone dusting carries the advantages of significant lower operative time, lower intraoperative complication rate and less need to postoperative DJ stent.

Status

CONFERENCE ABSTRACT

Institution

(Gamal, Mmdouh) SohagEgypt

Publisher

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Year of Publication

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591.

Evolution of the robotic assisted retrograde intra-renal surgery (RA-RIRS) with Avicenna Roboflex to improve functions and user friendliness.

Patel A., Rassweiler J., Klein J., Traxer O., Al Zarooni A., Geavlete P., Tokatli N.Z., Giusti G., Tugcu V., Imamoglu M.A., Muslumanoglu A.Y., Saglam R.

Embase

European Urology, Supplements. Conference: 31st Annual Congress of the European Association of Urology, EAU16. Munich Germany. Conference Publication: (var.pagings). 15(3) (pp eV77+eV77a), 2016. Date of Publication: March 2016.

[Conference Abstract]

AN: 72228855

INTRODUCTION & OBJECTIVES: Saglam R et al, developed the first robotic manipulator which can remotely control all functions of commercially available flexible endoscopes. Advantages of this new robotic master slave device for the treatment of kidney stones include improved precision with enhancement of stone fragmentation and dusting, while reducing operator fatigue and radiation exposure, and prolonging endoscope longevity through torque elimination. To increase the Avicenna Roboflex's surgical user friendliness and functions, continuous development was necessary. **MATERIAL & METHODS:** All commercially available flexible Uretero-Renoscopes (fURS), can be used, each with customized holders. The surgeon inserts a suitable ureteral access sheath, and the technician moves the Roboflex manipulator to the docking position. The fURS is introduced into the ureteral lumen through the access sheath manually, the instrument hand piece is coupled and locked into the special adaptor of the robotic arm. The irrigation fluid is prepared by connecting custom disposable tubing, engaging it into the irrigation pump. Then the surgeon sits on the and adjusts the ergonomic console chair to view the control panel and use all functions, and stores this position into the system memory. The fURS is manipulated with two joysticks. The right joystick enables precise deflection with a new integrated thumb-wheel. The precision of the deflection mechanism is very important. Avicenna Roboflex allows the surgeon to control the endoscope tip by choosing the scaling precision of the thumb wheel. The left joystick stick enables rotation and in-and-out movements of the fURS. The speed of in-and-out movement adjusted from the console screen to achieve better joystick control according to user's preference. By using precise left and right control joy-sticks, the fURS is advanced into the kidney, Once the endoscope tip reaches the renal pelvis, the calyceal system is navigated to find the stone(s). The laser fiber actuator holding the laser fiber is inserted into the working channel of fURS. Once the power button is pressed, the tip of the laser fiber is automatically advanced to the nearest firing position. Further advancement of fiber can be performed by the operator using the "in-out" controls. The foot pedals of laser and fluoroscopy devices are remotely controlled with the new universal remote console pedal control unit. If high respiratory rate or excursion makes stone fragmentation difficult However, an easier way with a simple, pump inflatable balloon compression device works equally well. It may be necessary to

inflate the balloon under the compression belt until the respiration movement is ideal for safe work, after consulting the anaesthetist for safety.

CONCLUSION(S): Since inception, the incremental improvements incorporated into the Avicenna Roboflex console described above, allows better operator control of key aspects of the surgical environment and procedural aspects, releasing expensive staffing resources (cost savings), while improving on both safety and efficacy for the patients. Together with elimination of radiation safety protocols and better comfort for the operator when treating large renal stones, efficiency can be improved especially when multiple such procedures are planned in a day's operating.

Status

CONFERENCE ABSTRACT

Institution

(Patel) Barts Health Nhs Trust, Dept. of Urology, London, United Kingdom (Rassweiler) SLK-Kliniken Heilbronn GmbH, Dept. of Urology, Heilbronn, Germany

(Traxer) Tenon University Hospital, Dept. of Urology, Paris, France

(Al Zarooni) Sheikh Khalifa General Hospital, Dept. of Urology, Umm Al Quwain, United Arab Emirates

(Geavlete) Saint John Emergency Clinical Hospital, Dept. of Urology, Bucharest, Romania

(Saglam) Medicana International Ankara Hospital, Dept. of Urology, Ankara, Turkey

(Klein) Ulm University Clinic, Dept. of Urology, Ulm, Germany

(Tugcu) Bakirkoy Dr. Sadi Konuk Training and Research Hospital, Dept. of Urology, Istanbul, Turkey

(Imamoglu) Diskapi Yildirim Beyazit Training and Research Hospital, Dept. of Urology, Ankara, Turkey

(Muslumanoglu) Bagcilar Training and Research Hospital, Dept. of Urology, Istanbul, Turkey

(Giusti) San Raffaele Hospital, Dept. of Urology, Milan, Italy

(Tokatli) Cankaya Private Doruk Hospital, Dept. of Urology, Ankara, Turkey

Publisher

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592.

Differences between high-frequency and long-pulse laser lithotripsy-a practical explanation and an objective evaluation.

Kronenberg P., Traxer O.

Embase

European Urology, Supplements. Conference: 31st Annual Congress of the European Association of Urology, EAU16. Munich Germany. Conference Publication: (var.pagings). 15(3) (pp eV74), 2016. Date of Publication: March 2016.

[Conference Abstract]

AN: 72228852

INTRODUCTION & OBJECTIVES: Lithotripters allowing high-frequency and long-pulse lithotripsy are fairly new techniques used in renal stone treatment. They offer several advantages over standard lithotripsy but their comparative ablation efficiencies and relationships are still unclear.

The authors decided to explain these lithotripsy modes in a straightforward manner, as well as to objectively evaluate and assess their individual lithotripsy performances.

MATERIAL & METHODS: The authors use a video to illustrate the differences between standard, high-frequency, and long-pulse lithotripsy. They discuss some of their individual features, such as stone fragment size and stone dusting. Afterwards a precise comparison of highfrequency and long-pulse lithotripsy experiments was undertaken using an automated laser fragmentation testing system. Artificial stones made of soft and hard stone material (plaster of Paris and BegoStone), as well as standard 273-mum core laser fibers (SureFlex from AMSTM and MF272STs from RocamedTM) were used in the experiments. Lithotripter settings for high-frequency experiments were set at 40 Hz and at a total power level of 8, 16, 24, and 32W, while long-pulse experiments were done at 15Hz with a total power level of 7.5, 15, and 22.5W. The lithotripters used were the VersaPulse Powersuite 100W from LumenisTM, and the MH01-ROCA FTS30W from RocamedTM. Additional high-frequency experiments were conducted with a ball-tipped laser fiber, given the increasing trend of using high-frequency with such fibers (AccuTrac from Boston ScientificTM). Ablation volumes and laser fiber tip degradation were evaluated.

RESULT(S): Long-pulse lithotripsy accomplished higher ablation volumes than high-frequency lithotripsy ($p<0.00001$), with ablation volumes on average over 50% higher, reaching occasionally even a 150% higher volume. Even in comparison to high-frequency experiments done with the ball-tipped fiber, long-pulse lithotripsy experiments maintained a better and higher performance

($p < 0.0001$). The ball-tipped fiber showed extensive fiber tip degradation at higher energy levels, which might explain the performance drop observed at those same power levels.

CONCLUSION(S): Long-pulse lithotripsy performed better than high-frequency lithotripsy. Within the range of settings evaluated, long-pulse laser lithotripters, not capable of high-power high-frequency lithotripsy, can still compete with the more heavy-weight lithotripters, capable of very high-frequency lithotripsy. The ball-tipped fiber wasn't more ablative than a standard fiber for high-frequency lithotripsy.

Status

CONFERENCE ABSTRACT

Institution

(Kronenberg) Hospital Prof. Doutor Fernando Fonseca, Dept. of Urology, Amadora, Portugal

(Traxer) Universite Paris 6 Pierre Et Marie Curie, Hopital Tenon, Dept. of Urology, Paris, France

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593.

RIRS in lower calyx stones with infundibular stenosis.

Cepeda M., Amon J.H., Tapia A.M., Mainez A., De La Cruz B., Martinez-Sagarra J.M.

Embase

European Urology, Supplements. Conference: 31st Annual Congress of the European Association of Urology, EAU16. Munich Germany. Conference Publication: (var.pagings). 15(3) (pp eV73), 2016. Date of Publication: March 2016.

[Conference Abstract]

AN: 72228851

INTRODUCTION & OBJECTIVES: The treatment of choice recommended by the European Guidelines of Urolithiasis of lower calyx stone larger than 2 cm is percutaneous nephrolithotomy. However, in selected cases, retrograde intrarenal surgery (RIRS) may be an option. The aim of the video is to show the RIRS performed on a patient with large load lower calyx stones and infundibular stenosis. **MATERIAL & METHODS:** A 40-year-old female, without any outstanding medical history, complained of lumbar pain. The CT scan shows a large load of stones over 3 cm in the lower calyx. RIRS is the approach chosen. An infundibular stenosis is located in the lower calyx. A balloon catheter is used to treat the stenosis. This catheter reaches 12 Fr. dilation. Once the stenosis is open, the stones are identified. The strategy is to remove the stones one by one. The smaller ones directly through the access sheath. The bigger ones are displaced to the upper calyx to be treated later. A 265 micron fiber Holmium laser is introduced. The settings of the laser are: Long pulse, 0.8 J and 15 Hz. The aim is to pulverize the stones as much as possible. When there are residual fragments impossible to treat one by one, the popcorn technique is in order. To do so, the laser settings are changed: Short pulse, 20 Hz and 0.5 J. After a few minutes, most of the residual fragments have become basically dust. The lower calyx is stone free, but there are still a few fragments to deal with in the upper calyx. In order to remove these fragments and to prevent a re-accumulation in the lower calyx, the clot technique is carried out. A blood sample from the patient is injected through the ureteroscope, splashing it all over the upper calyx. After a few minutes, the fragments are stuck in the clot and can be removed with a basket. A new exploration shows that there is a minimum amount of dust left and no significant residues. **RESULT(S):** Surgical time was 120 min. There were no complications either during or after procedure and the patient was discharged the next day. The CT scan 1 month later corroborated the absence of residual fragments, even in the lower calyx. **CONCLUSION(S):** The treatment of lower calyx stones with infundibular stenosis is complex. Although RIRS in these cases is challenging, this technique is effective to solve the problem with a minimally invasive approach.

Status

CONFERENCE ABSTRACT

Institution

(Cepeda, Amon, Tapia, Mainez, De La Cruz, Martinez-Sagarra) Rio Hortega University Hospital,
Dept. of Urology, Valladolid, Spain

Publisher

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594.

RIRS: Dusting vs fragmentation for renal stone <2cm.

Gamal Saad W., Mmdouh A.

Embase

European Urology, Supplements. Conference: 31st Annual Congress of the European Association of Urology, EAU16. Munich Germany. Conference Publication: (var.pagings). 15(3) (pp e1033), 2016. Date of Publication: March 2016.

[Conference Abstract]

AN: 72228648

INTRODUCTION & OBJECTIVES: To compare the outcomes of stone dusting using low power high frequency holmium laser session and stone fragmentation using high power low frequency holmium laser session for renal stone < 2 cm using the flexible ureteroscopy. **MATERIAL & METHODS:** Between April 2012 and April 2015 forty six cases with unilateral renal stone < 2 cm (1.3+- 0.6 cm) were randomized into two groups. Group 1 (23 case) in which the stones were dusted using low power (0.2-0.4 Jouls) high frequency laser session(20-30 HZ) and group 2 (23 cases) in which the stones were fragmented using a high power (1-2 Jouls) low frequency (4-5 HZ) laser session. The patient age was ranged 23 - 56 (means 37+-3 years). The hardness of the stone using the house field unit were evaluated. The stone free rate, the operative time, the use of access sheath and any intraoperative complication were evaluated. The number of FURS entry and reentry were also evaluated.

RESULT(S): The stones were radiopaque in 38 cases and radiolucent in 8 cases. The housefield unit for group 1 was 790+-30 and was 820+- 26 in group 2 which is statistically non-significant (p = 0.19). All the stones were successfully approached. The stone free rate was 86% in group 1 and 89% in group 2. NO ancillary maneuver or repeated session was needed in any case. The operative time was 57+- 9 minutes in group 1 and 73+- 13 minutes in group 2 (statistically significant p=0.001). No access sheath was used in group 1 but used in all cases of group 2. Single ureteroscopic entry was recorded in group 1 and multiple entries in group 2 (6+- 2) times

per case. No reported intraoperative complications were in group 1 but 3 cases of entrapped dormia in the upper ureter were recorded in group 2 in which the dormia was successfully cut to extract it. DJ stent were inserted in 3 cases of group 1 and in all cases of group 2.

CONCLUSION(S): RIRS holmium Yag laser stone dusting and fragmentation for renal stone < 2 cm have the same success rate. Stone dusting carries the advantages of significant lower operative time, lower intraoperative complication rate and less need to postoperative DJ stent.

Status

CONFERENCE ABSTRACT

Institution

(Gamal Saad, Mmdouh) Sohag University Hospital, Dept. of Urology, Sohag, Egypt

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595.

Prospective European multicentre clinical results of kidney stone treatment using the Avicenna Roboflex URS robot.

Klein J.-T., Fiedler M., Kabuki A.S., Saglam R., Rassweiler J.

Embase

European Urology, Supplements. Conference: 31st Annual Congress of the European Association of Urology, EAU16. Munich Germany. Conference Publication: (var.pagings). 15(3) (pp e1032), 2016. Date of Publication: March 2016.

[Conference Abstract]

AN: 72228647

INTRODUCTION & OBJECTIVES: Pre- and intraoperative data from all patients who underwent robotic retrograde intrarenal stonesurgery (RIRS) using the Avicenna Roboflex system (Elmed, Turkey) at the two european robotic stone centers in Heilbronn (Germany) & Ankara (Turkey) was recorded prospectively and analysed. **MATERIAL & METHODS:** After the successful clinical introduction of the Roboflex system 2013 and 2014 at two european robRIRS Centers the data of patients (n=266) who underwent robotic retrograde intrarenal stone treatment (robRIRS) with the system was prospectively recorded and analysed **RESULTS:** Patientdata: n=266 (=90, =176), age=55a, min 25a, max 76a, BMI: 29,1; min 20,6, max 43,3; ASA: 2,3, UTI preop: 14%, Stone localisation: right: 118x, left 148x, Number of stones/kidney: 1,8 min:1, max 6; stone load: 1620 mm3, min 98, max 10600; prestenet: 43%. Intraop data: number of surgeons: 5, OR-time: 96min; min 58, max 193; access sheath used: 100%, Digital flex Scope with chip on the tip technology, stonetreatment: laserdesintegration: 92%, fragment extraction using dormia basket: 42%, console time: 65 min, min 16, max 174, stoneclearance rate: 25 mm3/min, min: 9, max 101. postop: DJ 44%, Complications intra-op: 0,7% technical failure of the system, conventionell flex URS was carried out. Clavien 4a: 0,4% due to severe sepsis. Stone migration: 20%, x-ray parameters: time 02:30min, 297 cGy*cm2. Robottimes: Preparation&Set up time preop: 04:30 min, min 3, max 8, docking time 4min, min1, max 29, console time to stonecontact: 4 min, min 1, max 12.

CONCLUSION(S): All technical surgical aspects of flexible URS in means of the diagnostic work up and the stone surgery (RIRS) has been completely and successfully performed using the robot system. The robot provides a non exhausting environment for the surgeon especially during long surgeries with a reduction of the radiation exposure of the surgeon during the procedure.

Stonetreatment using the URS robot system can be safely performed. The clinical integration of the system in every day routine can be managed without difficulties within a short learning curve.

Status

CONFERENCE ABSTRACT

Institution

(Klein) Universitätsklinikum Ulm, Dept. of Urology and Pediatric Urology, Ulm, Germany (Fiedler, Rassweiler) SLK-Klinikum Am Gesundbrunnen, Dept. of Urology and Pediatric Urology, Heilbronn, Germany

(Saglam) Saglams Hospital, Dept. of Urology and Pediatric Urology, Ankara, Turkey

(Kabuki) Medicana International Hospital, Dept. of Urology, Ankara, Turkey

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596.

Results from a comparative multicentric study of Xenx™, the latest ureteric occlusion device with guide-wire utility.

Sanguedolce F., Montanari E., Macchione N., Hruby S., Papatsoris A., Kallidonis P., Villa L., Honeck P., Traxer O., Greco F.

Embase

European Urology, Supplements. Conference: 31st Annual Congress of the European Association of Urology, EAU16. Munich Germany. Conference Publication: (var.pagings). 15(3) (pp e943+e943a), 2016. Date of Publication: March 2016.

[Conference Abstract]

AN: 72228562

INTRODUCTION & OBJECTIVES: This is a prospective comparative multi-centric study to evaluate the performance of XenX - a dual purpose device designed as a safety guide-wire (0.038 inches) with a built-in stone retention capability for the prevention of stone migration during ureteroscopy. **MATERIAL & METHODS:** Between March and January 2015, 86 patients were recruited across 8 European Tertiary Referral Centres for urinary stone disease and underwent ureteroscopy and laser fragmentation (URS); of the 45 undergoing URS with the aid of XenX 4 (10%) were excluded because of inability in deploying the braid for the retention of fragments. The remaining 41 cases were matched with other 41 patients randomly selected from another cohort undergoing standard URS. Demographics, complication rates and surgical outcomes were prospectively. Inclusion criteria were: Unilateral ureteric stone, single or multiple stones, 0.5 to 1.5 cm in maximum diameter. Main exclusion criteria were: Concomitant ipsilateral renal stone, stone ≥ 1.5 cm, presence of known ureteric stricture. Stone-free condition was defined as residual fragments ≤ 2 mm and was assessed intraoperatively with retrograde pyelogram, and at 4-week follow up with US KUB, X ray KUB and/or CT KUB according to Centres' policy. A Likert-like 5-grade scoring system (1= very bad; 5= very good) was used for subjective evaluation of XenX properties, such as pushability, ease of deployment, full expansion

and cooptation to ureter walls, kink resistance, stone retention capabilities, device retrieval, ease of stenting, device radiopacity, and ease of basketing. Cost analysis was performed by comparing weighted mean costs of the procedures in each group.

RESULT(S): Demographics, complication rates and surgical outcomes are summarised in the table, including comparative features with the control group. Median operators' evaluations for XenX were "Good" (4 out of 5) for most of the domains surveyed, except for "Ease of Basketing" (2/5) and "Advancement of double J stent" (3/5). Cost analysis revealed a higher cost of the procedures with XenX (182.15 vs 162.5 GBP) even though its use spared the costs associated to ancillary procedures and stent removals, which were significantly more frequent in the control group (s. Table).

CONCLUSION(S): XenX is a safe and effective device for the treatment of ureteric stones; its utility is likely to be more marked in the case of stones of the upper tract of the ureter. Significant improvement are needed from the manufacturer to improve ease of use of the device and to optimise the dual-purpose utility; on the other side, XenX may reduce the risk for the need of auxiliary procedures which contributes to increase costs related to the stone-clearance. XenX may reduce the need of the insertion of a JJ stent, preventing bothersome symptoms for patients and further cutting extra costs. (Table Presented).

Status

CONFERENCE ABSTRACT

Institution

(Sanguedolce) King's College Hospital, Dept. of Urology, London, United Kingdom (Montanari, Macchione) San Paolo Hospital, Dept. of Urology, Milan, Italy

(Hruby) Paracelsus Medical University, Dept. of Urology, Salzburg, Austria

(Papatsoris) Sismanoglio General Hospital, Dept. of Urology, Athens, Greece

(Kallidonis) Patras University Hospital, Dept. of Urology, Patras, Greece

(Villa, Traxer) Tenon University Hospital, Dept. of Urology, Paris, France

(Honeck) Sindelfingen-Boblingen University Hospital, Dept. of Urology, Sindelfingen-Boblingen, Germany

(Greco) Romolo Hospital, Dept. of Urology, Rocca Di Neto, Italy

Publisher

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597.

Stone volume is best predictor of operative time required in retrograde intrarenal surgery for renal calculi: implications for surgical planning and quality improvement.

Sorokin I., Cardona-Grau D.K., Rehfuss A., Birney A., Stavrakis C., Leinwand G., Herr A., Feustel P.J., White M.D.

Embase

Urolithiasis. 44(6) (pp 545-550), 2016. Date of Publication: 01 Nov 2016.

[Article]

AN: 609367352

Retrograde intrarenal surgery (RIRS) is highly successful at eliminating renal stones of various sizes and compositions. As urologists are taking on more complex procedures using RIRS, this has led to an increase in operative (OR) times. Our objective was to determine the best predictor of OR time in patients undergoing RIRS. We retrospectively reviewed the records of patients undergoing unilateral RIRS for solitary stones over a 10 year time span. Stones were fragmented and actively extracted using a basket. Variables potentially affecting OR time such as patient age, sex, BMI, lower pole stone location, volume, Hounsfield units (HU), composition, ureteral access sheath (UAS) use, and pre-operative stenting were collected. Multivariable linear and stepwise regression was used to evaluate the predictors of OR time. There were 118 patients that met inclusion criteria. The median stone volume was 282.6 mm³ (IQR 150.7-644.7) and the mean OR time was 50 min (+/-25.9 SD). On univariate linear regression, stone volume had a moderate correlation with OR time ($y = 0.022x + 38.2$, $r^2 = 0.363$, $p < 0.01$). On multivariable stepwise regression, stone volume had the strongest impact on OR time, increasing time by 2.0 min for each 100 mm³ increase in stone volume ($p < 0.001$). UAS added 13.5 (SE 3.9, $p = 0.001$) minutes and renal lower pole location added 9 min (SE 4.3, $p = 0.03$) in each case they were used. Pre-operative stenting, HU, calcium oxalate stone composition, sex, and age had no significant effect on OR time. Amongst the main stone factors in RIRS, stone volume has the strongest impact on operative time. This can be used to predict the length of the procedure by roughly adding 2 min per 100 mm³ increase in stone volume.

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Status

Embase

Institution

(Sorokin, Cardona-Grau, Rehfuss, Leinwand, White) Division of Urology, Albany Medical College, 43 New Scotland Ave, Albany, NY 12208, United States (Birney, Stavrakis, Herr) Department of Radiology, Albany Medical College, Albany, NY, United States

(Feustel) Center for Neuropharmacology and Neuroscience, Albany Medical College, Albany, NY, United States

(White) Urological Institute of Northeastern New York, Albany, NY, United States

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Year of Publication

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598.

Clearance rates of residual stone fragments and dusts after endoscopic lithotripsy procedures using a holmium laser: 2-year follow-up results.

Kang M., Son H., Jeong H., Cho M.C., Cho S.Y.

Embase

World journal of urology. 34(11) (pp 1591-1597), 2016. Date of Publication: 01 Nov 2016.

[Article]

AN: 615777792

PURPOSE: To investigate the spontaneous clearance rates of remnant particles following miniaturized percutaneous nephrolithotomy (mini-PCNL) and retrograde intrarenal surgery

(RIRS). METHODS: Among 624 patients who underwent mini-PCNL or RIRS at our institution from 2011 to 2015, we collected data of 247 patients with 2 years of follow-up. Of these, we included 148 patients with unilateral renal stones between 10 and 30 mm, as well as remnant particles after surgery. The size criteria of dusts and residual fragments (RFs) were, respectively, <1 and <3 mm.

RESULTS: After excluding 22 patients, 126 patients (RFs = 21, dusts = 98, and both RFs and dusts = 7) were analyzed. Mean age was 56.5 (+/-14.4) years, and mean stone size was 19.5 (+/-12.5) mm. The mean follow-up period was 18.5 (+/-12.9) months. In patients whose remnant particles were naturally eliminated following lithotripsy, the mean stone passage time was 9.0 (+/-9.3) months in the dusts and 13.9 (+/-11.1) months in the RFs groups (P = 0.135). Remnant particles disappeared in 42 out of 105 patients (40.0 %) in dusts and 7 out of 28 patients (25.0 %) in RFs groups (P = 0.187). The size of dusts and RFs increased, respectively, in 18.1 % (19/105) and 28.6 % (8/28) of patients with remnant particles during the follow-up period.

CONCLUSIONS: The presence of dusts and RFs was poor prognostic factors in patients underwent renal stone surgery using a holmium laser. Complete residual stone removal by using a basket or dusts eradication by irrigation for an adequate time during surgery can be a good surgical strategy.

PMC Identifier

27000560 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=27000560>]

Author NameID

Cho, Sung Yong; ORCID: <http://orcid.org/0000-0001-9271-6951>

Institution

(Kang) Department of Urology, Seoul National University Hospital, 101 Daehak-ro, Jongno-gu, Seoul, 110-744, Republic of Korea (Son, Jeong, Cho) Department of Urology, Seoul National University Boramae Medical Center, Sindaebang 2-dong, 395, Dongjak-gu, Seoul, 156-707, Republic of Korea

(Cho) Department of Urology, Seoul National University Boramae Medical Center, Sindaebang 2-dong, 395, Dongjak-gu, Seoul, 156-707, Republic of Korea. kmoretry@daum.net

Year of Publication

2016

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599.

Use of XenXTM, the latest ureteric occlusion device with guide wire utility: results from a prospective multicentric comparative study.

Sanguedolce F., Montanari E., Alvarez-Maestro M., Macchione N., Hruby S., Papatsoris A., Kallidonis P., Villa L., Honeck P., Traxer O., Greco F.

Embase

World journal of urology. 34(11) (pp 1583-1589), 2016. Date of Publication: 01 Nov 2016.

[Article]

AN: 615777555

PURPOSE: This is a prospective multicentric comparative study evaluating the performance of XenX-a new dual-purpose device for the prevention of stone fragments migration during ureteroscopic lithotripsy (URS). **METHODS:** Between March 2014 and January 2015, 41 patients undertaking URS + XenX were matched with 41 patients undergoing standard URS. Patients included had unilateral ureteric stone(s) of 0.5-1.5 cm in maximum size. Demographics, complication rates and surgical outcomes were recorded for comparison. A Likert-like 5-grade scoring system was used for surgeons' evaluation of XenX properties. Cost analysis was performed by comparing weighted mean costs of the relevant procedures.

RESULTS: Patients' characteristics between the two groups were comparable. Lasering time was longer for XenX group (13.59 vs. 5.17 min; $p = 0.0001$) whilst use of basket and need of JJ stent insertion was more frequent in control group (19.5 vs. 97.6 %; $p = 0.0001$ and 22 vs. 35 %; $p = 0.001$, respectively). Intra-operative SFR was significantly higher for XenX group (100 vs. 85.4 %; $p = 0.0001$), but not at 4-week follow-up, after ancillary procedures were needed in 17.1 % of the control group. Surgeons' evaluations for XenX were suboptimal for "Ease of Basketing" (2/5) and "Advancement of double J stent" (3/5). The use of XenX increased costs of procedures, but spared the costs associated to ancillary procedures and stent removals.

CONCLUSIONS: XenX confirmed to be a safe and effective device especially for the treatment of upper ureteric tract stones; moreover, XenX may reduce the risk for the need of auxiliary procedures and for the insertion of a JJ stent.

PMC Identifier

26993821 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=26993821>]

Institution

(Sanguedolce) King's College Hospital, NHS Foundation Trust, London, UK.
fsangue@hotmail.com (Sanguedolce) Northampton General Hospital, Northampton, UK.
fsangue@hotmail.com
(Montanari, Macchione) San Paolo Hospital, University of Milano, Milan, Italy
(Alvarez-Maestro) Infanta Sofia University Hospital, Madrid, Spain
(Hruby) Paracelsus Medical University Salzburg, Salzburg, Austria
(Papatsoris) Sismanoglio General Hospital, Athens, Greece
(Kallidonis, Traxer) Patras University Hospital, Patras, Greece
(Villa) Tenon University Hospital, Paris, France
(Honeck) Sindelfingen-Boblingen Clinic, Boblingen, Germany
(Greco) Romolo Hospital, Rocca di Neto, Italy
Year of Publication
2016

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600.

A comparison between an in vitro ureteroscopic stone size estimation and the stone size measurement with the help of a scale on stone baskets.

Cordes J., Teske L., Nguyen F., Pinkowski W., Sievert K.-D., Vonthein R.

Embase

World journal of urology. 34(9) (pp 1303-1309), 2016. Date of Publication: 01 Sep 2016.

[Article]

AN: 615597265

INTRODUCTION: Endoscopic treatment of ureter stones and renal calculi relies on the surgeon's estimation of the stone size for both lithotripsy and removal of stones or stone fragments. We therefore compared precision and reliability of the endoscopic estimation of stone size by the surgeon with measurements on a scale on a stone basket. MATERIALS AND METHODS: Two

surgeons (one high experienced and one low experienced) first estimated, then measured the size of 12 stones differing in size and color using different stone baskets (2.5, 3.0, 4.0 Ch) each via a semirigid renoscope in an artificial ureter under water repeatedly on two different days. All together, we had 288 measurements and 288 estimations.

RESULTS: On the whole, the accuracy of the estimation diminished with bigger stones. There is an increasing underestimation with increasing stone size. Factors, which significantly influence the estimation, are the operating surgeon, the color of the stone, the time sequence, and the size of the closed basket, which was held beside the stone. The accuracy of the measurement of the stone baskets is not as good as the estimation. The small 2.5-Ch basket is the most accurate in measuring big stones (>6 mm), the 3.5 Ch in intermediate stones (3-6 mm), the big basket (4.0 Ch) in small stones (<3 mm).

CONCLUSION: This first attempt at validation of a scale on stone baskets shows different results for each basket which could be systematically improved. Until now, the estimation of the surgeons is better than the measurement, but it is also influenced by factors like the surgeon or the color of the stone.

PMC Identifier

26847338 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=26847338>]

Author NameID

Cordes, Jens; ORCID: <http://orcid.org/0000-0003-3758-2078>

Institution

(Cordes, Teske, Nguyen, Sievert) Urology Clinic and Policlinic, University Medical Center Schleswig-Holstein (UKSH), Campus Lubeck, University of Lubeck, Ratzeburger Allee 160, 23538, Lubeck, Germany (Pinkowski) Urotech GmbH, Achenmuehle, Rohrdorf, Germany (Vonthein) Institute of Medical Biometry and Statistics, University Medical Center Schleswig-Holstein (UKSH), Campus Lubeck, University of Lubeck, Lubeck, Germany (Vonthein) Center for Clinical Trials, University of Lubeck, Lubeck, Germany

Year of Publication

2016

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601.

Laparoscopic Ureterolithotomy with Concomitant Pyelolithotomy Using Flexible Cystoscope.

Sahin S., Resorlu B., Atar F.A., Eksi M., Sener N.C., Tugcu V.

Embase

Urology journal. 13(5) (pp 2833-2836), 2016. Date of Publication: 10 Oct 2016.

[Article]

AN: 615596635

PURPOSE: To report and discuss the treatment of ipsilateral upper ureteral and renal stones by laparoscopic ureterolithotomy with concomitant pyelolithotomy using flexible cystoscope.

MATERIALS AND METHODS: A total of 19 patients (14 men and 5 women) underwent laparoscopic retroperitoneal ureterolithotomy with concomitant pyelolithotomy using flexible cystoscope through the ureterotomy site. The mean age of the patients was 37.9 (22-61) years. Stones were on the right side in 12, on the left side in 7, and multiple in 6 patients. All ureteral stones were located in the upper ureter. Most renal stones were in the pelvis or in the calices.

RESULTS: All procedures were completed laparoscopically without conversion to open surgery. Mean operation duration was 86.5 (range: 80-93) minutes, thus operation duration was prolonged by a mean of 24.4 minutes in patients with concomitant stone extraction. Fifteen cases were treated using flexible cystoscope and a nitinol basket; in the remaining four cases holmium laser lithotripsy was performed. Complete stone clearance was confirmed by postoperative imaging in all patients.

CONCLUSIONS: Laparoscopic ureterolithotomy with concomitant pyelolithotomy is a feasible and effective technique for patients with large ureteral stone and low renal stone burden.

PMC Identifier

27734424 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=27734424>]

Institution

(Sahin, Atar, Eksi, Sener, Tugcu) Bakirkoy Dr. Sadi Konuk Training and Research Hospital,
Department of Urology, Istanbul, Turkey (Resorlu) Department of Urology, Canakkale Onsekiz
Mart University, Faculty of Medicine, Canakkale, Turkey

Year of Publication

2016

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602.

Flexible Ureteroscopic Management of Horseshoe Kidney Renal Calculi.

Ding J., Huang Y., Gu S., Chen Y., Peng J., Bai Q., Ye M., Qi J.

Embase

International braz j urol : official journal of the Brazilian Society of Urology. 41(4) (pp 683-689), 2015. Date of Publication: 01 Jul 2015.

[Article]

AN: 609597408

PURPOSE: To evaluate the clinical efficacy of flexible ureteroscope (F-URS) combined with holmium laser lithotripter in treating renal calculi in horseshoe kidney. **MATERIALS AND METHODS:** From November 2010 to December 2013, the medical history and charts of sixteen patients (mean age 42.9 +/- 11.6 years, range 26-66 years), including 13 males and 3 females were analyzed retrospectively. Mean stone burden was 29 +/- 8 mm (range 17-42 mm²). Mean stone digitized surface area (DSA) was 321 +/- 94 mm² (range 180-538 mm²). Under spinal anesthesia in a modified lithotomy position with the head down, rigid ureteroscope was placed firstly into the ureter to reach the level of the pelvis, a zebra guide wire was inserted and following the removal of the rigid ureteroscope, an ureteral access sheath was positioned along the guide wire, then passed the URF P-5 flexible ureteroscope into the renal cavities over the guidewire. After locating the stones, holmium laser lithotripsy was performed.

RESULTS: The average operative time was 92 +/- 16 minutes (range 74-127 min.). No major complications were encountered. Ten patients obtained stone-free status with one session, four obtained stone-free status after two sessions. Single session stone-free rate was 62.5%, overall stone-free rate was 87.5%. Two patients have small residual stones in the lower pole.

CONCLUSIONS: F-URS combined with holmium laser lithotripter and nitinol basket, is safe and effective in dealing with moderate stone diameter (<30 mm) in HSKs with high clearance rates and low complication rates.

PMC Identifier

26401860 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=26401860>]

Institution

(Ding) Department of Urology, Xin Hua Hospital Affiliated to Shanghai Jiao Tong University School of Medicine, Shanghai, China (Huang) Department of Urology, Xin Hua Hospital Affiliated to Shanghai Jiao Tong University School of Medicine, Shanghai, China
(Gu) Micro-Invasive Surgery Center, Shishi Overseas Chinese Hospital, Fujian, China
(Chen) Department of Urology, Xin Hua Hospital Affiliated to Shanghai Jiao Tong University School of Medicine, Shanghai, China
(Peng) Department of Ophthalmology, Xin Hua Hospital Affiliated to Shanghai Jiao Tong University School of Medicine, Shanghai, China
(Bai) Department of Urology, Xin Hua Hospital Affiliated to Shanghai Jiao Tong University School of Medicine, Shanghai, China
(Ye) Department of Urology, Xin Hua Hospital Affiliated to Shanghai Jiao Tong University School of Medicine, Shanghai, China
(Qi) Department of Urology, Xin Hua Hospital Affiliated to Shanghai Jiao Tong University School of Medicine, Shanghai, China
Year of Publication
2015

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603.

Ureteric suture urolithiasis following open emergency ureteric repair.

Sarmah P.B., Kelly B.D., Devarajan R.

Embase

Current Urology. 9(1) (pp 44-46), 2015. Date of Publication: 01 Dec 2015.

[Article]

AN: 608664584

Suture urolithiasis is an unusual but recognised phenomenon following surgery on the urinary tract. We report a case in a 30-year-old man who sustained a gunshot injury to the left ureter in

Burundi and underwent open ureteric repair in a regional hospital. He migrated to the UK and presented one year later with left loin pain. An intravenous urogram revealed two foci of calcification to the left of L3, within a peri-ureteric position. The patient underwent left-sided ureteroscopy where two calculi each formed around a nylon suture were discovered within a ureteric pseudo-diverticulum, and basketed. This is the first reported case of suture urolithiasis occurring following ureteric surgery.

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Status

Embase

Institution

(Sarmah, Kelly, Devarajan) Department of Urology, City Hospital, Dudley Road, Birmingham B18 7QH, United Kingdom

Publisher

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Year of Publication

2015

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604.

Contemporary practice patterns of flexible ureteroscopy for treating renal stones: Results of a worldwide survey.

Dauw C.A., Simeon L., Alruwaily A.F., Sanguedolce F., Hollingsworth J.M., Roberts W.W., Faerber G.J., Wolf J.S., Ghani K.R.

Embase

Journal of Endourology. 29(11) (pp 1221-1230), 2015. Date of Publication: November 2015.

[Review]

AN: 606874911

Introduction: Flexible ureteroscopy (fURS) is increasingly used in the treatment of renal stones. However, wide variations exist in technique, use, and indications. To better inform our knowledge about the contemporary state of fURS for treating renal stones, we conducted a survey of endourologists worldwide.

Method(s): An anonymous online questionnaire assessing fURS treatment of renal stones, consisting of 36 items, was sent to members of the Endourology Society in October 2014. Responses were collected through the SurveyMonkey system over a 3-month period.

Result(s): Questionnaires were answered by 414 surgeons from 44 countries (response rate 20.7%). U.S. surgeons accounted for 34.4% of all respondents. fURS was routinely performed in 80.0% of institutions, with 40.0% of surgeons performing >100 cases/year. Respondents considered fURS to be first-line therapy for patients with renal stones <2 cm and lower pole calculi. A substantial minority (11.3%) preferred fURS as a primary treatment modality for renal stones >2 cm. Basket displacement for lower pole stones was routinely performed by 55.8%. Ureteral access sheaths (UAS) were preferred for every case by 58.3%. Respondents frequently utilized high-power lasers and dusting techniques. Criteria for determining stone-free rate were defined as zero fragments or residual fragment (RF) <1, <2, <3, and <4 mm by 30.9%, 8.9%, 31.5%, 15.8%, and 11.2% of respondents, respectively.

Conclusion(s): The overwhelming majority of endourologists surveyed consider fURS as a first-line treatment modality for renal stones, especially those <2 cm. Use of UAS, high-power holmium lasers, and dusting technique has become popular among practitioners. When defining stone free after fURS, the majority of endourologists used a zero fragment or RF <2 mm definition.

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PMC Identifier

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Embase

Institution

(Dauw, Simeon, Alruwaily, Hollingsworth, Roberts, Faerber, Wolf, Ghani) Department of Urology, University of Michigan Health System, 2800 Plymouth Road, Ann Arbor, MI 48109, United States (Sanguedolce) Department of Urology, North Bristol NHS Trust, Bristol, United Kingdom

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Mary Ann Liebert Inc. (E-mail: info@liebertpub.com)

Year of Publication

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605.

A miniaturized, 1.9F integrated optical fiber and stone basket for use in thulium fiber laser lithotripsy.

Wilson C.R., Hutchens T.C., Hardy L.A., Irby P.B., Fried N.M.

Embase

Journal of Endourology. 29(10) (pp 1110-1114), 2015. Date of Publication: 01 Oct 2015.

[Article]

AN: 606400621

The thulium fiber laser (TFL) is being explored as an alternative laser lithotripter to the standard holmium:yttrium-aluminum-garnet laser. The more uniform beam profile of the TFL enables higher power transmission through smaller fibers. In this study, a 100- μ m core, 140- μ m outer-diameter (OD) silica fiber with 5-mm length hollow steel tip was integrated with 1.3F (0.433-mm OD) nitinol wire basket to form a 1.9F (0.633-mm OD) device. TFL energy of 30mJ, 500 μ s pulse duration, and 500Hz pulse rate was delivered to human uric acid stones, ex vivo. Stone ablation rates measured 1.5 $\pm$ 0.2mg/s, comparable to 1.7 $\pm$ 0.3mg/s using bare fiber tips separately with stone basket. With further development, this device may minimize stone retropulsion, allowing more efficient TFL lithotripsy at higher pulse rates. It may also provide increased flexibility, higher saline irrigation rates through the ureteroscope working channel, reduce fiber degradation compared with separate fiber and basket manipulation, and reduce laser-induced nitinol wire damage.

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PMC Identifier

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Status

Embase

Institution

(Wilson, Hutchens, Hardy, Fried) Department of Physics and Optical Science, University of North Carolina at Charlotte, 9201 University City Avenue, Charlotte, NC 28223, United States (Irby, Fried) McKay Department of Urology, Carolinas Medical Center, Charlotte, NC, United States (Fried) Department of Urology, Johns Hopkins Medical Institutions, Baltimore, MD, United States

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Year of Publication

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606.

Xenx (Xenolith): preliminary considerations of a new "all-in-one" ureteral guidewire and anti-repulsion device.

Montanari E., Longo F., Macchione N., Traxer O.

Embase

Urolithiasis. 43(2) (pp 177-182), 2015. Date of Publication: 2015.

[Article]

AN: 600483512

A new anti-retropulsion device for the endoscopic treatment of ureteral stones was evaluated for safety and potential efficacy. The Xenx™ (Rocamed, Monaco-Montecarlo) is an anti-retropulsion device that operates as a normal hydrophilic guidewire when "closed" and as a nitinol ureteral mesh when "open". We performed semirigid ureterorenoscopy and Ho:YAG Laser lithotripsy in 15 patients, with a single ureteral stone. For each procedure, the papilla was negotiated with the Xenx™, the radiopaque markers were positioned over the stone via direct visualization and the device was opened under fluoroscopic control. The ureteroscope was then retracted and reinserted beside the Xenx™. At the end of the procedure, the Xenx™ was closed, and a ureteral catheter was coaxially placed and left for 24-48 h post-operation. We evaluated device

positioning success with respect to pushability, ease of deployment, full expansion and fitting with the ureteral walls, kink resistance and stone retention capabilities during lithotripsy and device retrieval. Operative time, post-operative complications (Clavien-Dindo scale), ultrasound kidney stone-free rate and the hydronephrosis grade, were also recorded. At 4 weeks post-operation, the stone-free rate was assessed via non-contrast computed tomography with 1-mm slices. All procedures were successfully accomplished without complications according to the Clavien-Dindo scale. In all the cases, Xenx™ was inserted successfully past the stone and opened over it. In 4/15 cases (27 %) some difficulties in pushability and kink resistance were recorded. In no case stone fragment basketing was performed. The median operative time was 24 min. At hospital discharge, 14/15 patients (93 %) were kidney stone-free. At 4 weeks, the NCCT stone-free rate was 100 %. This study demonstrated that the Xenx™ is safe and effective in terms of the stone-free rate, complications and operating time. Moreover, use of the Xenx™ allows the use of a basket or guide wire to be avoided.

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Status

Embase

Institution

(Montanari, Longo, Macchione) A.O. San Paolo, Urological Department, Medical School
University of Milan, Via Antonio di Rudini 8, Milan 20146, Italy (Traxer) Hopital Tenon, University
of Paris 6th, 4 Rue de la Chine, Paris 75020, France

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607.

Calculus-related ureteral intussusception: A case report and literature review.

Sewell J., Blecher G., Tsai K., Bishop C.

Embase

International Journal of Surgery Case Reports. 12 (pp 63-66), 2015. Date of Publication: 2015.

[Review]

AN: 604448650

Introduction Ureteral intussusception is a rarely reported condition, primarily as a complication of ureteric tumours. Fewer than 30 case reports have been made. This case represents the first reported case, to our knowledge, of ureteral intussusception caused by a ureteric calculus.

Presentation of case We present the case of a 70 year old man with a history of conservatively managed renal calculi, in whom obstructive ureterolithiasis was incidentally detected. Retrograde pyelography and ureteroscopy revealed intussusception of the ureter around a calculus.

Extensive biopsies revealed no evidence of tumour, and the intussusception resolved following stone clearance. Discussion Literature review of previously reported cases of ureteral intussusception revealed 26 cases, of which 22 were secondary to tumour and 4 were secondary to surgical procedures. We propose a mechanism by which calculus-related ureteral intussusception may occur, and suggest treatment for this condition. Conclusion Calculus-related ureteral intussusception is a rare condition, of which this represents the only case report.

Management of the condition should involve excluding the presence of tumour, and then clearing the stone, avoiding the use of a basket for retrieval of fragments.

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Status

Embase

Author NameID

Sewell, James; ORCID: <http://orcid.org/0000-0003-0289-539X>

Institution

(Sewell, Blecher, Tsai, Bishop) Western Health, Gordon Street, Footscray, VIC, Australia

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608.

Bilateral ureteral stones causing anuria: A case report.

Gur A., Turtay M.G., Gurbuz S., Oguzturk H., Sarihan M.E., Oguz F., Derya S.

Embase

Akademik Acil Tip Olgu Sunumlari Dergisi. 6(4) (pp 72-74), 2015. Date of Publication: 2015.

[Article]

AN: 606541899

Introduction: Bilateral ureteral stone is not known to frequently result in anuria during emergency.

Case Report: An 18-year-old male patient was admitted to an emergency department with the complaint of sudden inability to urinate. He did not mention any additional complaints. On conducting a physical examination, we could not detect any pathological findings. From the patient's blood tests, potassium and creatinine levels were found to be 6.4 mmol/L and 9.81 mg/dL, respectively. Subsequently, we found bilateral ureteral stones on ultrasonography and non-contrast spiral computed tomography. Urology consultation was requested. The patient undergoing emergency surgery had ureterorenoscopy, bilateral endoscopic retrograde basket, and DJ stents procedures done by urology. During the follow-up, the patient was able to urinate, and his creatinine and potassium levels decreased. The patient was discharged.

Conclusion(s): For patients admitted with complaint of anuria, we should keep in mind that the patient could have bilateral ureteral stones; therefore, he or she may have acute kidney failure and may subsequently require emergency surgery.

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Status

Embase

Institution

(Gur, Turtay, Gurbuz, Oguzturk, Sarihan, Derya) Department of Emergency Medicine, Inonu University Faculty of Medicine, Malatya, Turkey (Oguz) Department of Urology, Inonu University Faculty of Medicine, Malatya, Turkey

Publisher

AVES Ibrahim Kara (105/9 Buyukdere Cad, Mecidiyekoy,Sisli, Istanbul 34394, Turkey)

Year of Publication
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609.

Prospective randomized trial comparing 2 flexible digital ureteroscopes: ACMI/olympus invisio DUR-D and olympus URF-V.

Shah K., Monga M., Knudsen B.

Embase

Urology. 85(6) (pp 1267-1271), 2015. Date of Publication: 01 Jun 2015.

[Article]

AN: 602449289

Objective To compare 2 digital flexible ureteroscopes in a randomized, prospective, clinical trial; the complementary metal oxide semiconductor-based Gyrus ACMI/Olympus Invisio DUR-D and the charged coupled device-based Olympus URF-V. Methods Patients scheduled for ureteroscopy were prospectively enrolled and randomized between the DUR-D and URF-V. Patient demographics, laser and total procedure time, laser energy, lower pole time, and difficulties encountered were recorded. The visibility and maneuverability were rated on a scale of 0-10. Results A total of 101 patients (58 women) with a mean age of 49.5 years (20-80 years) were enrolled. Laser lithotripsy (mean stone size, 11.8 mm) was performed in 88 patients, 10 underwent stone basketing, and 3 had diagnostic ureteroscopy. For the DUR-D and URF-V, the mean total operative time (26.5 vs 25 minutes), laser time (12.5 vs 13 minutes), lower pole time (9 vs 11 minutes), and basket time (14.5 vs 13 minutes) were comparable. In 3 of 45 (6.6%) and 6 of 56 (10.7%) cases, the stone could not be reached with the DUR-D and URF-V, respectively. A fiberoptic scope (URF-P5) reached the stone in all cases. On a scale of 0-10, the mean visibility was 6.86 and 8.73 ($P < .01$) and the maneuverability was 7.18 and 8.17 ($P < .01$) for DUR-D and URF-V, respectively. There were 8 repairs, 4 for each scope. The DUR-D averaged 11.25 cases

per repair and the URF-V averaged 14. Conclusion The URF-V offered better visibility and maneuverability compared with the DUR-D. Both had similar failure rates compared with the previous study with fiberoptic scopes.

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Status

Embase

Institution

(Shah, Knudsen) Department of Urology, Wexner Medical Center, Ohio State University, 915 Olentangy River Road, Columbus, OH 43210-1228, United States (Monga) Department of Urology, Cleveland Clinic, Cleveland, OH, United States

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610.

Tips, techniques and strategies to optimize clearance of large intrarenal calculi in morbidly obese patients.

D'Arcy F.T., O'Kane D., Liodakis P., Lawrentchuk N., Manecksha R.P., Webb D., Bolton D.

Embase

BJU International. Conference: Annual Meeting of the Irish Society of Urology, ISU 2015.

Limerick Ireland. Conference Publication: (var.pagings). 116(SUPPL. 2) (pp 24), 2015. Date of Publication: September 2015.

[Conference Abstract]

AN: 72097484

Introduction & Objectives: The increasing incidence of obesity in developed countries has been associated with multiple comorbidities including urolithiasis. Body habitus and anaesthetic considerations may limit the operative options available to morbidly obese patients who need to have their complex stone disease treated. Staggered sessions of flexible ureteroscopy (FURS) and laser lithotripsy are sometimes the only feasible option open to these patients. We outline techniques the operating urologist can use to maximize stone clearance in these complicated patients.

Method(s): This presentation outlines how PICC line insertion significantly speeds up induction of anesthesia and allows prompt administration of IV antibiotics in a postoperative urosepsis scenario. Visibility is crucial to allow the surgeon to concentrate on fragmentation. This can be optimized using a wide access sheath (14-16f), insertion of radiological nephrostomy and use of arthroscopic giving set. Sheath displacement can impede irrigation and compromise intrarenal maneuverability. It can be stitched to labia/glans to guard against this. "Game plan" for the stone is important. Initial sessions should concentrate on fragmenting only, ideally at a "dusting" setting. Basket should be reserved for later sessions when most of the stone has been debulked. The surgeon should be aware of the increased risk of thromboembolic events in these patients.

Result(s): The treatment of large calculi in morbidly obese patients can be optimised.

Conclusion(s): Multiple sessions of FURS is a feasible option to treat stones in morbidly obese patients. As these patients have increased anesthetic risk factors, strategies to maximize intraoperative efficiency are important.

Status

CONFERENCE ABSTRACT

Institution

(D'Arcy, O'Kane, Liodakis, Lawrentchuk, Manecksha, Webb, Bolton) Department of Surgery, Austin Health, University of Melbourne, Melbourne, VIC, Australia (D'Arcy) Department of Urology, University Hospital, Galway, Ireland

(Lawrentchuk) Peter MacCallum Cancer Centre, Melbourne, VIC, Australia

(Lawrentchuk, Bolton) Ludwig Institute for Cancer Research, Austin Hospital, Melbourne, VIC, Australia

(Manecksha) Department of Urology, St James and Tallaght Hospitals, Dublin, Ireland

Publisher

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611.

Tips, techniques and strategies to optimise clearance of large intrarenal calculi in morbidly obese patients.

D'Arcy F.T., Liodakis P., Lawrentschuk N., Webb D., Bolton D.

Embase

BJU International. Conference: 68th Annual Scientific Meeting of the Urological Society of Australia and New Zealand. Adelaide, SA Australia. Conference Publication: (var.pagings).

115(SUPPL. 4) (pp 38-39), 2015. Date of Publication: April 2015.

[Conference Abstract]

AN: 71914127

Introduction & Objectives: The increasing incidence of obesity in developed countries has been associated with multiple comorbidities including urolithiasis. Body habitus and anaesthetic considerations may limit the operative options available to morbidly obese patients who need to have their complex stone disease treated. Staggered sessions of flexible ureterorenoscopy (FURS) and laser lithotripsy are sometimes the only feasible option open to these patients. We outline techniques the operating urologist can use to maximise stone clearance in these complicated patients.

Method(s): This presentation outlines how PICC line insertion significantly speeds up induction of anesthesia and allows prompt administration of IV antibiotics in a post-operative urosepsis scenario. Visibility is crucial to allow the surgeon to concentrate on fragmentation. This can be optimised using a wide access sheath (14-16f), insertion of radiological nephrostomy and use of arthroscopic giving set. Sheath displacement can impede irrigation and compromise intrarenal manoeuvrability. It can be stitched to labia/ glans to guard against this. 'Game plan' for the stone is important. Initial sessions should concentrate on fragmenting only, ideally at a 'dusting' setting. Basket should be reserved for later sessions when most of the stone has been debulked. The surgeon should be aware of the increased risk of thromboembolic events in these patients.

Result(s): The treatment of large calculi in morbidly obese patients can be optimised.

Conclusion(s): Multiple sessions of FURS is a feasible option to treat stones in morbidly obese patients. As these patients have increased anaesthetic risk factors, strategies to maximise intraoperative efficiency are important.

Status

CONFERENCE ABSTRACT

Institution

(D'Arcy, Liodakis, Lawrentschuk, Webb, Bolton) University of Melbourne, Urology Unit,
Department of Surgery, Austin Health, Melbourne, Australia (Lawrentschuk) Peter MacCallum
Cancer Centre, Melbourne, Australia

(Lawrentschuk, Bolton) Ludwig Institute for Cancer Research, Austin Hospital, Melbourne,
Australia

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612.

Aki from unilateral ureteral obstruction: One hard calculus problem that needed to be worked out.

Chung R., Caruso A., Bates J.T.

Embase

Journal of General Internal Medicine. Conference: 38th Annual Meeting of the Society of General
Internal Medicine. Toronto, ON Canada. Conference Publication: (var.pagings). 30(SUPPL. 2) (pp
S355), 2015. Date of Publication: April 2015.

[Conference Abstract]

AN: 71878144

LEARNING OBJECTIVE #1: Recognize that unilateral ureteral obstruction due to a renal calculus can result in acute kidney injury in the setting of a solitary functional kidney. LEARNING OBJECTIVE #2: Diagnose ureteral calculus with computed tomography, despite absence on ultrasonography, when acute kidney injury is unexplained. CASE: A 58-year-old man was admitted for acute kidney injury (AKI). His medical history included prostate cancer status post radiation therapy, hypertension and hyperlipidemia. Two days prior to admission, the patient started having subjective fevers and chills, nausea, vomiting, and decreased oral intake. He denied abdominal pain, flank pain, dysuria, hematuria, or difficulty urinating. Physical examination was remarkable only for mild left costovertebral angle tenderness; he did not have abdominal tenderness, suprapubic fullness or tenderness, or edema. Laboratory studies disclosed a serum creatinine level of 6.1 mg/dL (compared to 1.3 mg/dL 1 week prior) and blood urea nitrogen level of 55 mg/dL (compared to 20 mg/dL 1 week prior). Urinalysis was positive for 14 red blood cells; there were no white blood cells or cellular casts. Renal ultrasound showed very mild bilateral hydronephrosis, left renal hypertrophy, right renal cortical atrophy, and no renal calculi. A noncontrast computed tomography (CT) scan of the abdomen showed an obstructing 5 mmx3 mm calculus at the left ureterovesical junction with mild left hydronephrosis and an atrophic right kidney. In the setting of a solitary functional kidney, urology was consulted for urgent cystoscopy and ureteral stent placement. However, the ureter was unsuccessfully cannulated, so the patient underwent left nephrostomy tube placement. His symptoms resolved and his serum creatinine level improved to 1.8 mg/dL by the time of discharge. Four weeks after discharge, a retrograde ureteroscopy was performed, and the calculus was successfully removed with basket extraction. DISCUSSION: Acute unilateral ureteral obstruction due to renal calculi is a frequent event, affecting up to 15 % of the population worldwide. Common presenting symptoms include nausea, vomiting, hematuria, and severe abdominal or flank pain radiating to the groin. Serum creatinine level and urine output are usually not affected when the contralateral kidney is functioning normally. In this patient, the compromised function of the right atrophic kidney led to the development of AKI from the left unilateral ureteral obstruction. The presentation was unusual in that the patient did not experience pain from renal colic. Nonetheless, early diagnosis and prompt treatment are of utmost importance in preserving or restoring renal function. While routine imaging studies usually add little to the diagnostic workup of AKI, ultrasound imaging of the urinary tract is indicated when the probability of urinary obstruction is high or the kidney failure is unexplained. In the present case, ultrasound showed evidence of left urinary tract obstruction but failed to show the presence of any calculi. Low sensitivity of about 19 % is reported for sonographic detection of ureteral calculi, as most of the ureter is obscured by shadowing from overlying bowel gas. Unexplained obstruction requires additional imaging with CT, which remains the best method for detection of calculi, with sensitivity and specificity estimated at 96 and 99 %, respectively.

Status

CONFERENCE ABSTRACT

Institution

(Chung, Caruso, Bates) Baylor College of Medicine, Houston, TX, United States (Caruso, Bates)

Michael E. DeBakey VA Medical Center, Houston, TX, United States

Publisher

Springer New York LLC

Year of Publication

2015

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613.

A single dose of intraoperative antibiotics is sufficient to prevent urinary tract infection during ureteroscopy.

Chew B.H., Flannigan R., Kurtz M.P., Gershman B., Arsovska O., Paterson R.F., Eisner B., Lange D.

Embase

Journal of Urology. Conference: 2015 Annual Meeting of the American Urological Association, AUA. New Orleans, LA United States. Conference Publication: (var.pagings). 193(4 SUPPL. 1) (pp e951-e952), 2015. Date of Publication: April 2015.

[Conference Abstract]

AN: 71860013

INTRODUCTION AND OBJECTIVES: AUA Best Practice Guidelines for ureteroscopic stone treatment recommend antibiotics coverage for less than 24 hours after the procedure. The purpose of this study was to evaluate if the rate of post-operative urinary tract infection (UTI) differed in patients receiving a single dose of antibiotics preoperatively compared to those patients who also received post-operative antibiotics.

METHOD(S): A retrospective review was performed of consecutive patients at two institutions, University of British Columbia and Massachusetts General Hospital, Harvard. All patients were given a single dose of antibiotics prior to ureteroscopic stone treatment. A subset of patients were also given postoperative antibiotics ranging in time and selection of antibiotic. Patients who displayed symptoms of infection had a urine culture performed for speciation and antibiotic sensitivity.

RESULT(S): Eighty one patients underwent ureteroscopy for renal calculi. Patients with pre and post operative antibiotics were compared to those receiving only pre-operative antibiotics. Eight (9.9%) patients in total (2 from pre-operative antibiotic and 6 from the pre and post-operative antibiotic group, $P=0.219$) developed UTI's in the postoperative period. Surgical factors such as ureteral access sheath, bilateral procedures, use of basket or laser was not associated with rates of infection or whether the surgeon prescribed post-operative antibiotics. Risk factors such as pre-operative stenting, nephrostomy tubes, and foley catheters did not differ between groups or predispose patients to post operative infections.

CONCLUSION(S): Our data suggests that post-operative antibiotics do not decrease infection rates following ureteroscopic stone treatment, even among patients with risk factors for infection. A single pre operative dose is sufficient.

Status

CONFERENCE ABSTRACT

Institution

(Chew, Flannigan, Arsovksa, Paterson, Lange) VancouverCanada (Kurtz, Gershman, Eisner)
BostonMAUnited States

Publisher

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Definitive ureteral stone treatment (DUST) score predicts outcomes of ureteroscopic intervention in acute obstructive uropathy secondary to urolithiasis.

Tran T., Thavaseelan S., Pareek G.

Embase

Journal of Urology. Conference: 2015 Annual Meeting of the American Urological Association, AUA. New Orleans, LA United States. Conference Publication: (var.pagings). 193(4 SUPPL. 1) (pp e947), 2015. Date of Publication: April 2015.

[Conference Abstract]

AN: 71860002

INTRODUCTION AND OBJECTIVES: Patients presenting to the Emergency Department with intractable symptoms from acute ureterolithiasis are admitted and administered a trial of medical expulsive therapy (MET). Failure of MET prompts endourological intervention. Management often involves stent placement only with definitive stone treatment deferred due to concerns regarding higher complication rates and diminished efficacy in the setting of acute ureteral inflammation. Pre-operative factors that may predict treatment success in this setting have not been reported. We sought to review our recent experience with emergency ureteroscopy (URS).

METHOD(S): A retrospective review was performed of all patients that underwent inpatient URS from 2010 to 2014. Inclusion criteria were presentation with acute renal colic, age > 18, noncontrast CT (NCCT) with ureteral stone, no indwelling ureteral stent and no evidence of sepsis. Laboratory (complete blood count, serum chemistry, urinalysis) and radiographic data (periureteral density measured in Hounsfield Units, stone size and location on NCCT) were analyzed. Statistical difference was assessed with Student's ttest. DUST score points were added for each cutoff value that a patient was below for rise in serum creatinine (delta Cr) and periureteral density (PUD).

RESULT(S): 58 of 73 (79.4%) were stone-free (SF). One complication (1.4%) was noted (extravasation on retrograde pyelography). 27 of 28 patients (96.4%) with distal stones were SF, in comparison to only 22 of 34 (64.7%) of those with proximal stones. Periureteral density was lower in SF-patients (3.25 HU vs. 23.3 HU, $p = 0.013$) and this difference was especially notable for proximal stones (-11.3 HU vs. 12.9 HU, $p < 0.0002$). Delta Cr was greater in non-SF patients (0.43 mg/dL vs. 0.24 mg/dL, $p = 0.02$). Cutoff values of 5.0 HU for PUD and 0.3 mg/dL for delta Cr were established. PUD ≥ 5.0 HU was associated with a SF-rate of 100%, while PUD < 5.0 HU correlated with a 53.1% SF-rate. Delta Cr < 0.3 mg/dL had a SF-rate of 93.2%, compared with 47.6% for delta Cr ≥ 0.3 . DUST score of 0, 1 and 2 correlated with SF-rates of 26%, 84% and 100%, respectively. Stone size, duration of symptoms prior to presentation and serum WBC at presentation did not affect SF-rates.

CONCLUSION(S): Emergency URS for ureterolithiasis appears to be a safe and effective procedure. Consideration of periureteral density and rise in serum creatinine using the DUST score can facilitate selection of optimal candidates for immediate definitive ureteroscopic management.

Status

CONFERENCE ABSTRACT

Institution

(Tran, Thavaseelan, Pareek) ProvidenceRIUnited States

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615.

A smart kidney stone basket with force feedback.

Najafi Z., Tieu T., Mahajan A.M., Schwartz B.F.

Embase

Journal of Urology. Conference: 2015 Annual Meeting of the American Urological Association, AUA. New Orleans, LA United States. Conference Publication: (var.pagings). 193(4 SUPPL. 1) (pp e889-e890), 2015. Date of Publication: April 2015.

[Conference Abstract]

AN: 71859869

INTRODUCTION AND OBJECTIVES: Ureteroscopy with stone extraction devices has become an effective treatment in the management of urolithiasis. Perforation and avulsion of the ureter wall, due to excessive force on the extraction device, are serious complications of basketing. In this paper, we design a prototype that provides instantaneous extraction forces. The proposed

prototype will aid in reducing the risk of ureter wall perforation and avulsion by highlighting the safe and hazardous extraction forces. Additionally, it can be used to improve the skills of surgeons during professional training.

METHOD(S): The mechanical sensor prototype is shown in Fig.1. The basket is connected to a spring that is located inside a tube. Three regions, safe (green), cautious (yellow), and dangerous (red), are defined by the amount of perforation and avulsion forces reported by Pedro RN et al. (2007). The prototype was calibrated and bench top testing was performed by preparing a model of the ureter (polyurethane tubing). A stricture was created on the tube and a metal bead simulating the stone was placed in the tube (Fig.1). The entire system was withdrawn from the ureter model by first sweeping the stone down to the stricture and then increasing the force up to the perforation and avulsion forces. The movement of the indicator was monitored and recorded.

RESULT(S): The spring was calibrated and used to define the different force regions. Table 1 illustrates the results of the device calibration after five repetitions. Bench top testing on the ureter model shows that the results obtained by the proposed smart device prototype are consistent with the perforation and avulsion values reported by Pedro RN et al. (2007).

CONCLUSION(S): A smart device was designed to feedback the instantaneous forces during basketing. Safe and hazardous regions were defined and the device was calibrated and tested on a ureter model. The same prototype can also be calibrated to be used on human ureter (we undertake this in our future work). The feedback forces provided by the prototype will lead to less complication and aid in reducing the procedure cost. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Najafi, Mahajan) AkronOHUnited States (Tieu, Schwartz) SpringfieldILUnited States

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616.

Comparison of low power/high frequency holmium laser settings with conventional settings on ureteral and renal stone fragmentation efficiency.

Glickman L., Munver R.

Embase

Journal of Urology. Conference: 2015 Annual Meeting of the American Urological Association, AUA. New Orleans, LA United States. Conference Publication: (var.pagings). 193(4 SUPPL. 1) (pp e888-e889), 2015. Date of Publication: April 2015.

[Conference Abstract]

AN: 71859867

INTRODUCTION AND OBJECTIVES: Recent advances in holmium laser technology suggest that tailoring laser settings for urinary stones of varying compositions and locations can improve the efficacy of stone fragmentation. We report on our experience with low power, high frequency holmium laser settings and compared the results to those with conventional laser settings.

METHOD(S): A retrospective review of 103 consecutive patients undergoing retrograde ureteroscopic holmium laser lithotripsy of ureteral or renal calculi was performed. Patients were randomly assigned to receive treatment with low power/high frequency settings of 0.2 J-0.4 J and 50 Hz [LP/HF group] or with conventional laser settings of 0.5 J- 1.0 J and 5-10 Hz [conventional group]. Patient demographics and perioperative parameters were assessed.

RESULT(S): Of 103 patients, 52 patients were in the LP/HP group and 51 were in the conventional group. The mean age was 60 years (26-85) [LP/HF] and 57 years (25-91) [conventional]. The mean aggregate stone diameter/burden was 1.6 cm (0.5-4.5 cm) [LP/HF] and 1.0 cm (0.4-3.5 cm) [conventional]. All stones were treated with a 200 micron holmium laser fiber. In 13 cases (25%) using LP/HF settings, the energy level was increased from 0.2 J to 0.3 J-0.4 J. In 2 additional cases (3.8%), conventional settings (0.5 J-1.0 J, rate 5-10 Hz) were used due to harder stone compositions. Stone compositions included: calcium oxalate/mixed composition (54%), calcium oxalate monohydrate (26%), uric acid (10%), struvite (8%), and cystine (2%). The mean operative time was 64.4 min [LP/ HF] and 57.4 min [conventional] ($P = 0.37$), and the total energy usage was 5.42 W [LP/HF] and 1.96 W [conventional] ($P < 0.01$). No trimming of the laser fiber tip was required in the LP/HF group as compared to 24% of cases that required trimming in the conventional group. Complete stone fragmentation into fine dust was achieved in 7 cases (13.4%) [LP/HF] obviating the need for stone basketing. No bleeding complications or gross ureteral perforations were encountered during any procedures. Subjectively, there was decreased visibility due to bleeding during 5 cases (9.8%) using conventional settings.

CONCLUSION(S): Selecting energy settings of 0.2 J-0.4 J and 50 Hz results in effective stone fragmentation into fine dust, thus reducing the use of stone baskets to achieve stone-free status. These settings can be adjusted to work well for all stone compositions. Additionally, these settings serve to reduce laser fiber tip degradation and minimize stone retropulsion without increasing operative time.

Status

CONFERENCE ABSTRACT

Institution

(Glickman, Munver) HackensackNJUnited States

Publisher

Elsevier Inc.

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617.

The new stone age: Ureteroscopic stone "dusting" with a 120-watt holmium laser.

Morhardt D.R., Tracey J., Wolf Jr. J.S., Ghani K.R.

Embase

Journal of Urology. Conference: 2015 Annual Meeting of the American Urological Association, AUA. New Orleans, LA United States. Conference Publication: (var.pagings). 193(4 SUPPL. 1) (pp e580-e581), 2015. Date of Publication: April 2015.

[Conference Abstract]

AN: 71859137

INTRODUCTION AND OBJECTIVES: Techniques for laser lithotripsy during ureteroscopy (URS) have evolved with improvements in laser technology. The "Dusting" technique utilizes a high-power laser to ablate stones into fine powder. This was previously impractical due to limitations in

energy settings using low-power systems. In this video we describe our experience of using a 120-Watt (W) holmium laser with dual dusting and fragmentation modes to perform flexible URS lithotripsy. We demonstrate the technique of ureteroscopic stone dusting for large renal and ureteral stones including use of 'dancing' and 'chipping' maneuvers.

METHOD(S): We present two cases of renal stones (1.5 and 1.7 cm, respectively) and one of an impacted upper ureteral stone (1.7 cm) treated predominantly with dusting approach. Dusting is use of low pulse energy and high frequency (LoPE-HiFr) during laser lithotripsy. We used a 120-W holmium laser (Lumenis, San Jose, CA) with digital architecture that permits dual lithotripsy modes (dusting and fragmentation) and change in pulse width. A 200 micron ball-tip laser fiber was used (Flexiva, Boston Scientific, Boston, MA). Energy settings were adjusted according to stone composition, location and size, varying from 0.2-0.5 Joules (J) and rate between 30-80 Hertz (Hz).

RESULT(S): We demonstrate effective dusting technique to treat large stones in the kidney and ureter. Our dusting strategies include use of chipping, dancing and popcorning techniques. For chipping, the laser fiber is directed to the periphery of the stone to allow small fragments to chip off. For dancing, the tip of the laser fiber is brushed back and forth across the stone surface so that it is broken down layer by layer. During dusting of renal stones if they break into medium sized fragments, we push them into dependent calyces and utilize a "popcorning" technique (1J x 15Hz). In practice, dusting is also useful for impacted ureteral stones: dusted fragments are small and do not interfere with ureteroscopic vision while appropriate dusting settings avoid inadvertent retropulsion and stone migration. We used no retrieval devices for these cases.

CONCLUSION(S): High-power holmium lasers have opened a new frontier in ureteroscopic laser lithotripsy by permitting a dusting approach that ablates stones into powder. Further clinical evidence is needed to better understand the efficacy of dusting and determine if outcomes are similar to conventional laser lithotripsy strategies.

Status

CONFERENCE ABSTRACT

Institution

(Morhardt, Tracey, Wolf Jr., Ghani) Ann ArborMIUnited States

Publisher

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618.

Robotic pyelolithotomy in ectopic pelvic kidney: Side docking in supine position and a four-arm approach.

Al-Marzouq A., Al-Yousef R., Aldousari S.

Embase

Journal of Urology. Conference: 2015 Annual Meeting of the American Urological Association, AUA. New Orleans, LA United States. Conference Publication: (var.pagings). 193(4 SUPPL. 1) (pp e577), 2015. Date of Publication: April 2015.

[Conference Abstract]

AN: 71859127

INTRODUCTION AND OBJECTIVES: Ectopic kidney is a congenital malformation occurring in 1 in 900 births. Only about one in 10 of these are diagnosed. Patients with ectopic kidneys can be completely asymptomatic and discovered incidentally or they present with symptoms owing to urinary tract infection, obstructive uropathy or nephrolithiasis. Ectopic kidneys with renal pelvic stones can be challenging to treat. We report our experience in managing a case of ectopic pelvic kidney with a renal pelvic stone by robotic pyelolithotomy. Our objective is to present our approach to Robotic Pyelolithotomy in the management of renal pelvic stone in ectopic pelvic kidney.

METHOD(S): Our case is a 46 year old male with 2 months history of vague lower abdominal pain. No other urological symptoms. During his work-up a Computed Tomography (CT) scan showed left ectopic pelvic kidney with an 8 x 12 x 11 mm stone in an anomalous renal pelvis showing multiple compartments connected by narrow channels. Two attempts at flexible ureteroscopy (URS) failed to reach the stone. After placing a 4.7 French double J stent we proceeded with left pelvic robotic pyelolithotomy. Side docking was utilized with the patient in supine trendelenburg position. Port placements were similar to robotic assisted laparoscopic prostatectomy.

RESULT(S): Docking time was 35 minutes and total Console time was 150 minutes. There were extensive adhesions in the region of the left pelvic kidney. Multiple attempts failed to follow the course of the ureter in order to locate the renal pelvis. We subsequently opened the renal pelvis

directly and used the flexible cystoscope to basket the stone out the renal pelvis through a narrow infundibulum. Estimated Blood Loss (EBL) was < 100 mls. A suction drain was inserted. The patient was discharged in < 48 hours postoperatively after removal of the drain.

CONCLUSION(S): Stones in ectopic pelvic kidneys pose a great challenge due to altered surgical anatomy. Robotic pyelolithotomy is a safe and feasible approach providing exceptional exposure and easier dissection. It is imperative to have a detailed understanding of ectopic kidney anatomy to ensure safety and procedure success. Utilization of flexible cystoscopy aided in the localization and extraction of the stone in an anomalous renal pelvis.

Status

CONFERENCE ABSTRACT

Institution

(Al-Marzouq, Al-Yousef, Aldousari) Kuwait CityKuwait

Publisher

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Year of Publication

2015

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619.

Inference of shock rate and power on effective and efficient kidney stone fragmentation with extracorporeal shockwave lithotripsy (ESWL).

Hayes J., Kirk R., Richardson A.

Embase

Journal of Urology. Conference: 2015 Annual Meeting of the American Urological Association, AUA. New Orleans, LA United States. Conference Publication: (var.pagings). 193(4 SUPPL. 1) (pp e500), 2015. Date of Publication: April 2015.

[Conference Abstract]

AN: 71858951

INTRODUCTION AND OBJECTIVES: There are pressures to reduce total shock numbers to reduce renal and other organ damage. There is also a need to improve the efficiency of ESWL. This in vitro study looks at the influence of shock rate and power on stone fragmentation. Can both of these outcomes be achieved through the adequate understanding of how and why shock waves produce effects on stone and tissue? **METHODS:** A simulation silicone model for the kidney in vitro was established to measure the efficiency of various combinations of shock rate and power. Each combination was tested individually. The model kidney was set up underwater to avoid any artifacts due to gas. A mock kidney stone was inserted in a usual calyx structure and using the ESWL machine the stone was fragmented to completion 4mm. 396 mock kidney stones were used in total.

RESULT(S): For the studies investigating the effect that the shock rate has on stone fragmentation, the most effective rate (least number of shocks for complete stone fragmentation) was 60 shocks per minute (spm) and the most efficient (shortest time to complete stone fragmentation) was 100 spm. The most effective and efficient power was 17.8kV across all shock rates tested, although it should be noted that although the stone fragmentation was most effective at the higher powers and there was a near linear graph from low (12kV) to high (17.8kV), the graph leveled off after 16kV. The highest power level (17.8kV), used clinically, resulted in the most efficient fragmentation, as expected, unless rate is considered in addition to power, in which case at the slower rate of 60 shocks a minute 17.8kV power is the most destructive. This is followed by a shock rate of 100 at 17.8kV power and then 60 spm at 16kV power followed by 60 spm at 16.9kV power.

CONCLUSION(S): Using a rate of 60 spm enhances fragmentation at all power levels used, not only with regards to the number of shocks needed, but from observations, the stone fragments appeared smaller and more dust-like than the larger sand-like particles produced at faster rates. This is likely to lead to enhanced clearance as the smaller fragments can pass more easily in the urine. This is consistent with the literature. The results from the power experiments are clear. Using a shock rate of 60 a minute appears to offer the most benefits, especially as lower powers can be used for the same or similar results. Implications for current clinical practice will be discussed.

Status

CONFERENCE ABSTRACT

Institution

(Hayes, Kirk, Richardson) ChristchurchNew Zealand

Publisher

Elsevier Inc.

Year of Publication

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620.

Leave no stone unturned?-negative ureteroscopy rates.

Lamberts R., Conti S., Shinghal R., Leppert J., Elliott C.

Embase

Journal of Urology. Conference: 2015 Annual Meeting of the American Urological Association, AUA. New Orleans, LA United States. Conference Publication: (var.pagings). 193(4 SUPPL. 1) (pp e315-e316), 2015. Date of Publication: April 2015.

[Conference Abstract]

AN: 71858518

INTRODUCTION AND OBJECTIVES: Negative Ureteroscopy (URS) occurs when a patient undergoes URS with the intent of removing a kidney/ureteral stone but does not because the stone has already passed or is not located in the collecting system. The rate at which this happens is not well described in the literature. We aimed to determine the rate at which this occurs as it may have significant cost implications.

METHOD(S): Using the Office of Statewide Health Planning Database (OSHDP), a publicly available database for all patients in California undergoing outpatient surgeries in 2008, we identified all patients with ICD-9 diagnosis code for upper tract nephrolithiasis. We used CPT codes to identify all patients in this group who underwent diagnostic URS only versus those that underwent stone treatment during URS (laser lithotripsy or basketing). The negative URS rate was then calculated (diagnostic URS / URS with stone laser lithotripsy or basketing). Rates of negative URS were compared based on sex, race/ ethnicity, age, and expected source of payment.

RESULT(S): In the OSHDP database for the year 2008, 9192 patients underwent ureteroscopic procedures with the diagnosis of upper tract stone disease. Of these, 897 patients underwent

diagnostic URS. There were 8295 who underwent URS with laser lithotripsy or stone basketing. The rate of negative URS was 9.8%. There were no detectable significant differences in the negative URS rate based on sex, race/ethnicity, or age. The negative URS rate did vary considerably with different insurance types (figure 1).

CONCLUSION(S): The rate of negative URS is significant and it occurs in nearly 1/10 individuals undergoing URS for therapy of a stone. The possibility of negative URS should be considered when counseling patients pre-operatively. The source of payment may influence the rate of negative URS. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Lamberts, Conti, Leppert) StanfordCAUnited States (Shinghal, Elliott) San JoseCAUnited States

Publisher

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621.

Flexible URS holmium laser stone dusting vs fragmentaion for 2 cm single renal stone.

Gamal W., Mamdouh A.

Embase

Journal of Urology. Conference: 2015 Annual Meeting of the American Urological Association, AUA. New Orleans, LA United States. Conference Publication: (var.pagings). 193(4 SUPPL. 1) (pp e312-e313), 2015. Date of Publication: April 2015.

[Conference Abstract]

AN: 71858509

INTRODUCTION AND OBJECTIVES: To compare the outcomes of stone dusting using low power high frequency holmium laser session and stone fragmentation using high power low frequency holmium laser session for 2 cm single renal stone using the flexible ureteroscopy.

METHOD(S): Between April 2012 and April 2014 forty six cases with unilateral single stone pelvis 2 cm were randomized into two groups. Group 1 (23 case) in which the stone was dusted using low power (0.2-0.4 Jouls) high frequency laser session(20-30 HZ) and group 2 (23 cases) in which the stone is fragmented using a high power (1-2 Jouls) low frequency (4-5 HZ) laser session. The patient age was ranged 23 - 56 (means 37+-3 years). The hardness of the stone using the house field unit were evaluated. The stone free rate, the operative time, the use of access sheath and any intraoperative complication were evaluated. The number of FURS entry and reentry were also evaluated.

RESULT(S): The stones were radiopaque in 38 cases and radiolucent in 8 cases. The housefield unit for group 1 was 790+-30 and was 820+- 26 in group 2 which is statistically non-significant ($p=0.19$). All the stones were successfully approached. The stone free rate was 86% in group 1 and 89% in group 2. NO ancillary maneuver or repeated session was needed in any case. The operative time was 57 minutes in group 1 and 70 minutes in group 2 (statistically significant $p=0.001$). No access sheath was used in group 1 but used in all cases of group 2. Single ureteroscopic entery were recorded in group 1 and multiple entries in group 2 (7+- 2) times per case. No reported intraoperative complications were recorded in group1 but 5 cases of entrapped Dormia in the upper ureter were recorded in group 2 in which the Dormia is cut to extract it. DJ stent were inserted in 3 cases of group 1 and in all cases of group 2.

CONCLUSION(S): Flexible URS holmium yag laser stone dusting or fragmentation for 2 cm renal stone have the same success rate however stone dusting carries the advantages of lower number of ureteral entery, significant lower operative time and small number of post operative DJ stent.

Status

CONFERENCE ABSTRACT

Institution

(Gamal, Mamdouh) SohagEgypt

Publisher

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Year of Publication

2015

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622.

Natural history, complications, and re-intervention rates of asymptomatic residual stone fragments post-ureteroscopy: A report from the EDGE research consortium.

Chew B.H., Brotherhood H., Sur R.L., Knudsen B.E., Miller N.L., Yong C., Marien T., Wang A.-Q., Charchenko C., Humphreys M.R., Krambeck A.E.

Embase

Journal of Urology. Conference: 2015 Annual Meeting of the American Urological Association, AUA. New Orleans, LA United States. Conference Publication: (var.pagings). 193(4 SUPPL. 1) (pp e264), 2015. Date of Publication: April 2015.

[Conference Abstract]

AN: 71858400

INTRODUCTION AND OBJECTIVES: Fragments 4mm or less that are non-obstructing and asymptomatic are termed "clinically insignificant residual fragments" (CIRFs); this designation is controversial due to high rates of re-intervention. Our objective was to examine the natural history, complication rates, and re-intervention rates of fragments following ureteroscopy.

METHOD(S): Data from 6 centers was collected retrospectively from members of the Endourology Disease Group for Excellence (EDGE) in 232 patients who had residual fragments following ureteroscopy (URS) between 2006 and 2013. Patients with fragment(s) of any size post-procedure with at least one KUB X-ray, US, or CT within 12 months were studied. Outcomes measured were fragment location, size, growth, passage, complication rates, and re-intervention rates.

RESULT(S): Of the 232 subjects with fragments, 131 (56%) required no further intervention and remained asymptomatic, 34 (15%) developed complications requiring no intervention, and 67 (29%) required intervention. Fragments > 4mm were more likely to grow over time ($p<0.001$) and were associated with complications ($p=0.039$). Logistic regression shows the original stone size ($p=0.0475$) to be the only significant predictor of complication. Reintervention was predictable based on the size ($p=0.017$) and location of fragments ($p=0.02$). There was a trend towards complication depending on the location of residual fragments ($p=0.068$) and re-intervention with

older age ($p=0.075$). Kaplan- Meier analysis found that dusting the stone and larger residual fragments ($>4\text{mm}$) were more likely to require re-intervention ($p=0.004$). Re-interventions included URS (58), PCNL (4), and SWL (3).

CONCLUSION(S): This study suggests that fragment sizes $> 4\text{mm}$ following ureteroscopy is associated with significantly higher rates of stone growth, complications, and need for re-intervention with at least one year of follow-up. Even for fragments less than 4mm , 28% underwent stone growth and 22% suffered a complication, challenging the traditional description of CIRF. Ensuring complete stone free status is the best way to reduce the rate of complications and interventions following ureteroscopy. (Table Presented).

Status

CONFERENCE ABSTRACT

Institution

(Chew, Brotherhood) VancouverCanada (Sur, Wang) San DiegoCAUnited States

(Knudsen, Charchenko, Krambeck) ColumbusOHUnited States

(Miller, Marien) NashvilleTNUnited States

(Yong) RochesterMNUnited States

(Humphreys) PhoenixAZUnited States

Publisher

Elsevier Inc.

Year of Publication

2015

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623.

Dusting vs basketing during ureteroscopic lithotripsywhat is more efficacious? interim analysis from a multi-centre prospective trial from the edge research consortium.

Chew B.H., Shah O., Sur R.L., Knudsen B.E., Matlaga B.R., Krambeck A.E., Miller N.L., Monga M., Humphreys M.R.

Embase

Journal of Urology. Conference: 2015 Annual Meeting of the American Urological Association, AUA. New Orleans, LA United States. Conference Publication: (var.pagings). 193(4 SUPPL. 1) (pp e261-e262), 2015. Date of Publication: April 2015.

[Conference Abstract]

AN: 71858394

INTRODUCTION AND OBJECTIVES: There is controversy and very little evidence as to whether dusting stones is more efficacious than basket extraction of fragments during ureteroscopic lithotripsy. We prospectively followed patients to determine which method resulted in the higher stone free rate.

METHOD(S): IRB approval was obtained across all sites and patients undergoing ureteroscopy for renal stones between 5-20mm were eligible. The Endourology Disease Group for Excellence (EDGE) includes high volume stone centers who had a well established dusting (4 sites) or basketing (4 sites) approach to intrarenal calculi participated in the study. Laser lithotripsy was utilized and patients were imaged within 3 months following ureteroscopy. The definition of stone free was no fragments of any size on KUB and ultrasound imaging. All patients were stented postoperatively and given alpha blocker for 30 days.

RESULT(S): 59 patients were enrolled and followed for 3 months (N=36 Basketing, N=23 Dusting). The stones were slightly larger in the dusting group (see table) and significantly more laser energy was used in the dusting group. OR time was longer in the basketing group. There were fragments present in 4/36 (11.1%) in the basketing group compared to 9/23 (39.1%) of the dusting group. This equates to a stone free rate of 89.1% in the basketing group and 60.9% in the dusting group. Only 1 patient from each group became symptomatic in our follow-up. There was no difference in readmission to ER or hospital between the groups (18.4%-dusting vs 12%-basketing) or in reintervention rates (1 patient in dusting, 2 in basketing). There were no differences between the groups in post-operative creatinine, or stone analyses.

CONCLUSION(S): Our analysis shows that in patients undergoing ureteroscopy for renal stones between 5-20 mm that active extraction of all fragments with a basket produces a higher stone free rate (89.9%) than dusting the stone (60.9%). However, there was no difference in readmission or reintervention rates and only 1 patient in each group became symptomatic from their residual fragments. Longterm follow-up of these patients will also determine the fate of these fragments and whether they become symptomatic and require treatment. (Table Presented).

Status

CONFERENCE ABSTRACT

Institution

(Chew) VancouverCanada (Shah) New York CityNYUnited States

(Sur) San DiegoCAUnited States

(Knudsen) ColumbusOHUnited States

(Matlaga) BaltimoreMDUnited States

(Krambeck) RochesterMNUnited States

(Miller) NashvilleTNUnited States

(Monga) ClevelandOHUnited States

(Humphreys) PhoenixAZUnited States

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624.

The new stone age: Ureteroscopic stone "Dusting" with a 120-Watt holmium laser.

Morhardt D.R., Tracey J., Wolf J.S., Ghani K.R.

Embase

European Urology, Supplements. Conference: 30th Annual Congress of the European Association of Urology, EAU15. Madrid Spain. Conference Publication: (var.pagings). 14(2) (pp eV64), 2015. Date of Publication: April 2015.

[Conference Abstract]

AN: 71832021

INTRODUCTION & OBJECTIVES: Techniques for laser lithotripsy during ureteroscopy (URS) have evolved with improvements in laser technology. The "Dusting" technique utilizes a high-power laser to ablate stones into fine powder. This was previously impractical due to limitations in energy settings using lowpower systems. In this video we describe our experience of using a 120-

Watt (W) holmium laser with dual dusting and fragmentation modes to perform flexible URS lithotripsy. We demonstrate the technique of ureteroscopic stone dusting for larger renal and ureteral stones including use of 'dancing' and 'chipping' maneuvers. MATERIAL & METHODS: We present two cases of renal stones (1.5 and 1.7 cm, respectively) and one of an impacted upper ureteral stone (1.7 cm) treated predominantly with dusting approach. Dusting is use of low pulse energy and high frequency (LoPE-HiFr) during laser lithotripsy. We used a 120-W holmium laser (Lumenis, San Jose, CA) with digital architecture that permits dual lithotripsy modes (dusting and fragmentation) and change in pulse width. A 200 micron ball-tip laser fiber was used (Flexiva, Boston Scientific, Boston, MA). Energy settings were adjusted according to stone composition, location and size, varying from 0.2-0.5 Joules (J) and rate between 30-80 Hertz (Hz).

RESULT(S): We demonstrate effective dusting technique to treat large stones in the kidney and ureter. Our dusting strategies include use of chipping, dancing and popcorning techniques. For chipping, the laser fiber is directed to the periphery of the stone to allow small fragments to chip off. For dancing, the tip of the laser fiber is brushed back and forth across the stone surface so that it is broken down layer by layer. During dusting of renal stones if they break into medium sized fragments, we push them into dependent calyces and utilize a "popcorning" technique (1J x 15Hz). In practice, dusting is also useful for impacted ureteral stones: dusted fragments are small and do not interfere with ureteroscopic vision while appropriate dusting settings avoid inadvertent retropulsion and stone migration. We used no retrieval devices for these cases.

CONCLUSION(S): High-power holmium lasers have opened a new frontier in ureteroscopic laser lithotripsy by permitting a dusting approach that ablates stones into powder. Further clinical evidence is needed to better understand the efficacy of dusting and determine if outcomes are similar to conventional laser lithotripsy strategies.

Status

CONFERENCE ABSTRACT

Institution

(Morhardt, Tracey, Wolf, Ghani) University of Michigan Health System, Dept. of Urology, Ann Arbor, United States

Publisher

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625.

Hands-on training in endoscopic treatment of urologic stones on a glove model.

Lezrek M., Tazi H., Sadiq A., Slimani A., Bazine K., Asseban M., Fethi A., Zahir R.A., Larbi A., Badraoui M., Kasmaoui E.H., Beddouch A., Alami M.

Embase

European Urology, Supplements. Conference: 30th Annual Congress of the European Association of Urology, EAU15. Madrid Spain. Conference Publication: (var.pagings). 14(2) (pp eV1), 2015. Date of Publication: April 2015.

[Conference Abstract]

AN: 71831964

INTRODUCTION & OBJECTIVES: We present a video of a model using a latex glove for learning of endoscopic stone manipulations. **MATERIAL & METHODS:** The glove opening is closed around an Amplatz sheath of 24 or 30 Fr, using a few ligations. Different stones are inserted in the glove. The glove is filled with saline and Amplatz sheath is elevated to avoid the use of irrigation. The standard equipment of cystoscopic lithotripsy, PCNL, and or ureteroscopy can be used. All kind of endoscopic lithotripsy can be used: ballistic, ultrasound, laser. All type of baskets and forceps are used. This model was used in 4 workshops: urologist and residents were trained nephroscopy, ureteroscopy and stones manipulation.

RESULT(S): The glove model is easy and quick to set up, with a preparation time of about a few minutes. It is very cheap and using widely available material. The glove model closely simulates percutaneous nephroscopy, stone disintegration, and stone removal. The rigid or flexible endoscopic exploration of the glove's fingers is similar to intra-renal exploration. The rigid and flexible ureteroscope can be used to simulate antegrade ureteroscopy. Moreover, stones manipulation in the glove's palm can simulate bladder lithotripsy, and in a glove's finger can simulate retrograde ureteroscopy. Since it is a non-biological model, there is no risk of biologic contamination, nor any hygiene or sterilization issue, thus, it can be performed in the operating room. However, there is a limitation in terms of "tissue feeling" and for anatomic relations. Evaluations submitted by training session participants revealed a high degree of satisfaction with model effectiveness in the application of endoscopic lithotomy techniques.

CONCLUSION(S): Our glove model can simulate stone manipulation in the bladder, kidney and ureter. The glove model is simple and rapid to set up. It is economical, by using cheap and available material, and it can be performed in the operating room. However, further technical experience and comparative studies with biologic and virtual reality simulators are necessary to evaluate this model.

Status

CONFERENCE ABSTRACT

Institution

(Lezrek, Tazi, Sadiq, Slimani, Bazine, Asseban, Fethi, Zahir, Larbi, Badraoui, Kasmaoui, Beddouch, Alami) Military Hospital Moulay Ismail, Dept. of Urology, Meknes, Morocco

Publisher

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Year of Publication

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626.

Intraoperative evaluation of ureteral injuries during retrograde intrarenal surgery using ureteral lesion scale.

Guzelburc V., Guven S., Boz M.Y., Erkurt B., Soytaş M., Albayrak S.

Embase

European Urology, Supplements. Conference: 30th Annual Congress of the European Association of Urology, EAU15. Madrid Spain. Conference Publication: (var.pagings). 14(2) (pp e973), 2015. Date of Publication: April 2015.

[Conference Abstract]

AN: 71831852

INTRODUCTION & OBJECTIVES: In order to classify ureteral lesions occurring during ureteroscopy, recently 2 ureteral wall injury classifications are proposed according to endoscopic findings -the Postureteroscopic Lesion Scale (PULS) and endoscopic ureteral wall injury. Despite minor differences in the description of ureter lesion of differing degrees in both classification systems, basically they are compatible with each other. In the present study, intra-operative ureteral injuries inflicted during Retrograde intrarenal surgery (RIRS) with ureteral access sheath (UAS) use are evaluated in patients using PULS. **MATERIAL & METHODS:** Stone patients who attended to our clinic from January 2013 to May 2014 in whom UAS was used during RIRS were reviewed. 101 patients whose ureter images were video recorded after UAS removal during the procedure were included in the study. The medical records, physical examinations, urine analyses, urine cultures, bio-chemistry, complete blood counts, CT scans, operation results and complications of all patients were assessed according to Clavien Classification System. **PULS grading:** After UAS removal, video sequences of all patients were watched by six experienced urologists and assessed according to PULS. Stone size, intrarenal localization, access sheath type and process time were evaluated according to PULS levels. Ureteral lesions in distal, mid-, proximal, and multiple localizations were evaluated and compared according to PULS scale. As well, inter-rater reliability of PULS grading among various urologists has been evaluated in the present study.

RESULT(S): We evaluated 101 patients. In 77 patients 9.5 / 11.5F, in 24 12 / 14F UAS was used. In 2 patients complications of Clavien Grade 3a and in another 2 Clavien Grade 2 developed. In 45 of the patients (44.6%) basket was used. Injuries of PULS grade 1 occurred in 11.8% of the patients during the first ureteral access using semi-rigid ureteroscope. This slight injury occurred before the insertion of UAS. Among the lesions related to semirigid ureteroscopy, 83.3% were at the distal, 8.3% at the mid, and 8.3% at the proximal ureter. Stone free rate, clinical insignificant residual fragments and final stone free rate were 41.6%, 53.5% and 98% respectively. In 58.4% of patients no lesions were present according to PULS grading. Whereas there were no lesions of grade 3 and above, there were lesions of grade 1 and 2 in 38.6% and 2.9% of patients respectively. In 45.2% of patients injuries were in the proximal ureter and in 40.4% in the distal ureter. There were multiple injuries in 5.9% of patients (in 3.9% in the proximal and distal ureter, in 0.9% in the mid and distal ureter, and in 0.9 % in the proximal-mid-distal ureter). In the grading made according to PULS classification, there was statistically significant ($p < 0.05$) correlation among the 6 urology specialists.

CONCLUSION(S): Ureteral injuries occur mostly at the distal and proximal ends of the ureter. Besides, UAS, the equipment used at different stages of the procedure like semi-rigid ureteroscope may lead to injuries in the ureter especially in the distal segment. Presenting intraoperative UAS related injuries within a standardized framework through post-ureteroscopic

lesion scale provides a common nomenclature and integration between intra- and postoperative management.

Status

CONFERENCE ABSTRACT

Institution

(Guzelburc, Guven, Boz, Erkurt, Soytaş, Albayrak) Istanbul Medipol University, School of Medicine, Dept. of Urology, Istanbul, Turkey

Publisher

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2015

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627.

Extracorporeal shockwave lithotripsy for management of distal ureteric calculi.

Katti A.R., Javali T.D., Prakash Babu S.M.L., Nagaraj H.K.

Embase

Indian Journal of Urology. Conference: 48th Annual Conference of Urological Society of India, USICON 2015. Ranchi India. Conference Publication: (var.pagings). 31(SUPPL. 1) (pp S81-S82), 2015. Date of Publication: January 2015.

[Conference Abstract]

AN: 71815175

Introduction: To assess the effectiveness, morbidity and clinical outcomes of ESWL for lower ureteric calculi.

Material(s) and Method(s): Prospective study between Jan 2011 and June 2014 of 175 patients with distal ureteric calculi (> 5 mm & <20 mm) who were treated with ESWL. Patient and stone characteristics, clinical outcomes, complications were analysed.

Result(s): Of the 175 patients in the study, mean age was 39 years with a male preponderance of 70%. 24% of patients had previous history of urolithiasis. Pain was the most common symptom followed by fever, vomiting and dysuria. Stone size and location was assessed by non contrast CT of KUB region. Mean stone size was 11.6mm. 48% patients had complete stone clearance in a single session, 44.6% in 2 sessions and remaining required 3 sessions or additional procedures. Mild haematuria and pain were the most common complaints after the procedure. There was a statistically significant correlation with stone size and the number of sittings, number of shocks, intensity and duration of the shocks and stone free rates. Patients were considered as stone free if there were no radio-opaque densities noted on post procedure non contrast CT KUB. None of our patients required overnight hospital stay. 6 patients required an additional procedure (ureteroscopy and basketing). 78% of our patients returned to work the next day.

Conclusion(s): ESWL is a simple, effective and non-invasive procedure for distal ureteric calculi. It has less morbidity and high stone free rates with quick return to work.

Status

CONFERENCE ABSTRACT

Institution

(Katti, Javali, Prakash Babu, Nagaraj) M S Ramaiah Medical College, Bangalore, India

Publisher

Medknow Publications

Year of Publication

2015

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628.

Nephrolithiasis as a result of migrated embolization coils following renal angioembolization.

Oo M.M., Hong S.K., Lee Y.M.

Embase

BJU International. Conference: Singapore Urological Association Meeting, UROFAIR 2015.
Singapore Singapore. Conference Publication: (var.pagings). 115(SUPPL. 3) (pp 49-50), 2015.
Date of Publication: March 2015.

[Conference Abstract]

AN: 71803818

Background: Vascular injury and arteriovenous fistula (AVF) are uncommon but known complications post PCNL. Angioembolization is an effective and frequently used treatment option for acute renal hemorrhage. Although coil migration is a known late complication of embolization, there are only a few cases reported in which coil migration leads to stone formation. Case: We report a case of a patient who had previously developed recurrent gross hematuria post-PCNL due to a small AVF between right renal artery and right upper pole vein, and had successfully undergone coil embolization of the AVF. Seven years after the coil embolization, he was found to have developed calculi around the coils. Intra-operatively, an upper ureteric stone was noted to be embedded within an embolization coil in the renal pelvis and this was removed with dormia basket. A lower pole stone was also found embed-ded with 1 mm protrusion of the coil and this was fragmented with laser lithotripsy. The protruded coil segment was levelled with laser. At 2-year follow-up, patient remains stone-free.

Conclusion(s): Embolization coils eroding into the renal collecting system is an uncommon complication of renal angioembolization. Foreign bodies in the collecting system predisposes to nephrolithiasis and these coils may make treatment technically more challenging.

Status

CONFERENCE ABSTRACT

Institution

(Oo, Hong, Lee) Department of Urology, Tan Tock Seng Hospital, Singapore

Publisher

Blackwell Publishing Ltd

Year of Publication

2015

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[SFX](#)

629.

Retrograde Intrarenal Lithotripsy (RIRL): A case for simultaneous treatment of bilateral renal stones < 2 cm endoscopically.

Okoli U., Rampaul M.

Embase

BJU International. Conference: 16th Annual Conference of the Caribbean Urological Association. Montego Bay Jamaica. Conference Publication: (var.pagings). 115(SUPPL. 2) (pp 5), 2015. Date of Publication: February 2015.

[Conference Abstract]

AN: 71775597

Introduction: Flexible ureterorenoscopy is an effective second line treatment for ESWL refractory renal calculi, and a reliable first line treatment for lower pole (LP) stones < 1.0 cm. Retrograde intrarenal surgery (RIRS) has also been accepted as an option when ESWL or percutaneous nephrolithotomy (PCNL) might be ill-advised or contraindicated, e.g. in pregnancy, morbid obesity and anticoagulated patients. Stone free rates using RIRS have been reported as 50-80% for calculi < 1.5 cm, and 50-90% for LP stones < 1 cm diameter. To our knowledge, very little has been published on the application of RIRL to the treatment of bilateral renal stones simultaneously.

Method(s): We reviewed 13 patients with renal stones, 6 mm-20 mm, presenting over a 2-year period. They were offered RIRS as minimally invasive alternative to ESWL. Stones were fragmented with the holmium laser 200 micron fibre, via a 7.5 Fr ureterorenoscope and cleared with zero tipped nitinol baskets.

Result(s): In our small study of 13 patients with total of 32 renal stones, 2 (15.5%) had single stones, 3(23%) had multiple unilateral stones and 8(61.5%) patients had bilateral stones, (treated as 2 renal units each). Mean number of stones was 2.46 per patient (range 2-5). Mean stone size was 8.2 mm (range 0.6-23 mm), average number of procedures was 2.3 (range 1-3). Our results showed that of 18 renal units treated, 14 units were stone free. Stone free rates were: 8 (44.4%), 11(61.1%) and 13 units (77.2%) after 1, 2 and 3 procedures respectively. Residual fragments/stones remained in three units with 8, 15, 15 mm stone respectively and in a pelvic kidney, a 20 mm stone (22.2%). There were no major complications; minor intraoperative complications included mild bleeding causing poor visibility and abandonment (2). Minor post op complications included haematuria (3), pyrexia (4), and significant post op haematuria requiring blood transfusion in one patient.

Conclusion(s): RIRS is a safe procedure which can be performed satisfactorily with adequate training and appropriate equipment, even in a third world country. We propose that it should become a preferred modality for treating multiple scattered stones and also for treating bilateral renal stones < 2 cm, simultaneously, in view of the minimal complications and high stone clearance rate.

Status

CONFERENCE ABSTRACT

Institution

(Okoli, Rampaul) Division of Urology, Department of Clinical Surgical Sciences, San Fernando Teaching Hospital, Trinidad and Tobago

Publisher

Blackwell Publishing Ltd

Year of Publication

2015

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630.

Kidney stones: flexible ureteroscopy.

Tseng T.Y., Preminger G.M.

Embase

BMJ clinical evidence. 2015 (no pagination), 2015. Date of Publication: 30 Oct 2015.

[Review]

AN: 622063227

INTRODUCTION: The age of peak incidence for stone disease is 20 to 40 years, although stones are seen in all age groups. There is a male to female ratio of 3:2. METHODS AND OUTCOMES:

We conducted a systematic overview, aiming to answer the following clinical question: What are the effects of flexible ureteroscopy for the removal of renal stones? We searched: Medline,

Embase, The Cochrane Library, and other important databases up to May 2014 (Clinical Evidence overviews are updated periodically; please check our website for the most up-to-date version of this overview).

RESULTS: At this update, searching of electronic databases retrieved 197 studies. After deduplication and removal of conference abstracts, 118 records were screened for inclusion in the overview. Appraisal of titles and abstracts led to the exclusion of 99 studies and the further review of 18 full publications. Of the 18 full articles evaluated, one systematic review and four RCTs were added at this update. We performed a GRADE evaluation for eight PICO combinations.

CONCLUSIONS: In this systematic overview, we categorised the efficacy for four interventions, based on information relating to the effectiveness and safety of: flexible ureteroscopy (combined with snare or basket or laser lithotripsy) versus expectant management, flexible ureteroscopy (combined with snare or basket or laser lithotripsy) versus extracorporeal shockwave lithotripsy, flexible ureteroscopy (combined with snare or basket or laser lithotripsy) versus percutaneous nephrolithotomy.

PMC Identifier

26535802 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=26535802>]

Institution

(Tseng) University of Texas Health Science Center at San Antonio, San Antonio, TX, US

Year of Publication

2015

Link to the Ovid Full Text or citation:

[Click here for full text options](#)

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[SFX](#)

631.

Ureteroscopy for nephrolithiasis in transplanted kidneys.

Swearingen R., Roberts W.W., Wolf J.S.

Embase

The Canadian journal of urology. 22(2) (pp 7727-7731), 2015. Date of Publication: 01 Apr 2015.
[Article]

AN: 612550643

INTRODUCTION: While percutaneous nephrolithotomy (PCNL) is often the procedure of choice for renal and ureteral calculi in transplant kidneys, retrograde ureteroscopy (URS) is a less frequently applied but excellent option if stone burden is small. We retrospectively examined nine surgical cases performed in seven patients in what appears to be the largest single institutional series reported to date. **MATERIALS AND METHODS:** Seven patients underwent nine retrograde URS between June of 2009 and September of 2013, by two endourologists. These cases were reviewed retrospectively.

RESULTS: Among the nine procedures, we were able to address the stone(s) endoscopically in seven. Among these procedures, laser lithotripsy was used in six cases, and basket stone extraction was applied in four procedures. Ureteral stents were placed following six procedures with ureteral access and treatment. Postoperative imaging revealed the patient to be stone free after five of the seven procedures with ureteral access and treatment. There were two postoperative urinary tract infections, and no major complications. Of the nine total procedures, six were outpatient, two were followed by observation stay < 24 hours, and one patient was admitted > 24 hours. Among the two failures, one underwent PCNL and the other had percutaneous nephrostomy (PNT) placed but expired from unrelated causes prior to the intended PCNL.

CONCLUSIONS: Retrograde URS with laser lithotripsy and/or basket extraction is a reasonable option for treating small renal transplant stones, with most patients in our series being discharged as outpatients, having complete stone clearance and avoiding PCNL.

PMC Identifier

25891337 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=25891337>]

Institution

(Swearingen, Roberts, Wolf) University of Michigan Health System, Ann Arbor, Michigan, USA

Year of Publication

2015

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Link to the External Link Resolver:

[SFX](#)

632.

Same-session bilateral retrograde intrarenal surgery for upper urinary system stones: Safety and efficacy.

Alkan E., Avci E., Ozkanli A.O., Acar O., Balbay M.D.

Embase

Journal of Endourology. 28(7) (pp 757-762), 2014. Date of Publication: 01 Jul 2014.

[Article]

AN: 373446053

Purpose: We present our experience with same-session retrograde intrarenal surgery (RIRS) for the management of bilateral upper urinary system stones (UUSS) in terms of clearance of stones, operative times, duration of hospital stay, and complications.

Material(s) and Method(s): Between November 2007 and January 2013, a total of 44 simultaneous bilateral RIRS were performed at our hospital. Initially, symptomatic sides of the patients were operated on, and, when asymptomatic, the greater stone burden was treated first. Having completed stone fragmentation with a holmium:YAG laser, larger fragments were extracted with a nitinol basket. All patients underwent noncontrast CT scanning or urinary ultrasonography 2 months after the removal of the stent to detect any residual fragments. The stone-free status was defined as no fragments and/or the presence of asymptomatic fragments <4 mm in the urinary system.

Result(s): The total stone number was 201 with a mean stone burden per patient of 30.0+/-15.4 mm (range 10-85 mm). The overall stone-free rate (SFR) was 88.6% after all procedures. The patients in this study were divided into two groups according to stone burden: Although the overall SFR was 100% for a stone burden <25 mm, the SFR was 80% for a stone burden >=25 mm (P=0.006). A Double-J stent was not placed in two patients, and they developed postoperative anuria; both cases were treated with Double-J stent placement.

Conclusion(s): Bilateral same-session RIRS is a safe and effective procedure that can be considered a first-line treatment for bilateral UUSS in select patients. The SFR is satisfactory, especially in patients with a stone burden <25 mm. At minimum a unilateral Double-J stent should be placed in patients undergoing bilateral RIRS to avoid postrenal failure. © 2014 Mary Ann Liebert, Inc.

PMC Identifier

24624975 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=24624975>]

Status

Embase

Institution

(Alkan, Acar, Balbay) Department of Urology, Memorial Istanbul Sisli Hospital, Okmeydani 34385, Sisli-Istanbul, Turkey (Avci) Department of Urology, Memorial Istanbul Atasehir Hospital,

Istanbul, Turkey

(Ozkanli) Department of Anesthesiology, Memorial Istanbul Sisli Hospital, Istanbul, Turkey

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Year of Publication

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633.

Pneumatic versus laser ureteroscopic lithotripsy: a comparison of initial outcomes and cost.

Demir A., Karadag M.A., Cecen K., Uslu M., Arslan O.E.

Embase

International Urology and Nephrology. 46(11) (pp 2087-2093), 2014. Date of Publication: 25 Oct 2014.

[Article]

AN: 53271622

Methods: Hundred and eighty-seven patients who underwent semirigid ureteroscopic lithotripsy were analyzed retrospectively in terms of age and sex of the patients; location and size of the stones; the type of probe and ancillary equipment such as guide wire, basket catheter, JJ stent requirements; irrigation amount; operation time; the cost of the anesthesia and further treatments such as a JJ stent removal operation and shock wave lithotripsy requirements and their costs.

Two groups were formed based on this type of lithotripters, pneumatic and laser lithotripsy.

Conclusions: It seems that usage of laser lithotripsy (LL) in patients with ureteral stones is more

effective than pneumatic lithotripsy (PL) in terms of operation time and SF rate. On the other hand, the mean cost of LL seems to be more expensive than PL. Urologists should think these parameters before the choice of these two treatment modalities. The higher the effectiveness, the greater the cost.

Results: Operation times (min.) in terms of the stone size, for stones <100 and >100 mm² were 20.75 +/- 10.78 and 25.82 +/- 14.23, respectively (p = 0.007). Operation times for the pneumatic and laser groups were 33.05 +/- 11.36 and 15.25 +/- 6.14, respectively (p < 0.05). The stone-free rates for pneumatic and laser groups were 89.6 % (n = 69) and 98.2 % (n = 108), respectively (p = 0.01). The mean cost of the operations for each of the study groups was 261.5 +/- 66.13 and 311.7 +/- 51.97 US\$, respectively (p = 0.001). The mean cost in terms of the stone size, for stones <100 and >100 mm², was 272.86 +/- 53.05 and 323.71 +/- 66.88 US\$, respectively (p = 0.01).

Purpose: To audit the cost of laser versus pneumatic semirigid ureteroscopic lithotripsy and to analyze their relative initial outcomes and cost.

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PMC Identifier

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Status

Embase

Institution

(Demir, Karadag, Cecen, Uslu, Arslan) Department of Urology, Kafkas Universitesi Tip Fakultesi, Kars, Turkey

Publisher

Kluwer Academic Publishers

Year of Publication

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634.

Optimizing use of the holmium:YAG laser for surgical management of urinary lithiasis.

Patel A.P., Knudsen B.E.

Embase

Current Urology Reports. 15(4) (no pagination), 2014. Article Number: 397. Date of Publication: April 2014.

[Review]

AN: 53008544

The holmium:yttrium aluminum garnet (Ho:YAG, holmium) laser is an intracorporeal lithotrite that is widely used in the surgical management of urinary lithiasis. The Ho:YAG laser is capable of fragmenting urinary stones of all compositions while maintaining a wide margin of safety. The 2140-nm wavelength of energy is transmitted from the generator to the stone using specialized silica optical fibers. The effectiveness of the laser can be impacted by the type of laser fiber used, the pulse energy and frequency settings, and the composition of the stone. This paper provides an overview of Ho:YAG laser fibers utilized for lithotripsy during ureteroscopy. We will also review current data regarding optimal energy settings and discuss our experience with different fragmentation techniques. © 2014 Springer Science+Business Media.

PMC Identifier

24532341 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=24532341>]

Status

Embase

Institution

(Patel, Knudsen) Department of Urology, Ohio State University, Wexner Medical Center, 915 Olentangy River Road, Columbus, OH 43210-1228, United States

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Current Science, Inc. (E-mail: info@current-reports.com)

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635.

Current status of ureteroscopy for stone disease in pregnancy.

Ishii H., Aboumarzouk O.M., Somani B.K.

Embase

Urolithiasis. 42(1) (pp 1-7), 2014. Date of Publication: February 2014.

[Review]

AN: 52936003

Ureteroscopic management of urolithiasis in pregnancy has been on the rise. Technological advancements such as the development of the semi-rigid or flexible ureteroscope, improvements in the design of baskets used for retrieval and the availability of laser have enabled atraumatic fragmentation of stones. We did a systematic review of literature from January 1990 to December 2012. Data were analysed separately for the time period from January 1990 to June 2010 (Period 1) and for last 2.5 years from July 2010 to December 2012 (Period 2). Inclusion criteria were all English language articles with at least three patients reported. Data were extracted on the outcomes and complications reported in the literature. A total of 271 procedures (116 in period 1, 155 in period 2) across 21 studies were reported in the last 22 years. General anaesthesia was used in 38 % (44/116) in period 1 and in 64 % (99/155) in period 2. The average stone size (7.6 mm) and stone-free rate (SFR) (85 %) were similar in both time periods. Fluoroscopy was used in 20 % (23/116) and 24 % (38/155) in period 1 and 2, respectively. There were fewer complications in period 1 (n = 9) than period 2 (n = 25). These complications were divided into obstetric (n = 5) and non-obstetric complications (n = 29). There were no maternal or foetal deaths during the 22 years. Stone treatment using ureteroscopic techniques in pregnancy can achieve a high success rate. Evidence suggests a rise in the risk of complications with increasing number of these procedures in pregnancy. © 2013 Springer-Verlag Berlin Heidelberg.

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Status

Embase

Institution

(Ishii, Somani) Department of Urology, University Hospital of Southampton, NHS Foundation Trust, SO16 6YD Southampton, United Kingdom (Aboumarzouk) Department of Urology, Academic Unit, University Hospital of Wales Heath Park, CF14 4XW Cardiff, United Kingdom
Publisher

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Year of Publication

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636.

Concomitant treatment of ureteropelvic junction obstruction and renal calculi with robotic laparoscopic surgery and rigid nephroscopy.

Zheng J., Yan J., Zhou Z., Chen Z., Li X., Pan J., Li W.

Embase

Urology. 83(1) (pp 237-242), 2014. Date of Publication: January 2014.

[Article]

AN: 52795363

Introduction The treatment of ureteropelvic junction obstruction (UPJO) and concomitant calculus poses a technically challenging situation. We present our experience with using rigid nephroscopy for renal calculi removal during robot-assisted pyeloplasty (RAP) for UPJO.

Technical Considerations From December 2010 to November 2012, 25 patients with UPJO had RAP at our institution; 9 of those had concurrent renal calculi, which were simultaneously treated with rigid nephroscopy. For stone extraction, a rigid ureteroscope was passed through an assistant trocar under laparoscopic vision directly into a previously created pyelotomy. The stones were extracted using a rigid grasper or stone basket through the rigid ureteroscope. For the removal of the stones within the upper and lower calyces, the rigid ureteroscope was introduced into the incised renal pelvis through robotic trocars if the "assistant trocar" route failed. Complete stone clearance was achieved in 8 of 9 patients. Residual calculi in 1 patient were removed with a single session of extracorporeal shock wave lithotripsy. At the mean follow-up of 10.2 months, no patients had obstruction or recurrent stones. The mean operative time was 187.1 minutes, which was 40.9 minutes longer than the mean operative time in patients without renal

calculi. There was no significant difference in blood loss, hospital stay, complications, and success rates between patients with and without renal calculi. Conclusion Our data suggest that the use of a concomitant rigid nephroscope and RAP is a safe and feasible option for the treatment of UPJO complicated with renal calculi.

PMC Identifier

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Institution

(Zheng, Yan, Zhou, Chen, Li, Pan, Li) Urological Surgery Research Institute, Southwest Hospital, Third Military Medical University, Gao Tanyan Rd 30, Chongqing 400038, China

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637.

Accuracy of endoscopic intraoperative assessment of urologic stone size.

Patel N., Chew B., Knudsen B., Lipkin M., Wenzler D., Sur R.L.

Embase

Journal of Endourology. 28(5) (pp 582-586), 2014. Date of Publication: 01 May 2014.

[Article]

AN: 372903412

Introduction: Endoscopic treatment of renal calculi relies on surgeon assessment of residual stone fragment size for either basket removal or for the passage of fragments postoperatively. We therefore sought to determine the accuracy of endoscopic assessment of renal calculi size.

Material(s) and Method(s): Between January and May 2013, five board-certified endourologists participated in an ex vivo artificial endoscopic simulation. A total of 10 stones (pebbles) were measured (mm) by nonparticipating urologist (N.D.P.) with electronic calipers and placed into separate labeled opaque test tubes to prevent visualization of the stones through the side of the tube. Endourologists were blinded to the actual size of the stones. A flexible digital ureteroscope with a 200-mum core sized laser fiber in the working channel as a size reference was placed through the ureteroscope into the test tube to estimate the stone size (mm). Accuracy was determined by obtaining the correlation coefficient (r) and constructing an Altman-Bland plot. **Result(s):** Endourologists tended to overestimate actual stone size by a margin of 0.05 mm. The Pearson correlation coefficient was $r=0.924$, with a $p\text{-value}<0.01$. The estimation of small stones (<4 mm) had a greater accuracy than large stones (≥ 4 mm), $r=0.911$ vs $r=0.666$. Altman-bland plot analysis suggests that surgeons are able to accurately estimate stone size within a range of -1.8 to +1.9 mm.

Conclusion(s): This ex vivo simulation study demonstrates that endoscopic assessment is reliable when assessing stone size. On average, there was a slight tendency to overestimate stone size by 0.05 mm. Most endourologists could visually estimate stone size within 2 mm of the actual size. These findings could be generalized to state that endourologists are accurately able to intraoperatively assess residual stone fragment size to guide decision making. © 2014 Mary Ann Liebert, Inc.

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Status

Embase

Institution

(Patel, Wenzler, Sur) Department of Urology, UC San Diego Health System, San Diego, CA, United States (Chew) Stone Centre at Vancouver General Hospital, University of British Columbia, Vancouver, Canada

(Knudsen) Department of Urology, Wexner Medical Center, Ohio State University, Columbus, OH, United States

(Lipkin) Division of Urologic Surgery, Duke University Medical Center, Durham NC, United States

(Sur) VA San Diego Healthcare System, San Diego, CA, United States

(Sur) Uniformed Services University of the Health Sciences, Bethesda, MD, United States

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638.

Flexible ureterorenoscopy for lower pole stones: Influence of the collecting system's anatomy.

Jessen J.P., Honeck P., Knoll T., Wendt-Nordahl G.

Embase

Journal of Endourology. 28(2) (pp 146-151), 2014. Date of Publication: 01 Feb 2014.

[Article]

AN: 372376230

Background: The impact of renal anatomy on the success rate of flexible ureterorenoscopy (fURS) for lower pole stones is less clear than it is on shock wave lithotripsy, for which it is a recognized influence factor. We analyzed safety and efficiency of fURS using modern endoscopes for lower pole stones dependent on the collecting system's configuration.

Patients and Methods: We retrospectively evaluated a consecutive sample of 111 fURS for lower pole stones at our tertiary care center between January 2010 and September 2012 from our prospectively kept database. All procedures were performed with modern flexible ureterorenoscopes, nitinol baskets, holmium laser lithotripsy, and ureteral access sheaths whenever needed. The infundibular length (IL) and width (IW) and infundibulopelvic angle (IPA) were measured and the data were stratified for stone-free status and complications classified by the Clavien-Dindo scale. Univariate and multifactorial statistical analyses were performed.

Correlation of operation time (OR-time) with anatomical parameters was conducted.

Result(s): Ninety-eight (88.3%) of the 111 patients were stone free after a single fURS. On multifactorial analysis, the stone size and IL had significant influence on the stone-free rate (SFR) ($p < 0.01$), whereas IW did not. An acute IPA ($< 30^\circ$) also had significant influence ($p = 0.01$). The incidence of complications and OR-time were not influenced by the pelvicaliceal anatomy.

Conclusion(s): fURS is a safe and efficient treatment option for lower pole kidney stones. A long infundibulum and a very acute IPA ($< 30^\circ$) negatively affect the SFR. However, with second look procedures, a complete stone clearance is achievable even in case of unfavorable anatomic

conditions. A narrow infundibulum has no negative effect while using modern endoscopes. The complication rate is not affected by the collecting system's anatomy. © Copyright 2014, Mary Ann Liebert, Inc. 2014.

PMC Identifier

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Status

Embase

Institution

(Jessen, Honeck, Knoll, Wendt-Nordahl) Department of Urology, Sindelfingen-Boeblingen Medical Center, University of Tübingen, Arthur-Gruber-Strasse 70, Sindelfingen 71065, Germany

Publisher

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Year of Publication

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639.

Retrograde ureteroscopic intrarenal surgery (RIRS) in patients with renal stone size larger than 2 cm.

Rivero Cardenas A., Rodriguez Garcia N., Garcia Dominguez J.M., Mena Ruiz C., Fernandez Matia G., Gutierrez Minguez E.

Embase

Urolithiasis. Conference: 2nd ESD "Experts in Stone Disease" Conference. Cape Town South Africa. Conference Publication: (var.pagings). 42(6) (pp 503-504), 2014. Date of Publication: December 2014.

[Conference Abstract]

AN: 71800172

Introduction: Retrograde intrarenal surgery (RIRS) for the management of renal stones is becoming more and more popular thanks to technological progress, such as new generation flexible ureteroscopes, Holmium laser and Nitinol baskets.

Material(s) and Method(s): From June 2013 to May 2014 we performed RIRS for renal stones larger than 2 cm on 42 patients. We treated isolated stones in 32 cases (10 lower calyx, 3 medium calyx, 5 upper calyx and 8 renal pelvis) and multiple stones in 10 cases. The mean size was 25.94 mm (r 21-45). We performed the surgery with a ureteral access sheath (13-11 Fr.), a flexible ureterorenoscope (third generation, 7.5 Fr.), Holmium laser 20 W (200 and 365 micron fibers) and Nitinol baskets (1.7 Fr.). The stone-free rate by CT was defined as the absence of stones in the kidney or residual stone fragments smaller than 3 mm, after a mean follow-up of 6 months.

Result(s): There were no intraoperative complications. The mean operating time was 98 min (r 68-190). The overall stone-free rate was 91.6 %. The mean hospital stay was 2.3 days (r 1-7). There were 4 minor complications (9 %) and 1 major complication (1 %) (Sepsis). Two patients needed a second treatment (5 %). No ureteral stenosis due to the use of the ureteral access sheath was observed.

Conclusion(s): This procedure is safe and feasible, with a high success rate and a low complication rate. Besides being an alternative to ESWL and PCNL, in selected cases, RIRS may be the treatment of choice for renal stones.

Status

CONFERENCE ABSTRACT

Institution

(Rivero Cardenes, Rodriguez Garcia, Garcia Dominguez, Mena Ruiz, Fernandez Matia, Gutierrez Minguez) Hospital Universitario, Burgos, Spain

Publisher

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640.

The use of a novel thermosensitive polymer to prevent ureteral stone retropulsion during intracorporeal lithotripsy: An initial experience.

Gauhar V., Qiu Y., Lie K.Y., Heng C.T.

Embase

Urolithiasis. Conference: 2nd ESD "Experts in Stone Disease" Conference. Cape Town South Africa. Conference Publication: (var.pagings). 42(6) (pp 502), 2014. Date of Publication: December 2014.

[Conference Abstract]

AN: 71800168

Introduction and Objectives: Use of "BackStop" was evaluated in 12 patients between March 2013 and April 2014. Eligible subjects were consenting adults with a single, radiopaque stone in the proximal ureter (defined as the upper two-thirds, above the iliac vessels crossing) for which ureteroscopic lithotripsy was indicated.

Method(s): The primary efficacy end point was the presence or absence of retropulsion. A secondary efficacy end point was the stone-free rate at follow-up. An additional secondary efficacy end point was the need for additional procedures to treat any residual stones resulting from migration. The ease of deployment and any specific difficulty encountered in the use of Backstop gel was observed and documented etc.

Result(s): In all the patients after gel deployment, stone fragmentation with holmium laser was easy with no added difficulty. None of the patients required any additional instrumentation such as basket deployment or graspers for stone retrieval intra-op. No difficulty encountered in dissolution of gel after the laser lithotripsy and intra-op retrograde pyelogram (RPG) did not show any evidence of extravasation. None of the patients were stented post-op.

Conclusion(s): Backstop appears to be feasible, safe and easy to deploy and use and definitely aids in ureteroscopy for proximal ureteric stones. The gel does not interfere with any energy modality as it has no mechanical elements. Larger series with longer follow-up are required to truly understand the nuances of this useful device. An area of research is to see if it's possible to better delineate the column of contrast intra-op and delay its disintegration to allow longer operative times.

Status

CONFERENCE ABSTRACT

Institution

(Gauhar, Qiu, Lie, Heng) Alexandra Hospital, Jurong Health, Singapore

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641.

Robotic flexible ureteroscopy, safety, effectivity and early results of a new concept.

Traxer O., Smith A., Saglam R., Rassweiler J., Preminger G., Hoenig D., Kabakci S., Koruk E., Binbay M., Sarica K.

Embase

Urolithiasis. Conference: 2nd ESD "Experts in Stone Disease" Conference. Cape Town South Africa. Conference Publication: (var.pagings). 42(6) (pp 486), 2014. Date of Publication: December 2014.

[Conference Abstract]

AN: 71800123

Objective: Despite the progress in the design of the ureteroscopes and accessories for flexible ureteroscopy, the surgeon has to perform flexible ureteroscopy procedure in a standing position with suboptimal ergonomy, which may result in orthopaedic complaints among endourologists. The radiation during the procedure is another risk for the surgeon. The Turkish company ELMED designed and developed a new robotic manipulator to remotely control all of the functions of the flexible ureteroscope. We aimed to use this robotic manipulator precisely dust the stone, while sitting on an ergonomic chair, out of the radiation zone, to protect the device and to treat larger kidney stones.

Material(s) and Method(s): The Avicenna Roboflex consists of a console and manipulator of flexible ureteroscope. The surgeon controls two joysticks to manipulate the endoscope: The right one enables deflection, a central wheel enables fine adjustment of the deflection. The left joystick

allows rotation as well as advancing and retracting the scope. The speed of rotation and advancement can be regulated at the screen of the console. The laser fiber can be remotely moved forward and backward. Integrated water pump can be adjusted also to increase or decrease the flow rate for optimal endoscopic vision.

Result(s): In the meantime, we treated eighty-one kidney stones by seven 7 different urologists. An access sheath was used in the majority of patients (n = 72). Mean fragmentation time was 46 (15-118) minutes, a mean fragmentation speed of 29.1 (18-46)mm³ per minute increasing to 32.7 mm³/min after 42 cases. Mean console time was 53 (23-135) min and mean operative time including placement of the access sheath and DJ-stent 74 (40-182) min. Complete stone disintegration was accomplished in 79 patients (96 %). Based on a questionnaire, we found a there is a significant difference when comparing the ergonomics of classical versus robot-assisted flexible ureteroscopy (total score 31.3 vs. 5.6; p <0.01) and this is true for all domains.

Conclusion(s): We could demonstrate safe and efficacious application of the device with a short learning curve by seven experienced endourologists. Future studies have to evaluate the impact of the device on clinical outcome of FURS.

Status

CONFERENCE ABSTRACT

Institution

(Traxer) Marie Curie University, Tenon Hospital, Paris, France (Smith, Hoenig) Smith's Urology Clinic, New York, NY, United States

(Saglam) Medica International Hospital, Ankara, Turkey

(Rassweiler) SLK Kliniken, Heilbronn, Germany

(Preminger) Duke University, Durham, NC, United States

(Kabakci) Hacettepe University, Ankara, Turkey

(Koruk) Department of Research and Development, ELMED, Ankara, Turkey

(Binbay) Bagcilar Training and Research Hospital, Ankara, Turkey

(Sarica) Kartal Training and Research Hospital, Istanbul, Turkey

Publisher

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2014

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642.

Staghorn kidney calculi: Mini-PCNL tubeless using a flexible nephroscope.

Rivero Cardenes A., Rodriguez Garcia N., Manso Aparicio C., Vesga Molina F., Serrano Bartolome J.M., Gutierrez Minguez E.

Embase

Urolithiasis. Conference: 2nd ESD "Experts in Stone Disease" Conference. Cape Town South Africa. Conference Publication: (var.pagings). 42(6) (pp 485), 2014. Date of Publication: December 2014.

[Conference Abstract]

AN: 71800119

Introduction: The use of flexible nephroscopes and Holmium laser with the possibility of flexible ureterorenoscopy combined approach is changing the strategy endourological approach to staghorn calculi. In this video we show a case of PCNL using a minimally invasive access to completely resolve a high burden Stone. Materials: The patient was 54 year old and had a large history of recurring renal colic and hematuria. A CT study diagnosed a Staghorn calculi localized at the renal pelvis, middle and upper calyx and a 5 cm cyst in the lower/middle pole. The patient in supine modified Valdivia position underwent ureteral catheterism, radioscope-guided puncture of the middle calyx, 18 Ch progressive dilation after introducing contrast into the cyst to exclude damage due to the dilation. Next, laser fragmentation is performed. The fragments are expelled through the Amplatz passively and extracted with a Nitinol basket. At the end the ureteroscopy check that there are no remaining fragments and the Amplatz sheath is removed without placing a nephrostomy.

Result(s): The patient had an uncomplicated procedure with complete stone clearance at the end of the procedure. The post-operative recovery was uneventful and the patient was discharged 24 h after. At a 4 month follow-up the patient was symptom free and no calculi were found.

Conclusion(s): The flexible nephroscopes facilitate a minimally invasive treatment of renal calculi in selected cases of lithiasic large masses.

Status

CONFERENCE ABSTRACT

Institution

(Rivero Cardenes, Rodriguez Garcia, Manso Aparicio, Vesga Molina, Serrano Bartolome, Gutierrez Minguez) Hospital Universitario de Burgos, Burgos, Spain

Publisher

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643.

Intraoperative incidents and complications after semirigid ureteroscopies-Single center experience on 10,001 cases.

Geavlete P., Multescu R., Geavlete B.

Embase

Urolithiasis. Conference: 2nd ESD "Experts in Stone Disease" Conference. Cape Town South Africa. Conference Publication: (var.pagings). 42(6) (pp 483), 2014. Date of Publication: December 2014.

[Conference Abstract]

AN: 71800112

Objective: To evaluate semirigid retrograde ureteroscopy intraoperative incidents and complications on a significant series of patients and to establish the factors associated with the occurrence of intraoperative complications.

Material(s) and Method(s): Between June 1994 and February 2014, 10.001 semirigid ureteroscopic procedures for ureteral lithiasis were performed in 9,124 patients. We used semirigid ureteroscopes (8/9.8 F Wolf, 8 and 10 F Storz, Olympus Endoeye digital 8.5/9.9 F).

Lithotripsy was done with pneumatic, electrohydraulic or Ho:YAG laser lithotripters.

Result(s): The stone-free rate after a single ureteroscopic procedure was 90.9 %. Intraoperative incidents occurred in 426 cases (4.3 %). These were represented by the failure to negotiate de

ureteral orifice (68 cases), or to reach the calculi due to narrowed and sinuous ureteral lumen or edema surrounding the calculi (237 cases), fixed stone baskets (69 cases), equipment damages (40 cases) or double J stent malpositioning (12 cases). All the incidents were dealt endoscopically, except one case of fixed basket that imposed open extraction. The overall rate of intraoperative complications was 2.8 % (276 cases). These were represented by lesions of the ureteral mucosa (167 cases), perforation (68 cases), bleeding (26 cases), ureteral avulsion (3 cases) and extra-ureteral stone migration (12 cases). All intraoperative complications were identified intraoperatively and treated immediately. Open surgery was necessary in only 5 cases. Conclusion(s): Due to technological advances and increased experience, the semirigid retrograde ureteroscopic treatment of ureteral lithiasis increased the efficacy, while the incidence of intraoperative complications decreased. Most of these complications are minor and can be managed by conservative approach.

Status

CONFERENCE ABSTRACT

Institution

(Geavlete, Multescu, Geavlete) Saint John Emergency Clinical Hospital, Bucharest, Romania

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644.

Dust vs. extractable fragments: Holmium laser lithotripsy mode.

Geavlete P., Multescu R., Geavlete B.

Embase

Urolithiasis. Conference: 2nd ESD "Experts in Stone Disease" Conference. Cape Town South Africa. Conference Publication: (var.pagings). 42(6) (pp 483), 2014. Date of Publication: December 2014.

[Conference Abstract]

AN: 71800111

Objective: Pyelocaliceal calculi flexible ureteroscopic approach raises problems related with operative time, associated morbidity and costs, especially by potential endoscope damage.

Material(s) and Method(s): Five series, each of 20 patients with single pyelocaliceal lithiasis were analyzed: Group I with calculi <1 cm fragmented to dust, Group II with calculi <1 cm with lithotripsy in fragments, Group III with calculi of 1-2 cm fragmented to dust, Group IV with calculi of 1-2 cm with lithotripsy in fragments, Group V with calculi of 1-2 cm fragmented to dust until they reached 1 cm, and lithotripsy in fragments afterwards. In all cases were used a flexible Story Flex-Xc ureteroscope and Ho:YAG lithotripsy.

Result(s): Ureteral access sheath was used in 70 % of the cases. Mean stone volume in groups I and II, and groups II, IV and V were similar. Success rate in all groups was statistically similar. Mean operating time was 39 min in group I, 21 min in Group II, 112 min in group III, 72 min in group IV and 51 min in group V. Minor complications occurred in 7 cases, while a single major complication occurred in group IV.

Conclusion(s): The optimal lithotripsy method of calculi <1 cm seems to be in extractable fragments. Larger calculi should be fragmented to dust until they reach 1 cm and then the lithotripsy should be continued into extractable fragments.

Status

CONFERENCE ABSTRACT

Institution

(Geavlete, Multescu, Geavlete) Saint John Emergency Clinical Hospital, Bucharest, Romania

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2014

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645.

One session in primary RIRS for bilateral ureteral stone, bilateral kidney stone, and calyx fulguration with holmium YAG laser.

Wihono F., Lilihatta J., Mesang W., Hestiningrum S., Anggie E., Winner, Manuputty E.E., Manuputty D.

Embase

BJU International. Conference: 37th Annual Scientific Meeting of the Indonesian Urological Association. Lombok Indonesia. Conference Publication: (var.pagings). 114(SUPPL. 3) (pp 22-23), 2014. Date of Publication: October 2014.

[Conference Abstract]

AN: 71787629

Introduction: Ureteroscopy has dramatically changed the management of ureteral calculi. RIRS provided significantly higher stone-free rate (86.5% vs 67.7%) and lower retreatment rate compared with ESWL (60% vs 8%). Analysis showed that stone size, location, composition, number, renal malformations, and lower pole infundibulopelvic angle had significant influence on the stone-free rate (86%) after RIRS.

Material(s) and Method(s): This is a case report study of n = 1.

Result(s): A 48-year-old woman who was admitted into our hospital with bilateral flank pain and fever. Physical examination showed bilateral costovertebral angle tenderness. She was previously treated by ESWL for bilateral kidney stones in 2011 and semi-rigid URS for left ureteral stone in 2013. A non-contrast CT urography was performed, which showed right lower calyceal stones (11.4 x 10.7 mm; 7.4 x 6.6 mm), right distal ureteral stone (18.5 x 5.5 mm), left lower calyceal stones (21.4 x 13.1 mm; 6.6 x 6 mm), left ureterovesico junction stone (3.3 x 1.9 mm). We performed bilateral semi-rigid URS to clean ureteral stones, combine with bilateral RIRS through a ureteral access sheath to disintegrate lower calyceal stones using Ho: YAG laser. When introduced the fragments were removed using nitinol tip-less basket. No prior stenting was performed in this patient during the initial assessment of the left pelvicalyces, the lower calyx containing the stone could not be identified. On a more detail inspection, a membrane was found to be covering the lower calyx orifice (Fig. 1), Ho: YAG fulguration was done on this membrane which then revealed already fragmented stones in the minor calyx (Figs 2,3).

Conclusion(s): RIRS could be performed successfully without prior stenting in already dilated ureters due distal ureteral stone obstruction and RIRS could also manage anatomical anomaly

which has caused failure of stone clearance during previous ESWL treatment. (Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Wihono, Lilihatta, Mesang, Hestiningrum, Anggie, Winner, Manuputty, Manuputty) Department of Surgery, Cikini CCI Hospital, Jakarta, Indonesia

Publisher

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2014

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646.

Iatrogenic ureteral injuries.

Mohammad Y.K., Emaddin N.G.R.Y.

Embase

International Journal of Urology. Conference: 12th Asian Congress of Urology of the Urological Association of Asia, ACU 2013. Kish Island Iran, Islamic Republic of. Conference Publication: (var.pagings). 21(SUPPL. 2) (pp A36), 2014. Date of Publication: December 2014.

[Conference Abstract]

AN: 71768089

Iatrogenic ureteral injury is a rare complication in open surgery ,laparoscopy ,and endoscopic procedures. Additionally external truma like penetrating stabs and gunshot can contribute to increasing overall incidence. Uremia ,abscess ,strictures ,fistula even loss of kidney and prolonged hospitalization are the probable outcome of ureteral injury .in this document we aim to review iatrogenic causes of ureteral injuries and their management . Based on our survey

iatrogenic ureteral injuries could be resulted after Abdomino-pelvic surgeries like gynecological operations ,colorectal surgery, removing of ovarian tumor ,trans abdominal urethropey , abdominal vascular surgery respectively in 54%,14%,8%,8% and 6% of iatrogenic ureteral cases . in modern series ureteroscopic injury especially stone basket attempt is the most common cause of Iatrogenic ureteral injury. The other causes are elongation of surgery time ,renal calculies and inexperienced surgeon that can worst the complication . the symptom of ureteral injuries are flank pain ,fever, ileus, abdominal distention and urinary fistula . There are several recommendation for prevention and mangment of iatrogenic ureteral injuries such as : Education and practice, suitable equipment ,No forceful advancement ,adjust ureteroscopic size with ureteral lumen , no pulling against resistance, establishment of guide wire ,stopping when there is unreliability, and for treatment use of ureteral stent, boari flap, psoas hitch ,auto transplantation ,ileal sub situation , omental flap, Transurethral urethrostomy ,double stent placement ,and removal of stich suture in previous gynecological surgery.

Status

CONFERENCE ABSTRACT

Publisher

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647.

Robotic flexible ureteroscopy, safety, effectivity and a early results.

Rassweiler J., Saglam R., Kabakci A.S.

Embase

European Urology, Supplements. Conference: 11th Meeting of the EAU Robotic Urology Section, ERUS 2014. Amsterdam Netherlands. Conference Publication: (var.pagings). 13(3) (pp 6-7), 2014. Date of Publication: September 2014.

[Conference Abstract]

AN: 71754147

Introduction & Objectives: Flexible ureterorenoscopy (FURS) or retrograde intrarenal surgery are rapidly evolving in the last decade based on significant improvements of the armamentarium. This approach has become a viable alternative to extracorporeal shock wave lithotripsy and percutaneous nephrolithotomy even for larger renal calculi. Despite the progress in the design of the ureterorenoscopes and accessories for flexible ureterorenoscopy, the surgeon has to perform this procedure in a standing position with suboptimal ergonomy, which may not only result in orthopaedic complaints among endourologists. It may be one of the reasons for imperfect performance of flexible ureterorenoscopy, resulting in the need of second session and frequent repair of the endoscopes.

Material(s) and Method(s): The company ELMED from Turkey designed and developed a new robotic manipulator to remotely control all of the functions of the flexible ureterorenoscope. This robot may significantly reduce the learning curve of the procedure. The Avicenna Roboflex consists of surgeons console, and manipulator of flexible ureterorenoscope. After introducing the access sheath in a usual method, the robot with draped arm comes to the operation area. The flexible ureterorenoscope is introduced in to the sheath manually and stabilized by the proximal support. Then, the hand piece of the scope is locked to the robotic arm. Finally, the laser fiber driver is attached and laser probe introduced. The entire docking manoeuvre takes less the 60 seconds. The right hand control enables deflection. A central wheel enables fine adjustment of the deflection useful during systematic dusting of the stone. The left joystick allows rotation as well as advancing and retracting the scope. The speed of rotation and advancement can be regulated at the screen of the console. The laser fiber can be remotely moved forward and backward. Integrated water pump can be adjusted also to increase or decrease the flow rate for optimal endoscopic vision.

Result(s): In the meantime, we treated more than eighty kidney stones by seven different urologists. An access sheath was used in the majority of patients (n=72). In six girls and in cases of narrow ureters (n=3), the ureterorenoscope was inserted directly following rigid ureteroscopy and placement of a guide-wire. Mean time to dock the robot was 59.6 (35-124) seconds, which decreased after 42 cases to a mean of 45.9 seconds. Mean fragmentation time was 46 (15- 118) minutes corresponding to a mean fragmentation speed of 29.1 (18-46) mm³ per minute increasing to 32.7 mm³/min after 42 cases. Mean console time was 53 (23-135) minutes and mean operative time including placement of the access sheath and DJ-stent 74 (40-182) minutes. Complete stone disintegration was accomplished in 79 patients (96%). Based on plain-X-ray and

ultrasound evaluation, after 3 months 65 patients (80%) were stone-free, whereas 16 (20%) showed clinically insignificant residual fragments. Based on a questionnaire, we found a there is a significant difference when comparing the ergonomics of classical versus robot-assisted flexible ureteroscopy (total score 31.3 vs. 5.6; $p < 0.01$) and this is true for all domains.

Conclusion(s): We could demonstrate safe and efficacious application of the device with a short learning curve by seven experienced endourologists. Future studies have to evaluate the impact of the device on clinical outcome of FURS.

Status

CONFERENCE ABSTRACT

Institution

(Rassweiler) SLK-Kliniken Heilbronn GmbH, Dept. of Urology, Heilbronn, Germany (Saglam)

Medicana International Ankara Hospital, Dept. of Urology, Ankara, Turkey

(Kabakci) Hacettepe University, Dept. of Bioengineering, Ankara, Turkey

Publisher

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648.

Lower ureteric stones and ureterorenoscopy.

Spahovic H., Efendic A., Zeljo S., Efendic E.

Embase

European Urology, Supplements. Conference: EAU 10th South Eastern European Meeting, SEEM 2014. Belgrade Serbia. Conference Publication: (var.pagings). 13(7) (pp e1614), 2014.

Date of Publication: November 2014.

[Conference Abstract]

AN: 71752688

INTRODUCTION & OBJECTIVES: To determine the efficacy and complication rate of rigid ureteroscopy (URS) in the treatment of lower ureteric calculi. **MATERIAL & METHODS:** The URS treated patients history were analysed retrospectively. Treatment with URS included 89 patients (58 men and 31 women, mean age 52 years, size range 3-11mm). All patients were treated with a 9,5F rigid ureterorenoscope. Stones were fragmented with a ultrasonic lithotripter and removal of the stone or stone fragments was mainly by forcep, also Dormia basket was used. All ureteroscopies were performed with the patient under general (n=71) or spinal (n=18) anaesthesia in a mean treatment duration of 32,5 min. The outcome was assessed by stone-free rates, re-treatment rates, time to become stone-free and complications.

RESULT(S): URS for lower ureteric calculi resulted in a success rate of 96%. Patients treated with URS were stone-free within 2 days, whereas UK sonda were in avreage 1-2 days. Removal of the stone or stone fragments was mainly by forceps (82.6%) and Dormia basket was used in 16,4% of the cases. The complications occurred during or immediately after the procedure and were minor (10.7%), ureteral perforation with stent implantation (4,49%), impaction of the instrument in the ureter with consequent ureteral erosion and laceration (6,2%), extravasation and bleeding in the urogenital tract <1%.

CONCLUSION(S): URS provides a simple, fast and safe option for the management of lower ureteric calculi with small incidence of complication.

Status

CONFERENCE ABSTRACT

Institution

(Spahovic, Efendic, Zeljo, Efendic) General Hospital Sarajevo, Dept. of Urology, Sarajevo, Bosnia and Herzegovina

Publisher

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Year of Publication

2014

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649.

A novel technique for ureteroscopic extraction of ureteric stones.

Musbahi E., Musbahi A.

Embase

Urology. Conference: 34th Congress of the Societe Internationale d'Urologie, SIU 2014. Glasgow United Kingdom. Conference Publication: (var.pagings). 84(4 SUPPL. 1) (pp S355), 2014. Date of Publication: October 2014.

[Conference Abstract]

AN: 71654762

Introduction and Objectives: Ureteric colic is an acute condition associated with pain and often requires hospital admission. With the large number of cases of ureteric stones among young active patients in Doha, Qatar there is a high expectation for rapid functional recovery. Use of semi-flexible ureteroscopes and holmium laser has made the removal of ureteric stones atraumatic. This study reviews postoperative outcome and recovery time for 200 patients with ureteric stones that underwent a novel ureteroscopic technique in one of the largest hospital in the country between 2010 and 2012. Methods and Materials: A total of 200 patients (172 men, 28 women) underwent this procedure with mean age 41 years (range: 22-65). Spiral CT was the diagnostic method. Mean stone size was 5.3mm (range: 3-16mm). The technique involves introducing the minirigid ureterscope 6.5f with a loaded 0.35f flexible end guide wire at the beginning of the procedure. No prior cystoscopic examination, retrograde or any form of dilatation of the ureter was performed. Holmium laser was used to fragment the larger stones (>5mm). A 2.3 parachute basket is introduced to retrieve fragmented stones. A survey assessed patient satisfaction and recovery time.

Result(s): Complete stone clearance was achieved in 181(91%) cases and partial clearance in 11(5.5%) cases. Operation duration was short (mean: 17.5 mins, range: 3-54 mins). No case required dilatation or prior stenting. Of all the cases, 130 (65%) required having a ureteric stent with an attached suture that was removed within 48 hours. The time lapse to return to work was 4.4 days (range: 2-7 days). No major postoperative complications occurred except 2 (1%) patients developed small perforations that were resolved conservatively. There was no significant difference in the recovery time, postop complications, and operation duration with the location of ureteric stone. Failure to reach upper ureteric stones was observed in 8 (4%) cases, requiring a double J-stent and ureterscopy ten days later.

Conclusion(s): The use of a mini-rigid ureteroscope with a loaded flexible end guide wire from the start of the procedure is a safe and efficient technique. It had minimal complications and a shorter recovery period, meeting patients' expectations.

Status

CONFERENCE ABSTRACT

Institution

(Musbahi) Basildon Hospital, Basildon, United Kingdom (Musbahi) Al-Ahli Hospital, Doha, Qatar

Publisher

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2014

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650.

Calyceal diverticular stone: Ureteroscopic management.

Bozkurt I., Yonguc T., Arslan B., Polat S., Koras O., Degirmenci T., Minareci S.

Embase

Urology. Conference: 34th Congress of the Societe Internationale d'Urologie, SIU 2014. Glasgow United Kingdom. Conference Publication: (var.pagings). 84(4 SUPPL. 1) (pp S159), 2014. Date of Publication: October 2014.

[Conference Abstract]

AN: 71654209

Introduction and Objectives: A 35 year-old man with a complaint of right flank pain was diagnosed as right calyceal diverticular stone. The patient was managed with ureterorenoscopy. Calyceal diverticula are rare outpouchings of upper urinary system that likely have a congenital origin.

Stones are found commonly in diverticula.

Material(s) and Method(s): In this video we start with performing ureteroscopy with a semirigid ureterorenoscope. We use it routinely before flexible renoscopy either for dilatation of the ureter and guidewire placement. After placement of two guidewire into the pelvis of the right kidney the flexible ureterorenoscope is passed over one of the guidewire and introduced into the renal collecting system. The rest guidewire retained as safety wire.

Result(s): Although the tip of the guidewires is very soft and thought to be asymptomatic, there is a hole seen at the upper calyx caused by traumatization of guidewire. At the left of that hole a pale area can be seen that thought to be possible neck of the diverticula. A 15 ml of contrast material was injected through the irrigation canal of the ureterorenoscope and a fluoroscopy image was obtained. After that the possible neck of the calyx was determined by visualizing the slow backflow of the contrast material. Because of the difference between specific gravity of water and contrast material the backflow could be seen very well that demonstrates the invisible calyceal neck. The specified area was insized with Holmium laser and then the contrast material was injected again and a fluoroscopy image was obtained to confirm the diverticula.

Conclusion(s): The diverticular neck was insized with Holmium laser, the stones were fragmented and replaced to renal pelvis using a nitinol basket catheter.

Status

CONFERENCE ABSTRACT

Institution

(Bozkurt, Yonguc, Arslan, Polat, Koras, Degirmenci, Minareci) Dept. of Urology, Izmir Bozyaka Training and Research Hospital, Izmir, Turkey

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Intracorporeal lithotripsy in renal stones treatment: Dust or extractable fragments?.

Multescu R., Georgescu D., Geavlete B., Satalan R., Geavlete P.

Embase

Urology. Conference: 34th Congress of the Societe Internationale d'Urologie, SIU 2014. Glasgow United Kingdom. Conference Publication: (var.pagings). 84(4 SUPPL. 1) (pp S56), 2014. Date of Publication: October 2014.

[Conference Abstract]

AN: 71653935

Introduction and Objectives: Pyelocaliceal calculi flexible ureteroscopic approach raises problems related with operative time, associated morbidity and costs, especially by potential endoscope damage.

Material(s) and Method(s): Five series, each of 20 patients with single pyelocaliceal lithiasis were analyzed: Group I with calculi < 1 cm fragmented to dust, Group II with calculi < 1 cm with lithotripsy in fragments, Group III with calculi of 1-2 cm fragmented to dust, Group IV with calculi of 1-2 cm with lithotripsy in fragments, Group V with calculi of 1-2 cm fragmented to dust until they reached 1 cm, and lithotripsy in fragments afterwards. In all cases a flexible Story Flex-Xc ureteroscope and Ho:YAG lithotripsy were used.

Result(s): Ureteral access sheath was used in 70% of the cases. Mean stone volume in groups I and II, and groups II, IV and V were similar. Success rate in all groups was statistically similar. Mean operating time was 39 min in Group I, 21 min in Group II, 112 min in Group III, 72 min in Group IV and 51 min in Group V. Minor complications occurred in 7 cases, while a single major complication occurred in Group IV.

Conclusion(s): The optimal lithotripsy method of calculi < 1 cm seems to be in extractable fragments. Larger calculi should be fragmented to dust until they reach 1 cm and then the lithotripsy should be continued into extractable fragments.

Status

CONFERENCE ABSTRACT

Institution

(Multescu, Georgescu, Geavlete, Satalan, Geavlete) Dept. of Urology, Saint John Emergency Clinical Hospital, Bucharest, Romania

Publisher

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2014

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652.

Predicting risk of complications following ureteroscopy and laser stone fragmentation.

Housami F., Malki M., Marri R., McIlhenny C.

Embase

Urology. Conference: 34th Congress of the Societe Internationale d'Urologie, SIU 2014. Glasgow United Kingdom. Conference Publication: (var.pagings). 84(4 SUPPL. 1) (pp S56), 2014. Date of Publication: October 2014.

[Conference Abstract]

AN: 71653934

Introduction and Objectives: Semi-rigid ureteroscopy and flexible ureterorenoscopy have a high stone clearance rate and low morbidity and mortality rate. The aim of this study is to identify patient, stone and procedure factors predictive of complications or readmission.

Material(s) and Method(s): Data was collected prospectively for all emergency and elective therapeutic semi-rigid ureteroscopy or flexible ureterorenoscopy for stone disease between November 2010 and October 2013. Patient, stone and procedure parameters were recorded at the time of ureteroscopy. Complications and readmission were identified and recorded at outpatient review in 3 months.

Result(s): During the study period, 305 patients underwent therapeutic ureteroscopy. Thirty five patients (12%) had recorded complications or unplanned readmission within 3 months. These included urosepsis in 6.9%, pain in 3.0% and urinary retention in 1.3%. In terms of patient related parameters, there were no significant differences in patients' age, gender, BMI or comorbidities. Patients with positive pre-operative urine culture were more likely to develop postoperative sepsis ($p=0.001$) despite appropriate antibiotic cover. As for stone related parameters, there were no significant differences in stone location, number of stones, total stone volume or mean stone density. Finally procedure related parameters showed no differences in ureteric access, ureteroscope type, operative time or presence of stent. Readmission was more likely if there were

residual fragments ($p=0.001$) or if stone was fragmented to dust with no retrieval ($p=0.009$) usually due to difficult access.

Conclusion(s): Although risk is relatively low, urosepsis remains a significant complication post ureteroscopy. Pre-operative urine culture is essential to guide choice of antibiotic.

Status

CONFERENCE ABSTRACT

Institution

(Housami, Marri, McIlhenny) Forth Valley Royal Hospital, Larbert, United Kingdom (Malki)

University Hospitals of Leicester, United Kingdom

Publisher

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653.

Use of retrograde thermo sensitive polymer "Backstop" to prevent stone migration in semi-rigid uretrorenoscopy for proximal ureteric stones: An initial experience.

Gauhar V., Heng C.T., Lie K.Y.

Embase

BJU International. Conference: UROFAIR 2014, Changing Paradigms in Urology. Suntec Singapore. Conference Publication: (var.pagings). 113(SUPPL. 3) (pp 21), 2014. Date of Publication: March 2014.

[Conference Abstract]

AN: 71603216

Introduction: To evaluate the ease and use of Backstop Gel and its feasibility in preventing stone migration in Semi-rigid Uretrorenoscopy (URS) for proximal ureteric stones.

Method(s): 10 patients with stone size from 0.7-1.2 cm size in longest dimension impacted in proximal ureter between L5 and L2 level diagnosed with contrast enhanced CT scan with varying levels of Hydronephrosis (HUN) were subjected to URS under fluoroscopic guidance with a semi rigid scope and Holmium laser after application of the Backstop Gel via a 6Fr ureteric catheter 1-3 cm proximal to the site of impaction of stone. Intra-op stone fragmentation was achieved with holmium laser and if required a zero tip Nitinol basket was used to completely remove all stones. Entire procedure for all cases was completed within 45 minutes.

Result(s): Backstop was easily deployed in all 10 cases irrespective of the degree of stone impaction. URS was done in all cases and stone accessed with ease with no impairment of vision during stone fragmentation after deployment of backstop. Ureters with Grade 1-2 HUN allowed a more longer column of backstop gel which was more resourceful as it allowed more time for stone fragmentation with Holmium laser as compared to ureters with Grade 3 HUN wherein the column of gel was smaller and needed faster stone fragmentation and hence stone extraction with basket subsequently. Average operative time was 50 minutes from intubation to completion and average time to laser fragmentation after backstop deployment was 30 minute. All 10 cases had successful stone clearance confirmed by post-op CT scan in follow-up with no additional intervention such as extra corporeal shock wave lithotripsy (ESWL) or retrograde intrarenal surgery (RIRS).

Conclusion(s): Backstop appears to be feasible, safe and easy to deploy and use. The fragmentation of stones should be completed within 45 minutes of deployment following which there will be partial dissolution of gel. Warm/room temperature saline may be preferably used as cold saline causes the gel to disintegrate. Larger studies will help further evaluate our initial findings.

Status

CONFERENCE ABSTRACT

Institution

(Gauhar, Heng, Lie) Alexandra Hospital, Jurong Health, Singapore, Singapore

Publisher

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654.

Robotic flexible ureteroscopy, safety, effectivity and early results of a new concept.

Traxer O., Saglam R., Rassweiler J.J., Preminger G.M., Hoenig D., Kabakci A.S., Koruk E., Binbay M., Sarica K., Smith A.

Embase

Journal of Endourology. Conference: 32nd World Congress of Endourology and SWL, WCE 2014. Taipei Taiwan (Republic of China). Conference Publication: (var.pagings). 28(SUPPL. 1) (pp A288-A289), 2014. Date of Publication: September 2014.

[Conference Abstract]

AN: 71599171

INTRODUCTION AND OBJECTIVES: Despite the progress in the design of the ureterorenoscopes and accessories for Flexible Ureterorenoscopy (FURS), the surgeon has to perform this procedure with a suboptimal ergonomy. We aimed to search the safety and effectivity of the Roboflex for FURS, including the ergonomics and clinical results.

METHOD(S): Roboflex Avicenna (ELMED, Ankara, Turkey) can remotely controls all functions of the FURS,. In addition it is possible to control the laser fiber. Deflection control is more precise than manual. We aimed to use this robotic manipulator precisely dust the stone, while sitting on an ergonomic chair, out of the radiation zone, to protect the device and to treat larger kidney stones. We treated eighty one kidney stones by seven different urologists and recorded the time for docking, fragmentation and stone free rate. We used a validated questionnaire for ergonomics.

RESULT(S): Mean time to dock the robot was 59.6 seconds. Mean fragmentation time was 46 minutes. Complete stone disintegration was accomplished in 79 patients (96%). Based on plain-Xray and ultrasound evaluation, after 3 months 65 patients (80%) were stone-free, whereas 16 (20%) showed clinically insignificant residual fragments (<3 mm). Based on a questionnaire, we found a significant difference when comparing the ergonomics of classical versus robot-assisted flexible ureteroscopy.

CONCLUSION(S): The Avicenna Roboflex, provides a suitable platform for FURS with significant improvement of ergonomics. We could demonstrate safe and efficacious application of the device with a short learning curve by seven experienced endourologists. Future studies have to evaluate the impact of the device on clinical outcome of FURS.

Status

CONFERENCE ABSTRACT

Institution

(Traxer) Sorbon University, Tenon Hospital, France (Saglam) Uromed Urology Group, Turkey

(Rassweiler) Heidelberg University, SLK Kliniken, Germany

(Preminger) Duke University Hospital, United States

(Hoenig, Smith) LJH, Smith's Urology Clinic, United States

(Kabakci) Hacettepe University, Department of Bioengineering, Turkey

(Koruk) ELMED Medical Systems, Dept. of R and D, Turkey

(Binbay, Sarica) Bagcilar Training and Research Hospital, Turkey

Publisher

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655.

A single dose of intraoperative antibiotics is sufficient to prevent urinary tract infection during ureteroscopy.

Flannigan R., Chew B., Ross M., Kurtz M., Gershman B., Arsovska O., Eisner B., Lange D.

Embase

Journal of Endourology. Conference: 32nd World Congress of Endourology and SWL, WCE 2014. Taipei Taiwan (Republic of China). Conference Publication: (var.pagings). 28(SUPPL. 1) (pp A213), 2014. Date of Publication: September 2014.

[Conference Abstract]

AN: 71598933

INTRODUCTION AND OBJECTIVES: AUA Best Practice Guidelines for ureteroscopic stone treatment recommend antibiotics coverage for less than 24 hours after the procedure. The purpose of this study was to evaluate if the rate of post-operative urinary tract infection (UTI) differed in patients receiving a single dose of antibiotics pre-operatively compared to those patients who also received post-operative antibiotics.

METHOD(S): A retrospective review was performed of consecutive patients at two institutions, University of British Columbia and Massachusetts General Hospital, Harvard. All patients were given a single dose of antibiotics prior to ureteroscopic stone treatment. A subset of patients were also given postoperative antibiotics ranging in time and selection of antibiotic. Patients who displayed symptoms of infection had a urine culture performed for speciation and antibiotic sensitivity.

RESULT(S): Eighty one patients underwent ureteroscopy for renal calculi. Patients with pre and post operative antibiotics were compared to those receiving only pre-operative antibiotics. Eight (9.9%) patients in total (2 from pre-operative antibiotic and 6 from the pre and post-operative antibiotic group, $P = 0.219$) developed UTI's in the post-operative period. Surgical factors such as ureteral access sheath, bilateral procedures, use of basket or laser was not associated with rates of infection or whether the surgeon prescribed post-operative antibiotics. Risk factors such as pre-operative stenting, nephrostomy tubes, and foley catheters did not differ between groups or predispose patients to post operative infections.

CONCLUSION(S): Our data suggests that post-operative antibiotics do not decrease infection rates following ureteroscopic stone treatment, even among patients with risk factors for infection. A single pre operative dose is sufficient.

Status

CONFERENCE ABSTRACT

Institution

(Flannigan, Chew, Ross, Arsovska, Lange) University of British Columbia, Canada (Kurtz, Gershman, Eisner) Massachusetts General Hospital, Harvard Medical School, United States

Publisher

Mary Ann Liebert Inc.

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656.

Ureteroscopy-assisted directionaleflow doppler ultrasound-guided mini-endoscopic combined intrarenal surgery for the management of large renal stones: Initial experience.

Inoue T., Murota T., Taguchi M., Hayashi T., Nishida T., Kawakita S., Kawabata T., Muguruma K., Kinoshita H., Matsuda T.

Embase

Journal of Endourology. Conference: 32nd World Congress of Endourology and SWL, WCE 2014. Taipei Taiwan (Republic of China). Conference Publication: (var.pagings). 28(SUPPL. 1) (pp A193), 2014. Date of Publication: September 2014.

[Conference Abstract]

AN: 71598871

INTRODUCTION AND OBJECTIVES: To assess the efficacy and safety of ureteroscopy-assisted Directional-eFlow (DeFlow) Doppler ultrasound-guided mini-endoscopic combined intrarenal surgery (mini-ECIRS) for large renal stones.

METHOD(S): From May 2013 to April 2014, 16 patients with large renal stones of ≥ 2 cm in diameter underwent D-eFlow Doppler ultrasound-guided (ALOKAalpha7) mini-ECIRS in our institution. All mini-ECIRS procedures were performed under general anesthesia with patients in a modified-Valdivia position. Stones were fragmented using a Holmium laser, miniature nephroscope, and flexible ureteroscope, then extracted with a basket.

RESULT(S): The study included 16 patients (8 male, 8 female) with a mean age of 56.9 ± 12.1 years. The collecting system was successfully accessed using a single tract in all cases. Mean stone size was 44.4 ± 18.8 mm, including one complete staghorn calculus and two partial staghorn calculi. The mean total operative and mini-ECIRS times were 145.5 ± 26 min and 96.0 ± 17.1 min, respectively. The stone-free rate on postoperative Day 1 (POD1) was 81.2%. At one month, following auxiliary procedures, the stone-free rate increased to 93.7%. The mean hemoglobin decrease was 0.38 ± 0.7 g/dl. Only minor intraoperative and postoperative complications occurred (fever ≥ 38.5 , transfusion, and perirenal hematoma on POD1: 0%), including one case of postdischarge pyelonephritis.

CONCLUSION(S): Ureteroscopy-assisted Directional-eFlow Doppler ultrasound-guided mini-ECIRS was efficient and safe for treating large renal stones. The use of Directional-eFlow Doppler ultrasound guidance for selecting the puncture line into the renal parenchyma may

minimize bleeding. However, treating larger renal stones with mini-ECIRS using a Holmium laser may result in a longer operative time associated with miniature nephroscope use.

Status

CONFERENCE ABSTRACT

Institution

(Inoue, Murota, Taguchi, Hayashi, Nishida, Kawakita, Kawabata, Muguruma) Takii-Hospital, Kansai Medical University, Japan (Kinoshita, Matsuda) Hirakata-Hospital, Kansai Medical University, Japan

Publisher

Mary Ann Liebert Inc.

Year of Publication

2014

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657.

The use of a novel reverse thermosensitive polymer to prevent ureteral stone retropulsion during intracorporeal lithotripsy: An initial experience.

Gauhar V., Qiu Y.Y., Lie K.Y., Heng C.T.

Embase

Journal of Endourology. Conference: 32nd World Congress of Endourology and SWL, WCE 2014. Taipei Taiwan (Republic of China). Conference Publication: (var.pagings). 28(SUPPL. 1) (pp A190), 2014. Date of Publication: September 2014.

[Conference Abstract]

AN: 71598862

INTRODUCTION AND OBJECTIVES: Use of "BackStop" was evaluated in 12 patients between March 2013-April 2014. Eligible subjects were consenting adults with a single, radiopaque stone

in the proximal ureter (defined as the upper twothirds, above the iliac vessels crossing) for which ureteroscopic lithotripsy was indicated.

METHOD(S): The primary efficacy end point was the presence or absence of retropulsion. A secondary efficacy end point was the stone-free rate at follow-up. An additional secondary efficacy end point was the need for additional procedures to treat any residual stones resulting from migration. The ease of deployment and any specific difficulty encountered in the use of Backstop gel was observed and documented etc.

RESULT(S): In all the patients after gel deployment, stone fragmentation with holmium laser was easy with no added difficulty. None of the patients required any additional instrumentation such as basket deployment or graspers for stone retrieval intra-op. No difficulty encountered in dissolution of gel after the laser lithotripsy and intra-op retrograde pyelogram (RPG) did not show any evidence of extravasation. None of the patients were stented post-op.

CONCLUSION(S): Backstop appears to be feasible, safe and easy to deploy and use and definitely aids in ureteroscopy for proximal ureteric stones. The gel does not interfere with any energy modality as it has no mechanical elements. Larger series with longer follow-up are required to truly understand the nuances of this useful device. An area of research is to see if it's possible to better delineate the column of contrast intra-op and delay its disintegration to allow longer operative times.

Status

CONFERENCE ABSTRACT

Institution

(Gauhar, Qiu, Lie, Heng) Alexandra Hospital, Jurong Health, Singapore

Publisher

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Year of Publication

2014

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658.

Should we add retrograde intrarenal surgery by flexible ureteroscopy following semirigid ureteroscopy for symptomatic ureteral stones?.

Kanno T., Kubota M., Nishiyama R., Okada T., Higashi Y., Yamada H.

Embase

Journal of Endourology. Conference: 32nd World Congress of Endourology and SWL, WCE 2014. Taipei Taiwan (Republic of China). Conference Publication: (var.pagings). 28(SUPPL. 1) (pp A187), 2014. Date of Publication: September 2014.

[Conference Abstract]

AN: 71598851

INTRODUCTION AND OBJECTIVES: Because residual renal stones may contribute to stone growth, symptoms or additional interventions, the goal of URS is a stone-free kidney and ureter. However, the impact of adding retrograde intrarenal surgery (RIRS) after ureteroscopic management for ureteral stones remains unknown. Therefore, we aimed at clarifying the utility of additional ipsilateral RIRS by flexible URS following semirigid URS for symptomatic ureteral stones.

METHOD(S): From January 2013 to September 2013, all patients with a simple ureteral stone and indication for ureteroscopic lithotripsy underwent additional RIRS. After treating ureteral stone using semirigid URS, ureteral access sheath was placed and RIRS by flexible URS was performed. When intrarenal calculus more than 2mm existed, those stones were managed by laser lithotripsy and/or nitinol basket. The factors that may affect the presence of intrarenal stones treated by flexible URS were analyzed.

RESULT(S): 111 patients were enrolled in this single-arm prospective study. Overall stone free rate for ureteral stone were 98% and complication rate was 6.3%. Notably, in 72 patients with renal stones detected on preoperative CT, 62 patients (86%) required managing intrarenal stones. Moreover, 18 (46%) out of 39 patients without renal stone preoperatively required managing intrarenal stones. Age, upper ureteral stone and the presence of renal stone on preoperative CT were factors independently affected the existence of intrarenal calculus during RIRS.

CONCLUSION(S): These results indicate that additional ipsilateral RIRS by flexible URS after semirigid URS for ureteral stone may be effective in patients with upper urinary stone or renal stones on preoperative CT.

Status

CONFERENCE ABSTRACT

Institution

(Kanno, Kubota, Nishiyama, Okada, Higashi, Yamada) Department of Urology, Ijinkai Takeda General Hospital, Japan

Publisher

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659.

Retrograde renal stones approach: Adjusting the holmium laser lithotripsy mode.

Multescu R., Georgescu D., Geavlete B., Satalan R., Geavlete P.

Embase

Journal of Endourology. Conference: 32nd World Congress of Endourology and SWL, WCE 2014. Taipei Taiwan (Republic of China). Conference Publication: (var.pagings). 28(SUPPL. 1) (pp A185), 2014. Date of Publication: September 2014.

[Conference Abstract]

AN: 71598846

INTRODUCTION AND OBJECTIVES: Pyelocaliceal calculi flexible ureteroscopic approach raises problems related with operative time, associated morbidity and costs, especially by potential endoscope damage.

METHOD(S): 5 series, each of 20 patients with single pyelocaliceal lithiasis were analyzed: Group I with calculi < 1 cm fragmented to dust, Group II with calculi < 1 cm with lithotripsy in fragments, Group III with calculi of 1-2 cm fragmented to dust, Group IV with calculi of 1-2 cm with lithotripsy in fragments, Group V with calculi of 1-2 cm fragmented to dust until they reached 1 cm, and lithotripsy in fragments afterwards. In all cases were used a flexible Story Flex-Xc ureteroscope and Ho:YAG lithotripsy.

RESULT(S): Ureteral access sheath was used in 70% of the cases. Mean stone volume in groups I and II, and groups II, IV and V were similar. Success rate in all groups was statistically similar. Mean operating time was 39 min in group I, 21 min in Group II, 112 min in group III, 72 min in group IV and 51 min in group V. Minor complications occurred in 7 cases, while a single major complication occurred in group IV.

CONCLUSION(S): The optimal lithotripsy method of calculi < 1 cm seems to be in extractable fragments. Larger calculi should be fragmented to dust until they reach 1 cm and then the lithotripsy should be continued into extractable fragments.

Status

CONFERENCE ABSTRACT

Institution

(Multescu, Georgescu, Geavlete, Satalan, Geavlete) Saint John Emergency Clinical Hospital,
Romania

Publisher

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660.

Intraoperative incidents and complications after 10001 semirigid ureteroscopies-single center experience.

Geavlete P., Georgescu D., Multescu R., Geavlete B.

Embase

Journal of Endourology. Conference: 32nd World Congress of Endourology and SWL, WCE 2014. Taipei Taiwan (Republic of China). Conference Publication: (var.pagings). 28(SUPPL. 1) (pp A185), 2014. Date of Publication: September 2014.

[Conference Abstract]

AN: 71598844

INTRODUCTION AND OBJECTIVES: To evaluate semirigid retrograde ureteroscopy intraoperative incidents and complications on a significant series of patients and to establish the factors associated with the occurrence of intraoperative complications.

METHOD(S): Between June 1994 and February 2014, 10001 semirigid ureteroscopic procedures for ureteral lithiasis were performed in 9124 patients. We used semirigid ureteroscopes (8/ 9.8 F Wolf, 8 and 10 F Storz, Olympus Endoeye digital 8.5/ 9.9 F). Lithotripsy was done with pneumatic, electrohydraulic or Ho:YAG laser lithotripters.

RESULT(S): The stone-free rate after a single ureteroscopic procedure was 90.9%. Intraoperative incidents occurred in 426 cases (4.3%). These were represented by the failure to negotiate de ureteral orifice (68 cases), or to reach the calculi due to narrowed and sinuous ureteral lumen or edema surrounding the calculi (237 cases), fixed stone baskets (69 cases), equipment damages (40 cases) or double J stent malpositioning (12 cases). All the incidents were dealt endoscopically, except one case of fixed basket that imposed open extraction. The overall rate of intraoperative complications was 2.8% (276 cases). These were represented by lesions of the ureteral mucosa (167 cases), perforation (68 cases), bleeding (26 cases), ureteral avulsion (3 cases) and extra-ureteral stone migration (12 cases). All intraoperative complications were identified intraoperatively and treated immediately. Open surgery was necessary in only 5 cases.

CONCLUSION(S): Due to technological advances and increased experience, the semirigid retrograde ureteroscopic treatment of ureteral lithiasis increased the efficacy, while the incidence of intraoperative complications decreased. Most of these complications are minor and can be managed by conservative approach.

Status

CONFERENCE ABSTRACT

Institution

(Geavlete, Georgescu, Multescu, Geavlete) Saint John Emergency Clinical Hospital, Romania

Publisher

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2014

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661.

Precision of ureteroscopic visual estimation of stone fragment size.

Yates J., Leone A., Tran T., Gordhan C., Thavaseelan S., Pareek G., Munver R., Afia data A.

Embase

Journal of Endourology. Conference: 32nd World Congress of Endourology and SWL, WCE 2014. Taipei Taiwan (Republic of China). Conference Publication: (var.pagings). 28(SUPPL. 1) (pp A56), 2014. Date of Publication: September 2014.

[Conference Abstract]

AN: 71598445

INTRODUCTION AND OBJECTIVES: We sought to establish the accuracy of fellowship trained endourologists in estimating in vivo stone fragment size during flexible ureterorenoscopy by comparing visual estimated size to measured size.

METHOD(S): An IRB approved prospective study was conducted with all patients undergoing laser lithotripsy for renal and ureteral stones by fellowship-trained endurologist. In all patients ureteral access sheaths were successfully placed and there was no deviation from standard management of surgeons' clinical practice. The size of 283 fragments were initially visually estimated by the surgeon from estimation based on a 200 micron laser fiber and a 0 tip nitinol basket (all cases 1.9 Fr). The stone fragment was then basket extracted using a standard 0 tip nitinol stone basket and the largest dimension of the stone was measured by the surgeon using a ruler. Accuracy of measurement was performed by creation of correlation coefficients and creation of Altman-Brand plots.

RESULT(S): Fellowship trained endourologists overall underestimated stone size by 0.138mm. The correlation coefficient was $r = 0.70$ with p value = 0.13. Stones smaller than 4mm were underestimated by 0.103mm ($R = 0.65$, $p = 0.14$) and stones larger than 4mm were underestimated by 0.3mm ($R = 0.04$, $P = 0.08$). Altman-Brand plots demonstrated that the endourologists estimated stone size within a range of - 2 to 3mm.

CONCLUSION(S): Endourologists were accurate in this study in predicting the sizes of stone fragments during ureterorenoscopy. This suggests that endourologists are well trained in making intraoperative decisions on which stone fragments to basket extract in order to achieve optimal stone free rates.

Status

CONFERENCE ABSTRACT

Institution

(Yates, Afiadata) University of Massachusetts, Medical School, United States (Leone, Tran, Thavaseelan, Pareek) Brown University/Kidney Stone Center, United States (Gordhan, Munver) Hackensack University, Medical Center, United States

Publisher

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662.

Low power, high frequency holmium laser settings facilitate stone "dusting" and minimize stone retropulsion.

Gordhan C., Christakos A., Fam M., Carpenter C., Glickman L., Munver R.

Embase

Journal of Endourology. Conference: 32nd World Congress of Endourology and SWL, WCE 2014. Taipei Taiwan (Republic of China). Conference Publication: (var.pagings). 28(SUPPL. 1) (pp A53-A54), 2014. Date of Publication: September 2014.

[Conference Abstract]

AN: 71598436

INTRODUCTION AND OBJECTIVES: Tailoring laser settings for the improvement of holmium laser stone fragmentation can improve the efficacy of the planned procedure. We report on our experience with low power, high frequency holmium laser settings for stones in the ureter in kidney.

METHOD(S): A review of 37 consecutive patients that underwent ureteroscopic holmium laser lithotripsy of ureteral or renal calculi was performed at a single institution. Laser settings were selected with an energy setting of 0.2 J and 40 Hz. Patient demographics and perioperative parameters were assessed.

RESULT(S): 37 patients, with a mean age of 59.4 years (25-80) were treated ureteroscopically for renal (n = 26) or ureteral calculi (n =11). The mean aggregate stone burden was 1.72cm (0.8-3.5 cm). In 6 cases (16.2%), the energy was increased to 0.3 J or 0.4 J. In 3 (8.1%) cases, conventional settings (0.6 J-1.0 J, rate 6-8 Hz) were required due to harder stone compositions. In the 3 cases where conventional settings were used, the laser fiber required trimming, and a stone basket was used in these cases. In cases where stones were completely fragmented into sizes 1mm or less, no basketing was required. No bleeding complications, strictures, or injury to the ureter or kidney was encountered in any of the procedures.

CONCLUSION(S): When using a 100W holmium laser, selecting low power, high frequency settings results in minimal retropulsion, and facilitates stone fragmentation that obviates the need for stone basketing. It is important to note that for harder stones, these settings can be increased in order to achieve optimal fragmentation.

Status

CONFERENCE ABSTRACT

Institution

(Gordhan, Christakos, Fam, Carpenter, Glickman, Munver) Hackensack University, Medical Center, United States (Gordhan, Christakos, Fam, Carpenter, Munver) Rutgers-New Jersey Medical School, United States

(Munver) John Theurer Cancer Center, United States

Publisher

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663.

Percuflex helical ureteral stent provides excellent patient comfort and upper tract drainage.

Chew B.H., Arsovska O., Lange D., McDougall E., Paterson R.F.

Embase

Journal of Endourology. Conference: 32nd World Congress of Endourology and SWL, WCE 2014. Taipei Taiwan (Republic of China). Conference Publication: (var.pagings). 28(SUPPL. 1) (pp A50-A51), 2014. Date of Publication: September 2014.

[Conference Abstract]

AN: 71598426

INTRODUCTION AND OBJECTIVES: Ureteral stent discomfort is a problem. A novel helically cut Percuflex stent (Boston Scientific) was developed to follow the shape of the ureter to improve patient comfort. We sought to determine its comfort in a prospective single-arm study of patients undergoing ureteroscopy for stone disease.

METHOD(S): A 6F Percuflex Helical ureteral stent (Boston Scientific Corporation) was placed in patients following successful ureteroscopy. Patients filled out a visual analog score (VAS) and analgesic record at regular intervals.

RESULT(S): Fifteen (10M:5F) patients were enrolled. Stent remained in 7.3 +/- 1.2 d and mean stone size was 11.5 +/- 1.9mm. Ureteral access sheath was used in 20% of cases, 0% balloon dilation, 0% pre-stented, basket in 33%, and 100% of cases used holmium: YAG laser. There were no intraoperative complications. Two developed UTI post-op. Three required unscheduled visits for pain or infection and all resolved. Flank and lower abdominal pain, urgency and frequency were never statistically significantly different from baseline levels. Urethral pain was the only parameter significantly worse on post-operative day 1 ($p=0.017$) and day 2 ($p=0.037$) compared to baseline levels in the stented patients, but this resolved by day 7. 60% of patients did not require medications in the recovery room or 4 weeks following surgery. 82% of patients were satisfied and of 5 patients who had stents previously, 4 (80%) reported the Helical stent to be more comfortable.

CONCLUSION(S): The Percuflex Helical stent is a very welltolerated stent in patients following uncomplicated ureteroscopy. The Helical stent may be more comfortable than regular double-J stents. Further studies will be necessary.

Status

CONFERENCE ABSTRACT

Institution

(Chew, Arsovska, Lange, McDougall, Paterson) Stone Centre at Vancouver General Hospital, University of British Columbia, Canada

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664.

In vitro evaluation of the lithassist: Optimizing laser lithotripsy during percutaneous stone surgery.

De S., Omar M., Monga M., Sivalingam S.

Embase

Journal of Endourology. Conference: 32nd World Congress of Endourology and SWL, WCE 2014. Taipei Taiwan (Republic of China). Conference Publication: (var.pagings). 28(SUPPL. 1) (pp A33), 2014. Date of Publication: September 2014.

[Conference Abstract]

AN: 71598373

INTRODUCTION AND OBJECTIVES: The LithAssist (Cook Medical, Bloomington IN) is a new disposable handle, which integrates laser fiber use with on- demand suction, attempting to enhance user control and fragment clearance. Our objective was to evaluate LithAssist's (LA) usability and efficacy using in vitro calyceal and bladder stone models.

METHOD(S): Bego stones (1 cm) were used in calyceal models, whereas bladder models used large (2.5-3 cm) rehydrated uric acid stones. LA was inserted through the working channel of a 24Fr nephroscope and connected to suction. The device was tested using 1000lm laser fiber at two settings (L1: 0.8 J/8 Hz, L2: 0.2 J/20 Hz), and the pneumatic StoneBreaker (Cook Medical, SB). The handle was removed and a bare laser fiber (L3: 0.8 J/8 Hz) and Cyberwand (CW) were tested. Three trials (60 s/ trial) were repeated for each.

RESULT(S): Calyceal Stone: CW had the greatest residual stone dry weight reduction (CW 8.9%, L1 2.48%, L2 3.57%, SB 0.41%, L3 0.91% $p < 0.001$). SB produced the greatest number of

fragments/stone (SB 12.13, CW 6.01, L1 3.17, L2 0.92, L3 0.94 p = 0.031). Similar findings were observed for the larger soft bladder stones, though dusting was significantly more effective than fragmentation settings with and without the handle (L2 2.1% vs L1 0.4%, L3 0.01% p = 0.021).
CONCLUSION(S): During rigid nephroscopy the LithAssist provides straightforward control of the laser fiber and on-demand suction, while eliminating the need for assistance with suction. Dusting settings appear more appropriate with the LA, however the efficacy of laser lithotripsy for larger stones remains limited - with or without the use of this device.

Status

CONFERENCE ABSTRACT

Institution

(De, Omar, Monga, Sivalingam) Cleveland Clinic, United States

Publisher

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2014

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665.

Optimal holmium laser lithotripsy settings for the intrarenal and ureteric calculi.

Faaborg D., Li R., Maldonado J., Lightfoot M., Alsyof M., Yeo A., Olgin G., Arenas J.L., Baldwin D.D.

Embase

Journal of Endourology. Conference: 32nd World Congress of Endourology and SWL, WCE 2014. Taipei Taiwan (Republic of China). Conference Publication: (var.pagings). 28(SUPPL. 1) (pp A4), 2014. Date of Publication: September 2014.

[Conference Abstract]

AN: 71598282

INTRODUCTION AND OBJECTIVES: The efficiency of Ho:YAG laser lithotripsy depends on an interplay between laser pulse energy, pulse frequency, and stone retropulsion. The purpose of this study was to compare conventional and stone dusting settings for ureteroscopic lithotripsy in a bench-top calyceal and ex vivo ureteral model.

METHOD(S): Pure human calcium oxalate monohydrate stones were fragmented using a 200µm Holmium laser fiber deployed in a flexible ureteroscope using an in-vitro calyceal and ex-vivo porcine ureteral model. In the calyceal model, stone fragmentation using 0.6 J/5 Hz, 0.2 J/15 Hz, and 0.2 J/50 Hz settings were compared. In the ureter, the fragmentation time, retropulsion rate, fragmentation rate, and stone weight fragmented using settings of 0.6 J/5 Hz and 0.2 J/15 Hz were compared. Stone retropulsion forces generated by the 0.6 J/5 Hz, 0.2 J/15 Hz, and 0.2 J/50 Hz settings were also measured and compared. Statistical analysis was performed using the Mann-Whitney U test.

RESULT(S): In the calyceal model, the 0.6 J/5 Hz and the .2 J and 50 Hz setting had similar fragmentation rates, ($p = 0.413$). In the ureteral model, the 0.6 J/5 Hz setting produced greater retropulsion and 20/20 (100%) of stones migrated outside the ureter, compared to 12/20 (60%; $p = 0.003$) using .2 J/15 Hz which subsequently resulted in greater fragmented volume (16.8 mg vs 25.5 mg; $p = 0.009$). Increasing the energy was noted to increase retropulsion, but increasing the frequency did not.

CONCLUSION(S): Laser lithotripsy in the ureter was most effective using the 0.2 J/15 Hz setting due to decreased retropulsion, while the 0.6 J/5 Hz and 0.2 J/50 Hz settings performed similarly in the calyceal model.

Status

CONFERENCE ABSTRACT

Institution

(Faaborg, Li, Maldonado, Lightfoot, Alsayouf, Yeo, Olgin, Arenas, Baldwin) Loma Linda University, Medical Center, United States

Publisher

Mary Ann Liebert Inc.

Year of Publication

2014

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666.

Role of frusemide in prevention of stone retropulsion during URSL.

Reddy G., Shivashankarappa M., Ali I.

Embase

Indian Journal of Urology. Conference: 47th Annual Conference of Urological Society of India, USICON 2014. New Delhi India. Conference Publication: (var.pagings). 30(SUPPL. 1) (pp S65), 2014. Date of Publication: January 2014.

[Conference Abstract]

AN: 71490970

Introduction: There are various methods employed in prevention of stone retropulsion during URSL including stone cone, basket, umbrella, instillation of lignocaine jelly and intra operative frusemide, we compared pre induction frusemide with intra operative frusemide in prevention of stone retropulsion during URSL.

Objective(s): To evaluate usefulness of pre induction frusemide in prevention of stone retropulsion during URSL.

Material(s) and Method(s): A total of 48 patients with 5 to 18mm ureteral stones during period of Aug 2012 to July 2013 undergoing URSL using pneumatic lithotripsy were randomized into two groups alternatively. Group A (23 patients) in whom pre induction frusemide (0.5/1mg per Kg) was given before spinal anaesthesia, after pre loading with one liter of RL and Group B(25 patients)intra operative frusemide given after visualization of calculi, ureteroscopy was performed using an 9.8/8 Fr ureteroscope and lithotripsy was performed with swiss lithoclast.

Result(s): The two groups comparable with regard with age and stone size, stone fragment migration occurred in one case of group A and 8 cases of group B.

Conclusion(s): Pre induction frusemide helps in prevention of stone retropulsion during URSL, definitive evidence requires larger study.

Status

CONFERENCE ABSTRACT

Institution

(Reddy, Shivashankarappa, Ali) Vijayanagar Institute of Medical Sciences, Bellary, India

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Year of Publication

2014

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667.

Initial experience of ultra mini PCNL (UMPL).

Joshi N.

Embase

Indian Journal of Urology. Conference: 47th Annual Conference of Urological Society of India, USICON 2014. New Delhi India. Conference Publication: (var.pagings). 30(SUPPL. 1) (pp S64), 2014. Date of Publication: January 2014.

[Conference Abstract]

AN: 71490965

Introduction and Objective: Management of renal calculi needs a tailor made plan. RIRS (retrograde intra renal surgery), UMPL & needle PCNL are available options for ESWL resistant calculi.

Material(s) and Method(s): UMPL is done in renal stones of 10 to 18 mm size. Stones were (i) In lower calyces. (ii) In calyces with a narrow neck. (iii) Not accessible by antegrade or retrograde nephroscopy. After initial 12 Fr Teflon dilatation, safety guide wire is placed. 11 Fr or 13 Fr Sheath is used as per the requirement. Holmium laser is used for stone fragmentation. Stone retrieval is done by flushing through the outer sheath or special Dormia basket. No nephrostomy is placed. Cut off value of residual stone was 2 mm on ultrasonography done after 1 month.

Result(s): All UMPL procedures were successfully accomplished. Stone clearance rate was 90%. No major complication occurred. Patients were discharged within 1 day of admission. Almost no post operative pain observed.

Conclusion(s): Advantages 1. Painless procedure. 2. Short hospital stay. 3. Stone retrieval by flushing with saline. 4. Stone is available for the analysis. 5. Easy and fast entry. 6. Less costly and more durable than RIRS.

Limitation(s): 1. Small field of view due to smaller scope. 2. Stone migration may lead to non retrieval of the stone. 3. Delicate scope needs due care. 4. Coexisting Ureteric stones has to be managed by RIRS. 5. As no nephrostomy is left behind, re - nephroscopy is not possible for residual stones.

Status

CONFERENCE ABSTRACT

Institution

(Joshi) NMC Specialty Hospital, Al Ain, United Arab Emirates

Publisher

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2014

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668.

Single-stage laparoscopic management of impacted large proximal ureteric stone with concomitant multiple renal stones.

Tan T.W., Tan B.W., Chia S.J., Png K.S.

Embase

European Urology, Supplements. Conference: 29th Annual Congress of the European Association of Urology, EAU. Stockholm Sweden. Conference Publication: (var.pagings). 13(1) (pp eV41), 2014. Date of Publication: April 2014.

[Conference Abstract]

AN: 71486177

INTRODUCTION & OBJECTIVES: Impacted, large proximal ureteric stone with concomitant renal stones present a endourological challenge in achieving stone-free status. MATERIAL &

METHODS: Our patient presented with an impacted 3cm left upper ureter stone and three lower pole renal stones measuring 1.3cm, 1.2cm and 0.9cm in size.

RESULT(S): After anaesthesia, left retrograde pyelogram was performed and a ureteric stent inserted. The patient was repositioned in lateral position. Pneumoperitoneum was created and 4 ports were placed in a diamond configuration using three 12 mm ports and one 5 mm port. After exposing the ureter, the stone was identified and ureter was mobilised circumferentially around the stone. A nylon tape was slung proximal to the stone to prevent its proximal migration. An ureterotomy was made and the stone retrieved and placed in an entrapment bag. Full-thickness stay sutures were placed on both edges of the ureterotomy. A 16F flexible cystoscope was introduced through a 12 mm port into the ureterotomy and passed into the kidney. All three renal stones were retrieved with basket and removed. The ureterotomy was closed with interrupted polyglycolic sutures over the existing stent. Operating time was 180 minutes and estimated blood loss was 50 ml.

CONCLUSION(S): Laparoscopic ureterolithotomy with laparoscopic-guided ureteroscopic extraction of renal stones is an efficient technique in managing large impacted ureteric stones with concomitant renal stones.

Status

CONFERENCE ABSTRACT

Institution

(Tan, Tan, Chia, Png) Tan Tock Seng Hospital, Dept. of Urology, Singapore, Singapore

Publisher

Elsevier

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2014

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669.

Xenx (Xenolith), a new anti-repulsion device in the treatment of ureteral stones: A multicenter European study.

Macchione N., Longo F., Sanguedolce F., Kachrilas S., Masood J., Bucholz N., Hruby S., Montanari E.

Embase

European Urology, Supplements. Conference: 29th Annual Congress of the European Association of Urology, EAU. Stockholm Sweden. Conference Publication: (var.pagings). 13(1) (pp eV6), 2014. Date of Publication: April 2014.

[Conference Abstract]

AN: 71486142

INTRODUCTION & OBJECTIVES: Stone migration during ureteroscopic lithotripsy leads to additional procedures for residual calculi. This is the first study evaluating in the clinical practise the efficacy of the XenxTM (Xenolith Medical, Israel), which is a device designed to combine guide-wire and stone retention functionalities. **MATERIAL & METHODS:** Between March and May 2013, 18 patients recruited across 3 European stones centres underwent ureteroscopy and laser fragmentation using Xenx as retention device and 0.038 inch guidewire, for the treatment of ureteral stones of 1 cm in mean size. Demographics, complication rates and surgical outcomes were prospectively collected; similarly, subjective evaluation with a Likert-like 5- grade scoring system (1= very bad; 5= very good) was provided by the surgeons with regards to Xenx properties, as by pushability satisfaction, ease of deployment, full expansion and coaptation to ureter walls, kink resistance, stone retention capabilities, device retrieval, ease of stenting, device radiopacity, ease of basketing. Stone-free condition was defined as the absence of residual fragments; it was evaluated intra-operatively by fluoroscopy or endoscopy (flexible ureteroroscopy), at day-1 post-op by US-KUB or X-ray KUB, and at 1- month follow-up by NCCT scan (available in 8 patients).

RESULT(S): There were 12 male and 6 female, with a mean age of 48 yo (range: 22-77 ys); all the patients had a single and unilateral ureteral stone (8 right and 10 left sided). Mean stone size was 8.6 mm (range 4-15 mm), located in 81.25% of the cases in the proximal ureter. Mean operative time was 32 minutes (S.D. 14 mins) and mean hospital stay was 2.69 (range 1-4 days). No complications have been reported. SFRs and evaluation modalities are reported in table 1. Median operators' evaluations for Xenx were "Good" for all the domains surveyed.

CONCLUSION(S): This preliminary study shows that Xenx is an innovative device which might combine effectively and safely the stone retention and the guide-wire functionalities in just one instrument. Larger and comparative studies are needed to confirm these results. (Table presented).

Status

CONFERENCE ABSTRACT

Institution

(Macchione, Longo, Montanari) San Paolo Hospital, Dept. of Urology, Milan, Italy (Sanguedolce, Kachrilas, Masood, Bucholz) Royal London Hospital, Dept. of Urology, London, United Kingdom (Hruby) Paracelsus Medical University, Dept. of Urology, Salzburg, Austria

Publisher

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Year of Publication

2014

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670.

Selecting the right Ho: Laser intracorporeal lithotripsy mode during retrograde flexible ureteroscopic approach.

Multescu D.R., Georgescu D., Nita G., Dragutescu M., Geavlete B., Satalan R., Geavlete P.

Embase

European Urology, Supplements. Conference: 29th Annual Congress of the European Association of Urology, EAU. Stockholm Sweden. Conference Publication: (var.pagings). 13(1) (pp eV1), 2014. Date of Publication: April 2014.

[Conference Abstract]

AN: 71486137

INTRODUCTION & OBJECTIVES: Pyelocaliceal calculi flexible ureteroscopic approach raises problems related with operative time, associated morbidity and costs, especially by potential endoscope damage. MATERIAL & METHODS: 5 series, each of 20 patients with single pyelocaliceal lithiasis were analysed: Group I with calculi < 1 cm fragmented to dust, Group II with calculi < 1 cm with lithotripsy in fragments, Group III with calculi of 1-2 cm fragmented to dust, Group IV with calculi of 1-2 cm with lithotripsy in fragments, Group V with calculi of 1-2 cm

fragmented to dust until they reached 1 cm, and lithotripsy in fragments afterwards. Flexible Storz Flex-Xc ureteroscope and Ho:YAG lithotripsy were used in all cases.

RESULT(S): Ureteral access sheath was used in 70% of the cases. Mean stone volume in groups I and II, and groups II, IV and V were similar. Success rate in all groups was statistically similar. Mean operating time was 39 min in group I, 21 min in Group II, 112 min in group III, 72 min in group IV and 51 min in group V. Minor complications occurred in 7 cases, while a single major complication occurred in group IV.

CONCLUSION(S): The optimal lithotripsy method of calculi < 1 cm seems to be in extractable fragments. Larger calculi should be fragmented to dust until they reach 1 cm and then the lithotripsy should be continued into extractable fragments.

Status

CONFERENCE ABSTRACT

Institution

(Multescu, Georgescu, Nita, Dragutescu, Geavlete, Satalan, Geavlete) Saint John Clinical Emergency Hospital, Dept. of Urology, Bucharest, Romania

Publisher

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Year of Publication

2014

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671.

Semi-rigid ureteroscopy for management of ureteric calculi in children: Experience in 117 cases.

Sakr A.M.N., Dawod T., Teleb M., Ragab A.A., Elsayed E.R., Maarouf A.M., Khalil S.A.S., Shahin A.M.S., Kamel H.

Embase

European Urology, Supplements. Conference: 29th Annual Congress of the European Association of Urology, EAU. Stockholm Sweden. Conference Publication: (var.pagings). 13(1) (pp e559), 2014. Date of Publication: April 2014.

[Conference Abstract]

AN: 71485560

INTRODUCTION & OBJECTIVES: Ureteroscopy (URS) is the standard of care for ureteric calculi in adults and recently in pediatric age group after the refinements and miniaturization of ureteroscopies and its ancillary instruments. Herein in this retrospective study, we tried to present our experience in URS for ureteric calculi in children. **MATERIAL & METHODS:** Retrospectively we reviewed our institutional data base for all patients under 18 years old or less who underwent URS procedures between February 2006 and May 2013. The instruments used were semi-rigid compact fiber uretero-roscope 6 - 7.5 Fr, pneumatic lithotripsy probe 1.9 - 2.5 Fr and dormia basket 3.8 Fr. Patient characteristics were recorded including sex, age, stone size and level, operative data, duration of surgery, complications, ureteral stenting and follow-up schedule.

RESULT(S): One hundred and seventeen patients were included in this retrospective study. Of those patients, 78 (66.7%) were male and 39 (33.3%) were female. Their mean age was 6.4 (range 1.5-17years). Number of ureteroscopies done were 125 (5 patients needed two ureteroscopies and 3 patients had bilateral stones). Location of the stones were lower ureteric in 76 (65%), middle in 23 (19.6%) and upper in 18 (15.4%). Mean stone size was 7.5 (range 6 - 15mm). Ureteric dilation was attempted in 43 patients either with Teflon or balloon dilators. Duration of the surgery ranged from 20 to 90 min with mean of 45. Over all stone free rate was 87.1% and according to the stone location 79.2% , 87.6% and 94.7% for upper, middle and lower ureteric stones respectively. Eighty two cases were stented either with double j stent (3.8 - 5 french) in 33 cases for 2-4 weeks or ureteric catheters (4-5 french) in 49 cases for 3-5 days. Overall intra and postoperative complications were 22.2% , 13% and 7.8% for upper, middle and lower ureteric stones procedures respectively.

CONCLUSION(S): In expert hands, semi-rigid ureteroscopy is a safe and effective procedure for management of ureteric calculi in pediatric age group.

Status

CONFERENCE ABSTRACT

Institution

(Sakr, Dawod, Teleb, Ragab, Elsayed, Maarouf, Khalil, Shahin, Kamel) Zagazig University, Dept. of Urology, Zagazig, Egypt

Publisher

Elsevier

Year of Publication

2014

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672.

Contemporary management of large renal calculi with flexible ureterorenoscopy and laser lithotripsy.

Yeates A., Kua B.

Embase

BJU International. Conference: 67th Annual Scientific Meeting of the Urological Society of Australia and New Zealand. Brisbane, QLD Australia. Conference Publication: (var.pagings). 113(SUPPL. 4) (pp 58), 2014. Date of Publication: March 2014.

[Conference Abstract]

AN: 71408621

Introduction: Advances in technology surrounding flexible ureterorenoscopy (FURS) and Holmium:YAG Laser stone ablation has increased the success rate of renal stone clearance. It has also increased the feasibility of treating complex and large renal calculi (> 20 mm) using FURS and laser compared with percutaneous nephrolithotomy which is a comparatively morbid operation. This cohort study highlights the outcomes of thirteen patients with renal calculi > 20 mm treated with FURS and laser. To date there has been no known published series in Australia and New Zealand looking at treatment of large renal calculi with FURS.

Patients and Methods: A retrospective review was performed of 13 patients undergoing FURS from July 2011 to May 2013. Only patients with either a single calculus or multiple calculi with a combined diameter greater than 20 mm located within the renal pelvis or proximal ureter were included in the study. A 9.9 Fr Olympus digital flexible ureterorenoscope (URF-V, Olympus Medical Systems, Japan) was used for renal access. Endoscopic fragmentation and ablation of calculi was performed with a 200 and 365 micrometer Holmium:YAG laser fibre. A 14/16 Fr ureteric access sheath (Cook Medical, USA) was used routinely. A ureteric stent was inserted when required. Post operative follow up was performed using appropriate imaging (CT or XR).

Successful clearance was defined intraoperatively as visual clearance of the renal tract with fragments too small to retrieve with a basket and on follow up as fragments of less than 2 mm on surveillance imaging. Measured outcomes included: stone clearance rate, operative time, number of procedures to stone clearance, complication rate and recurrence-free follow up period.

Result(s): 92% of followed-up patients (11/12, median follow up 11 months) had successful calculi clearance with staged procedures. Median number of procedures to achieve clearance was 1.66. Six patients required a single procedure, while seven patients required two procedures to achieve clearance. Median operative time was 80.5 minutes (range 30-158 min first procedure, 10-91 min second procedure). Median length of stay was 2 days/1 night. 4/13 patients had a stent prior to their initial procedure, all 13 had a stent inserted afterwards. 3/7 patients with a second procedure had a stent postoperatively. 2/13 had a complication (ileus conservatively managed for 3 days; candida-positive blood culture nine days postop required inpatient admission and stent removal).

Conclusion(s): FURS and laser is an effective treatment modality for complex and large renal calculi providing a feasible, safer option to PCNL when counselling patients. FURS requires longer operative time and staged procedures. It should be offered to patients as an option for treatment of large renal calculi.

Status

CONFERENCE ABSTRACT

Institution

(Yeates, Kua) Redcliffe Hospital, Brisbane, Australia

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Blackwell Publishing Ltd

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Accuracy of endoscopic intraoperative assessment of kidney stone size.

Patel N., Chew B., Knudsen B., Lipkin M., Wenzler D., Sur R.L.

Embase

Journal of Urology. Conference: 2014 Annual Meeting of the American Urological Association, AUA. Orlando, FL United States. Conference Publication: (var.pagings). 191(4 SUPPL. 1) (pp e868), 2014. Date of Publication: April 2014.

[Conference Abstract]

AN: 71402287

INTRODUCTION AND OBJECTIVES: Endoscopic treatment of renal calculi relies on surgeon assessment of residual stone fragment size for either basket removal or for the passage of fragments postoperatively. We therefore sought to determine the accuracy of endoscopic assessment of renal calculi size.

METHOD(S): Five board certified endourologists participated in an ex vivo artificial endoscopic simulation. A total of 10 pebbles were measured (mm) by non-participating urologist (NDP) with electronic calipers and placed into separate labeled opaque test tubes to prevent visualization of the stones through the side of the tube. Endourologists were blinded to the actual size of the stones. A flexible digital ureteroscope with a 200-micron core sized laser fiber in the working channel as a size reference was placed thru the ureteroscope into the test tube to estimate the stone size (mm). Accuracy was determined by obtaining correlation coefficient (r) and constructing an Altman-Bland plot.

RESULT(S): Endourologists tended to overestimate actual stone size by a margin of 0.05 mm. The Pearson correlation coefficient was $r = 0.924$, with a $p\text{-value} < 0.01$. Altman-bland plot analysis suggests that surgeons are able to accurately estimate stone size within a range of -1.8 to + 1.9 mm.

CONCLUSION(S): This ex-vivo simulation study demonstrates that endoscopic assessment is reliable when assessing stone size. On average, there was a slight tendency to over-estimate stone size by 0.05 mm. Most endourologists could visually estimate stone size within -1.8 to +1.9 mm of the actual size. These findings could be generalized to state that endourologists are accurately able to assess residual stone fragment size intra-operatively to guide decision-making. (Graph Presented).

Status

CONFERENCE ABSTRACT

Institution

(Patel, Wenzler, Sur) San DiegoCAUnited States (Chew) VancouverCanada

(Knudsen) ColumbusOHUnited States

(Lipkin) DurhamNCUnited States

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Year of Publication

2014

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674.

Direct visualization percutaneous nephrolithotomy without fluoroscopy.

Huang G., Alsyounf M., Arnold D., Olgin G., Li R., Lightfoot M., Baldwin D.D.

Embase

Journal of Urology. Conference: 2014 Annual Meeting of the American Urological Association, AUA. Orlando, FL United States. Conference Publication: (var.pagings). 191(4 SUPPL. 1) (pp e847), 2014. Date of Publication: April 2014.

[Conference Abstract]

AN: 71402236

INTRODUCTION AND OBJECTIVES: Percutaneous nephrolithotomy (PCNL) remains a challenging procedure associated with significant potential for patient morbidity. In an attempt to decrease the morbidity of PCNL, we have developed a novel technique employing direct visualization with ureteroscopy to decrease ambiguity associated with fluoroscopy guidance, while eliminating ionizing radiation exposure. In this video, we demonstrate PCNL techniques that obviate the need for fluoroscopy.

METHOD(S): This video demonstrates fluoroless PCNL in a 56 year-old female with large left renal stone burden (>4 cm). The patient was positioned prone and split-leg. Utilizing visual and tactile cues, a super-stiff and standard guidewire were placed from below using a flexible cystoscope. Using flexible ureteroscopy, the ideal calyx for access was selected. Under ultrasound guidance, an access needle was placed into the selected calyx, which was directly visualized on ureteroscopy. With the aid of a stone basket, an access wire was pulled into the

ureter to allow for subsequent exchange to a super-stiff guidewire. Under direct visualization with the ureteroscope, the balloon and access sheath were positioned. The ureteroscope was left with the tip occluding the ureteropelvic junction to prevent distal migration of fragments. Stone comminution was accomplished with an ultrasonic lithotripter. Stone-free status was assured intraoperatively using a combination of flexible nephroscopy and ureteroscopy. A nephrostomy tube and multipurpose angled ureteral catheter were placed under direct vision ureteroscopically to conclude the procedure.

RESULT(S): Operative time was 4 hours 36 minutes. Estimated blood loss was <50 mL. On post-operative day one, a 15 mAs low-dose CT (<1 mSv) demonstrated stone-free status.

CONCLUSION(S): This technique combines the methods of many pioneering endourologic surgeons in a unique way to perform PCNL under direct visualization. We believe this technique offers significant promise both by eliminating uncertainties encountered when operating under fluoroscopic guidance and reducing the risk of radiation exposure to patients and operating room staff.

Status

CONFERENCE ABSTRACT

Institution

(Huang, Alsyouf, Arnold, Olgin, Li, Lightfoot, Baldwin) Loma LindaCAUnited States

Publisher

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Year of Publication

2014

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675.

The effects of stone dusting settings on ureteral and calyceal stones in a bench top model.

Li R., Maldonado J., Lightfoot M., Alsyounf M., Yeo A., Vassantachart J., Martin J., Lee M., Olgin G., Baldwin D.D.

Embase

Journal of Urology. Conference: 2014 Annual Meeting of the American Urological Association, AUA. Orlando, FL United States. Conference Publication: (var.pagings). 191(4 SUPPL. 1) (pp e210), 2014. Date of Publication: April 2014.

[Conference Abstract]

AN: 71400711

INTRODUCTION AND OBJECTIVES: Studies have shown higher stone fragmentation and retropulsion rates associated with higher pulse energy settings using the Ho:YAG laser. However, the optimal settings for laser lithotripsy in the kidney and ureter have not been defined. The purpose of this study was to compare conventional holmium laser settings with high frequency low energy (stone dusting) settings using in-vitro calyceal and ex-vivo porcine ureteral models.

METHOD(S): Calyceal model: The model was constructed by mounting a metal sieve with 0.92mm pores onto a 15mm diameter hollow tube. Nine groups of 3 human calcium oxalate monohydrate (COM) stones of matched size and weight were placed on the sieve and fragmented using three different laser settings (0.6J/5Hz, 0.2J/15Hz, and 0.2J/50Hz). A 200mm fiber was used. All stones were fragmented until they passed through the larger sieve and the residual stone fragments were collected on a sieve with finer pores (0.25mm) directly below. The time to completion, energy used, and the residual fragment weights were recorded. Ureteral model: Fresh porcine ureters were collected and submerged in saline. Paired trials using two different settings (0.6J/5Hz and 0.2J/15Hz) were conducted in each ureter using human COM stones of matched size and weight. Ten minutes of laser lithotripsy using a flexible ureteroscope and a 200mm Holmium laser fiber was performed. The trials were stopped if the stone retropulsed to the opposite end of the ureter. The rate of retropulsion, time to completion, energy used and residual stone fragment weights were recorded. The Kruskal-Wallis and Mann-Whitney U tests were used as appropriate for statistical analysis with $p < 0.05$ deemed significant.

RESULT(S): In the renal pelvic model, the 0.2J/15Hz dusting setting resulted in longer lithotripsy time (615.7s) compared to the 0.6J/ 5Hz (389.0s) or 0.2J/50Hz setting (395.3s; $p = 0.006$). Total energy required for complete stone fragmentation increased with increasing frequency settings (261 vs. 454 vs. 910 J for 0.6J/5Hz, 0.2J/15Hz and 0.2J/50Hz, respectively; $p < 0.001$). Residual fragment weights and the stone vaporization weights were comparable ($p = 0.444$, 0.697 ; respectively). In the ureteral model, retropulsion rate was much higher for the 0.6J/ 5Hz setting than the 0.2J/15Hz (43.7 vs 12.9 mm/min; $p < 0.001$).

CONCLUSION(S): Stone dusting settings were inferior in the renal pelvis as they required longer fragmentation time compared to conventional settings. In the ureter dusting settings were found to result in significantly less stone retropulsion.

Status

CONFERENCE ABSTRACT

Institution

(Li, Maldonado, Lightfoot, Alsyounf, Yeo, Vassantachart, Martin, Lee, Olgin, Baldwin) Loma

LindaCAUnited States

Publisher

Elsevier Inc.

Year of Publication

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676.

Validation of a novel inanimate ureteroscopy training model and a simulation-based flexible ureteroscopy training course.

Lantz A., Blankstein U., Honey R.J.D.A., Ordon M., Pace K.T., Lee J.Y.

Embase

Journal of Urology. Conference: 2014 Annual Meeting of the American Urological Association, AUA. Orlando, FL United States. Conference Publication: (var.pagings). 191(4 SUPPL. 1) (pp e132), 2014. Date of Publication: April 2014.

[Conference Abstract]

AN: 71400523

INTRODUCTION AND OBJECTIVES: By creating a low-stakes learning environment that permits deliberate practice and timely feedback, simulation-based training (SBT) modalities have grown in popularity over recent years. The educational value of surgical simulators, however, is only as good as the curriculum in which they are utilized. We designed a simulation-based flexible ureteroscopy (fURS) training course utilizing a novel inanimate training model (Cook URS model). We set out to evaluate the new curriculum and validate the Cook URS model.

METHOD(S): A SBT curriculum was designed for Jr level (PGY1-3) urology residents at the University of Toronto and included a didactic lecture, focusing on fundamental urolithiasis management principles and basic fURS techniques, a hands-on demonstration of the various instrumentation and skills required for fURS, and 3 independent practice sessions using the Cook URS model. Both baseline pre-test and post-course assessment of fURS skill was conducted for a standardized task; fURS with basket manipulation of lower pole stone into the upper pole. Performances were video recorded and later reviewed by 2 blinded experts using a validated assessment device.

RESULT(S): A total of 10 residents participated in the fURS course. There was a significant difference in mean pre- and post-course task completion times (15.8 vs 9.4 mins, $p < 0.01$) and performance scores (19.20 vs 25.25, $p < 0.01$). Eighty percent of participants rated the Cook URS model as realistic (4/5, mean=4.20) and 5 independent endourology experts rated the model as useful as a training device ($\leq 4/5$, mean=4.90), providing both face and content validity. There was also significant correlation ($p < 0.05$) between prior fURS experience and mean overall performance scores, task completion times, passing ratings, movement efficiency, instrument handling, and flow of procedure scores (Figure 1), demonstrating construct validity for the Cook URS model. The fURS global rating scale demonstrated good reliability, (Cronbach's alpha = 0.848).

CONCLUSION(S): Our study demonstrated that a SBT curriculum for fURS can lead to improved short-term technical skills amongst Jr level urology residents. The Cook URS model demonstrated face, content and construct validity. Further study is required.(Figure Presented).

Status

CONFERENCE ABSTRACT

Institution

(Lantz, Blankstein, Honey, Ordon, Pace, Lee) TorontoCanada

Publisher

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2014

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677.

Extracorporeal lithotripsy endoscopically controlled by ureterorenoscopy (LECURS): a new concept for the treatment of kidney stones-first clinical experience using digital ureterorenoscopes.

Traxer O., Letendre J.

Embase

World journal of urology. 32(3) (pp 715-721), 2014. Date of Publication: 01 Jun 2014.

[Article]

AN: 602086193

PURPOSE: To evaluate the feasibility and usefulness of extracorporeal lithotripsy endoscopically controlled by simultaneous flexible ureterorenoscopy (LECURS) and combined with Holmium laser lithotripsy for kidney stones surgery. **METHODS:** Retrograde flexible ureteroscopy allowed stone visualization and intrarenal relocation when possible. Extracorporeal shock wave lithotripsy (ESWL) was performed under direct vision allowing constant focal zone adjustment for optimal stone fragmentation. Holmium laser lithotripsy was used simultaneously when necessary. Post-operative assessment included ultrasound at day one and abdominal CT scan 3 weeks later to evaluate for residual fragments.

RESULTS: Six patients with kidney stones were recruited including 3 with relative contraindication to ESWL. One patient had a stone beyond an infundibular stenosis and 2 had multiple stones in a horseshoe kidney with an uretero-pelvic junction (UPJ) stricture. A 100 % stone fragmentation rate was obtained. Post-operative ultrasound was normal in 5 patients and showed slight peri-renal infiltration in the other. One patient developed an obstructive pyelonephritis requiring antibiotics and changing a double J to a ureteral catheter. No other complications were noted. Three patients (50 %) were stone free after LECURS. Three patients underwent a second-look procedure for small (<3 mm) retained residual fragments. No damage was seen with the digital ureteroscopes, laser fibers or stone baskets.

CONCLUSIONS: This initial experience with LECURS has shown to be feasible and safe. This opens the opportunity for further evaluation of this approach in order to improve outcomes of both approaches.

PMC Identifier

23913096 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=23913096>]

Institution

(Traxer, Letendre) Urology Department, Tenon Hospital, Pierre and Marie Curie University, 4 rue de la Chine, Paris Cedex 20, 75970, France,

Year of Publication

2014

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678.

Holmium laser intrarenal lithotripsy in pyelocaliceal lithiasis treatment: To dust or to extractable fragments.

Multescu R., Geavlete B., Georgescu D., Geavlete P., Chiutlu L.

Embase

Chirurgia (Romania). 109(1) (pp 95-98), 2014. Date of Publication: January-February 2014.

[Article]

AN: 1372433880

Background: Pyelocaliceal calculi flexible ureteroscopic approach raises problems related to operative time, associated morbidity and costs, especially by potential endoscope damage.

Method(s): 5 series, each of 20 patients with single pyelocaliceal lithiasis, were analyzed: Group I with calculi > 1 cm fragmented to dust, Group II with calculi > 1 cm with lithotripsy in fragments, Group III with calculi of 1-2 cm fragmented to dust, Group IV with calculi of 1-2 cm with lithotripsy in fragments, Group V with calculi of 1-2 cm fragmented to dust until they reached 1 cm, and lithotripsy in fragments afterwards. In all cases Ho:YAG lithotripsy was used.

Result(s): Ureteral access sheath was used in 70% of the cases. Mean operating time was 39 min in group I, 21 min in Group II, 112 min in group III, 72 min in group IV and 51 min in group V. Minor complications occurred in 7 cases, while a single major complication occurred in group IV.

Conclusion(s): The optimal lithotripsy method for calculi >1 cm seems to be in extractable fragments. Larger calculi should be fragmented to dust until they reach 1 cm and then the

lithotripsy should be continued into extractable fragments. Abbreviations: Ho: YAG - Holmium: Yttrium Aluminium Garnet, Hz - Hertz, mJ - milli joule. © Celsius.

PMC Identifier

24524477 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=24524477>]

Institution

(Multescu, Geavlete, Georgescu, Geavlete) Department of Urology, Saint John Emergency Clinical Hospital, Vitan Barzesti 13, Bucharest, Romania (Chiutlu) Department of Anesthesiology and Intensive Care, Craiova No.1 Emergency Clinical Hospital, Craiova, Romania

Year of Publication

2014

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679.

A multicenter comparison of the safety and effectiveness of ureteroscopic laser lithotripsy in obese and normal weight patients.

Chew B.H., Zavaglia B., Paterson R.F., Teichman J.M.H., Lange D., Zappavigna C., Matlaga B.R., Nunez-Nateras R., Bruhn A., Altamar H.O., Humphreys M.R., Shah O., Miller N.L.

Embase

Journal of Endourology. 27(6) (pp 710-714), 2013. Date of Publication: 01 Jun 2013.

[Article]

AN: 369050307

Objective: Surgical treatment of kidney stones in an obese patient (body mass index [BMI] >30 kg/m²) remains challenging as shockwave lithotripsy may not be an option due to weight limitations. We sought to determine the effectiveness of ureteroscopic laser lithotripsy in obese patients compared to nonobese controls.

Material(s) and Method(s): Patients from 2004 to 2007 were retrospectively analyzed providing a group of 292 patients (163 obese, 76 overweight, 53 normal) who underwent ureteroscopic procedures for urolithiasis at four centers in the United States and Canada.

Result(s): The percentage of obese patients requiring flexible ureteroscopy (URS) (79%) was higher than in the other groups ($P < 0.0001$). Flexible URS was associated with a lower stone-free rate (SFR) on multivariate analysis ($P = 0.034$). There was no difference in SFRs of patients who required a ureteral access sheath, basket extraction, or received a postoperative stent.

Complication rates did not differ between groups.

Conclusion(s): SFRs using ureteroscopic lithotripsy in obese and overweight populations are the same as in the normal weight patients. A flexible ureteroscope was associated with a decreased SFR, but this likely due to a more proximal stone location in these patients. Ureteroscopic laser lithotripsy is an effective and safe technique to treat urolithiasis in the overweight/obese patient. ©

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PMC Identifier

23521213 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=23521213>]

Status

Embase

Institution

(Chew, Zavaglia, Paterson, Teichman, Lange, Zappavigna) Department of Urologic Sciences, University of British Columbia, Vancouver, Canada (Matlaga) Department of Urology, Johns Hopkins University, Baltimore, MD, United States

(Nunez-Nateras, Humphreys) Department of Urology, Mayo Clinic, Phoenix, AZ, United States

(Bruhn, Shah) Department of Urology, New York University, NY, United States

(Altamar, Miller) Department of Urologic Surgery, Vanderbilt University, Nashville, TN, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2013

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680.

Incidental renal stones in potential live kidney donors: Prevalence, assessment and donation, including role of ex vivo ureteroscopy.

Olsburgh J., Thomas K., Wong K., Bultitude M., Glass J., Rottenberg G., Silas L., Hilton R., Koffman G.

Embase

BJU International. 111(5) (pp 784-792), 2013. Date of Publication: May 2013.

[Article]

AN: 52282957

Objectives To evaluate the prevalence of asymptomatic renal stones in our potential donor population. To assess the safety and success of ex vivo ureteroscopy (ExURS) to remove stones from explanted donor kidneys before transplantation. **Patients and Methods** We conducted a retrospective analysis of 377 computed tomography (CT) angiograms of potential kidney donors between October 2004 and May 2007 to assess the prevalence of asymptomatic renal stones in our donor population. Between October 2005 and October 2011, kidneys from suitable donors underwent ExURS. Stones were removed using basket extraction or were fragmented with holmium laser on bench before transplantation. Immediate and long-term complications of the transplanted recipients were recorded. Donors were followed with yearly ultrasonography of the remaining kidney in addition to standard follow-up protocol. **Results** Review of 377 CT angiograms between October 2004 to May 2007 showed a 5% prevalence of asymptomatic renal stones. Out of 55 potential donors (19 identified between October 2004 to May 2007 and a further 36 identified since May 2007), 20 donors with stones proceeded to donation, with stone size ranging from 2 to 12 mm. Of the patients, 17 proceeded to ExURS. Stones were removed in 10 patients; five with basket retrieval, four with laser fragmentation and one with both laser fragmentation and basket retrieval. There were no early or late allograft stone-related complications and no evidence of stones on follow-up imaging at a mean (range) of 10 (1-24) months. There has been no reported stone recurrence in any of the donors to date and no stone on ultrasonography of eight donors with >1-year follow-up (mean 26 months, range 12-49 months). **Conclusions** Asymptomatic renal stones are present in 5% of our donors. ExURS can be safely used to remove stones in these kidneys before transplantation, without the risk of subjecting the donor to an additional stone-removing procedure. Continued long-term follow-up of donors and recipients is still required to ensure the safety of this approach. © 2012 The Authors. BJU International © 2012 BJU International.

PMC Identifier

23110544 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=23110544>]

Status

Embase

Institution

(Olsburgh, Thomas, Wong, Bultitude, Glass, Silas, Hilton, Koffman) Department of Renal Medicine, Urology and Transplant Surgery, Guy's and St. Thomas' NHS Foundation Trust, London SE1 9RT, United Kingdom (Rottenberg) Department of Radiology, Guy's and St. Thomas' NHS Foundation Trust, London, United Kingdom

Publisher

Blackwell Publishing Ltd (9600 Garsington Road, Oxford OX4 2XG, United Kingdom)

Year of Publication

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681.

Routine flexible nephroscopy for percutaneous nephrolithotomy for renal stones with low density:

A prospective, randomized study.

Gucuk A., Kemahli E., Uyeturk U., Tuygun C., Yildiz M., Metin A.

Embase

Journal of Urology. 190(1) (pp 144-148), 2013. Date of Publication: July 2013.

[Article]

AN: 52584482

Purpose: We evaluated the usefulness of routine flexible nephroscopy during percutaneous nephrolithotomy.

Material(s) and Method(s): Patients diagnosed with kidney stones who were scheduled to undergo percutaneous nephrolithotomy between March 2011 and July 2012 were randomized

into 2 groups. Group 1 underwent standard percutaneous nephrolithotomy using rigid nephroscopy. Group 2 underwent flexible nephroscopy, in addition to standard percutaneous nephrolithotomy and laser lithotripsy or basket catheter stone extraction, as needed. Surgery was performed subcostally and with minimal percutaneous access in group 2 to use the advantages of flexible nephroscopy. We compared the 2 groups in terms of preoperative stone characteristics and postoperative success criteria, including the stone-free rate, bleeding, number of access sites, etc.

Result(s): The study included 61 males (76.3%) and 19 females (23.8%) with a mean +/- SD age of 43.75 +/- 12.4 years (range 19 to 74). There was no significant difference in stone size, HU density or stone location between the 2 groups. Comparison of perioperative and postoperative parameters revealed a higher stone-free rate (92.5% vs 70%), fewer access sites and a lower hematocrit decrease in group 2. The stone-free rate was higher in patients with stones with a density of less than 677.5 HU (100% in group 2 vs 64.7% in group 1).

Conclusion(s): Routine flexible nephroscopy during percutaneous nephrolithotomy was associated with a higher stone-free rate, fewer interventions and less bleeding, especially in patients with low HU density stones. © 2013 American Urological Association Education and Research, Inc.

PMC Identifier

23313202 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=23313202>]

Status

Embase

Institution

(Gucuk) Department of Urology, Abant Izzet Baysal University, Faculty of Medicine, Bolu, Turkey
(Kemahli, Uyeturk, Tuygun, Yildiz, Metin) Ministry of Health, Ankara Diskapi Yildirim Beyazit
Education and Research Hospital (CT), Ankara, Turkey

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

2013

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682.

Advances in Ureteroscopy.

Borofsky M.S., Shah O.

Embase

Urologic Clinics of North America. 40(1) (pp 67-78), 2013. Date of Publication: February 2013.

[Review]

AN: 366149563

Recent innovations in imaging equipment and novel instrumentation have helped ureteroscopy evolve from a diagnostic to a therapeutic tool. In this review, the authors highlight several of the most recent advances in ureteroscopy that have helped allow unprecedented access, visualization, and treatment of upper urinary tract pathologic conditions. © 2013 Elsevier Inc.

PMC Identifier

23177636 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=23177636>]

Status

Embase

Institution

(Borofsky) Department of Urology, NYU Langone Medical Center, New York University School of Medicine, 150 East 32nd Street, 2nd Floor, New York, NY 10016, United States (Shah) Division of Endourology and Stone Disease, Department of Urology, NYU Langone Medical Center, New York University School of Medicine, 150 East 32nd Street, 2nd Floor, New York, NY 10016, United States

Publisher

W.B. Saunders (Independence Square West, Philadelphia PA 19106-3399, United States)

Year of Publication

2013

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683.

Mini-percutaneous nephrolithotomy with ureteral access sheath in a transplanted kidney: Case report and literature review.

Kadlec A.O., Ross M.J., Milner J.E.

Embase

Urologia Internationalis. 91(2) (pp 236-238), 2013. Date of Publication: August 2013.

[Review]

AN: 52341192

This is the case of a 69-year-old woman with a history of right iliac fossa living-related kidney transplant that developed acute renal failure due to an obstructing stone in the proximal transplant ureter. She was successfully treated with mini-percutaneous nephrolithotomy wherein a 14-Fr tract was created with serial dilation and a 14-Fr ureteral access sheath was used for access. A flexible ureteroscope with holmium laser and a helical wire basket were used to fragment and extract the stone, respectively. A 10-Fr nephrostomy tube was left for postoperative drainage. There are only a few published reports of mini-percutaneous nephrolithotomy in transplant kidneys, but those reports suggest that the procedure is safe and effective. © 2012 S. Karger AG, Basel.

PMC Identifier

23221366 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=23221366>]

Status

Embase

Institution

(Kadlec, Ross, Milner) Department of Urology, Loyola University Medical Center, 2160 S First Ave, Maywood, IL 60153, United States

Publisher

S. Karger AG (Allschwilerstrasse 10, P.O. Box, Basel CH-4009, Switzerland)

Year of Publication

2013

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684.

1.2 French stone retrieval baskets further enhance irrigation flow in flexible ureterorenoscopy.

Bedke J., Leichtle U., Lorenz A., Nagele U., Stenzl A., Kruck S.

Embase

Urolithiasis. 41(2) (pp 153-157), 2013. Date of Publication: April 2013.

[Article]

AN: 373341733

Ureterorenoscopy (URS) has revolutionized upper urinary tract stone therapy. However, the size of the working channel and the stone baskets limit irrigation flow as well as vision. This study determined further improvements of irrigation flow, deflection capacities and impairments of breaking resistance in a new 1.2 French (F) ultra-miniaturized basket. Irrigation measurements were performed in semirigid URS (semiURS, working channel 5F) and in flexible URS (flexURS, 3.6F) in 0degree, 90degree and 270degree deflection with 1.2F, 1.8F, 1.9F and 2.2F baskets and compared with empty channel. Breaking strength of 1.2F, 1.8F and 1.9F baskets were evaluated using a material testing machine. Tested baskets affected irrigation in semiURS and flexURS ($p < 0.05$). Mean $\pm$ SEM (standard error of the mean) for semiURS flow rates counted 197.1 $\pm$ 2.0, 140.9 $\pm$ 1.6, 111.1 $\pm$ 1.5, 98.0 $\pm$ 1.3 and 77.1 $\pm$ 0.9 ml/min for empty channel, 1.2F, 1.8F, 1.9F and 2.2F baskets ($p < 0.05$). Using unbent flexURS flow rates of 44.2 $\pm$ 0.4, 20.4 $\pm$ 0.2, 5.9 $\pm$ 0.1, 5.4 $\pm$ 0.1 and 1.5 $\pm$ 0.1 ml/min for empty channel, 1.2F, 1.8F, 1.9F and 2.2F baskets, were observed ($p < 0.05$). The 1.2F versus 2.2F basket showed a 13.6-fold increase in flexURS irrigation ($p < 0.05$), while only the 2.2F basket reduced deflection by 20.3 %. The breaking strength decreased with a reduced basket size (1.2F: 6.4 $\pm$ 0.46 vs. 1.8F: 16.8 $\pm$ 2.79 vs. 1.9F: 32.2 $\pm$ 2.74 N, $p < 0.05$). Ultra-miniaturized baskets of 1.2F ensured a sufficient irrigation flow as needed for high quality vision in URS stone management. However, miniaturization of the 1.2F basket resulted in a reduced breaking strength compared with larger sized devices which in turn may hamper stone removal by an increased vulnerability. © Springer-Verlag 2013.

Status

Embase

Institution

(Bedke, Stenzl, Kruck) Department of Urology, University of Tuebingen, Tuebingen, Germany

(Bedke, Kruck) Department of Urology, Eberhard Karls University Tuebingen, Hoppe-Seyler
Strasse 3, 72076 Tuebingen, Germany

(Leichtle, Lorenz) Department of Orthopaedic Surgery, University of Tuebingen, Tuebingen,
Germany

(Nagele) Department of Urology, General Hospital Hall I.T, Hall in Tirol, Austria

Publisher

Springer Verlag (E-mail: service@springer.de)

Year of Publication

2013

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685.

The best calyceal tract approach for treating renal stones with percutaneous nephrolithotomy.

Chanprasopon P., Kongchareonsombat W., Leenanupunth C., Kijvikai K., Viseshsindh W.

Embase

Journal of the Medical Association of Thailand. 96(5) (pp 575-579), 2013. Date of Publication:

2013.

[Article]

AN: 368958993

Objective: To compare the perioperative outcomes of percutaneous nephrolithotomy (PCNL)
performed via the upper, middle, and lower calyces.

Material(s) and Method(s): The authors retrospectively reviewed 92 renal units in 92 patients who
required PCNL at our institution between 2006 and 2010. Patients with partial and full staghorn
stones with total stone size ≥ 2 cm were included in the present study. Patients were excluded if
they had multiple small stones or a single stone < 2 cm. The present study analyzed 92 renal units
in 92 patients. The authors divided the patients into three groups (groups 1, 2, and 3) based on

the surgical approach, which was the upper, middle, and lower calyceal approaches. PCNL was performed using a standard ultrasonic lithotripter with a rigid nephroscope, and holmium: YAG laser lithotripsy was carried out with a flexible nephroscope, with simultaneous nitinol tipless basket extraction of fragments. Procedures were repeated until the patients were rendered stone-free (confirmed visually or by nephrostogram). Estimated blood loss, length of hospital stay, operative time, and the number of procedures (to achieve stone-free status) were analyzed and compared among the groups, and complications were reported.

Result(s): The present study showed that the length of hospital stay, estimated blood loss, number of procedures, and operative time were not significantly different between the three groups. In Group 1, four patients had complications and included two patients with mid-ureteral stone, and one patient each with renal pelvic perforation and urinary tract infection with sepsis. One patient from Group 2 contracted a urinary tract infection. In Group 3, five patients exhibited complications and included one with mid-ureteral stone, two with renal hemorrhage, and two with urinary tract infection.

Conclusion(s): The estimated blood loss, duration of hospital stay, operative time, number of procedures (to achieve stone-free status), and complications did not statistically differ between the three groups. Moreover, very few complications occurred in the different surgical approaches. Therefore, PCNL via all the three approaches were deemed safe and effective.

PMC Identifier

23745313 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=23745313>]

Status

Embase

Institution

(Chanprasopon, Kongchareonsombat, Leenanupunth, Kijvikai, Viseshsindh) Division of Urology, Department of Surgery, Ramathibodi Hospital, Bangkok, Thailand

Publisher

Medical Association of Thailand (4th Royal Golden Jubilee Building, 2 Soi Soonvijai, New Petch Huayakwang Bangkok 10310, Thailand)

Year of Publication

2013

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686.

Management of stones associated with intrarenal stenosis: Infundibular stenosis and caliceal diverticulum.

Koopman S.G., Fuchs G.

Embase

Journal of Endourology. 27(12) (pp 1546-1550), 2013. Date of Publication: 01 Dec 2013.

[Article]

AN: 370507322

Purpose: To review our experience with retrograde intrarenal surgery (RIRS) for management of conditions associated with intrarenal stricture and present a treatment algorithm based on the series.

Patients and Methods: RIRS was offered to all patients with symptomatic intrarenal stenosis regardless of location if stone burden was 2 cm or less. With a combined endourology and lithotripsy table, patients with stones between 2 and 3 cm were also offered RIRS using a combined approach of RIRS and shockwave lithotripsy (SWL). A total of 108 patients with symptomatic stones and caliceal diverticulum or infundibular stenosis were included in the data analysis. A standard technique was used in all cases. Failures or patients not suitable for RIRS were treated with either percutaneous nephrolithotomy (PCNL) or laparoscopic surgery.

Result(s): Successful identification and dilation/incision of the stenotic opening was accomplished in 94% of cases. Seventy-five percent of stones were managed with basketing and/or holmium laser ablation. In these patients, 90% were stone free (<2 mm stone fragments). For stones between 2 and 3 cm, the use of holmium laser in combination with SWL provided stone-free rates of 75%. Five percent of patients needed PCNL because of larger stone burden and posterior location.

Conclusion(s): With the appropriate equipment, RIRS provides a valid treatment option for patients with intrarenal strictures. While upper pole and midrenal lesions are ideal, lower pole segments may be approached as well. A treatment algorithm based on the results provides a simplified approach for the minimally invasive management of intrarenal stenosis. © Copyright 2013, Mary Ann Liebert, Inc.

PMC Identifier

24251427 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=24251427>]

Status

Embase

Institution

(Koopman, Fuchs) Department of Urology, Cedars-Sinai, 8635 West Third St., #1070, Los Angeles, CA 90048, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2013

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687.

Prospective randomized controlled trial comparing laser lithotripsy with pneumatic lithotripsy in miniperc for renal calculi.

Ganesamoni R., Sabnis R.B., Mishra S., Parekh N., Ganpule A., Vyas J.B., Jagtap J., Desai M.

Embase

Journal of Endourology. 27(12) (pp 1444-1449), 2013. Date of Publication: 01 Dec 2013.

[Article]

AN: 370507317

Background and Purpose: The energy source used for stone fragmentation is important in miniperc. In this study, we compared the stone fragmentation characteristics and outcomes of laser lithotripsy and pneumatic lithotripsy in miniperc for renal calculi.

Patients and Methods: After Institutional Review Board approval, 60 patients undergoing miniperc for renal calculi of 15 to 30 mm were equally randomized to laser and pneumatic lithotripsy groups. Miniperc was performed using 16.5F Karl Storz miniperc sheath and a 12F nephroscope. Laser lithotripsy was performed using a 550-mum laser fiber and 30 W laser with variable settings according to the need. Pneumatic lithotripsy was performed using the EMS Swiss lithoclast.

Patient demographics, stone characteristics, intraoperative parameters, and postoperative outcomes were analyzed.

Result(s): The baseline patient demographics and stone characteristics were similar in both groups. The total operative time ($P=0.433$) and fragmentation time ($P=0.101$) were similar between the groups. The surgeon assessed that the Likert score (1 to 5) for fragmentation was similar in both groups (2.1 ± 0.8 vs 1.9 ± 0.9 , $P=0.313$). Stone migration was lower with the laser (1.3 ± 0.5 vs 1.7 ± 0.8 , $P=0.043$), and fragment removal was easier with the laser (1.1 ± 0.3 vs 1.7 ± 1.1 , $P=0.011$). The need for fragment retrieval using a basket was significantly more in the pneumatic lithotripsy group (10% vs 37%, $P=0.002$). The hemoglobin drop, complication rates, auxiliary procedures, postoperative pain, and stone clearance rates were similar between the groups ($P>0.2$).

Conclusion(s): Both laser lithotripsy and pneumatic lithotripsy are equally safe and efficient stone fragmentation modalities in miniperc. Laser lithotripsy is associated with lower stone migration and easier retrieval of the smaller fragments it produces. © Copyright 2013, Mary Ann Liebert, Inc.

PMC Identifier

24251428 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=24251428>]

Status

Embase

Institution

(Ganesamoni, Sabnis, Mishra, Parekh, Ganpule, Vyas, Jagtap, Desai) Department of Urology, Muljibhai Patel Urological Hospital, Dr. Virendra Desai Road, Nadiad, Gujarat 387001, India

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

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688.

Management of urolithiasis in live-related kidney donors.

Ganpule A., Vyas J.B., Sheladia C., Mishra S., Ganpule S.A., Sabnis R.B., Desai M.

Embase

Journal of Endourology. 27(2) (pp 245-250), 2013. Date of Publication: 01 Feb 2013.

[Article]

AN: 368338246

Objective: To analyze our experience in management of urolithiasis in renal donors.

Material(s) and Method(s): The stones were treated either pretransplant or posttransplant. The Amsterdam forum criteria for acceptance of living donors were used for donor selection. The donors underwent the following procedures: pretransplant extracorporeal shock wave lithotripsy (ESWL) (n=5), pretransplant retrograde intrarenal surgery (RIRS) (n=1), ex-vivo ureteroscopy (ex-vivo URS) (n=1), and ex-vivo pyelolithotomy (ex-vivo Pyl) (n=2); intraoperative Double-J stent; and observation (n=3). Data were analyzed for technical feasibility, intraoperative and postoperative complications, and stone clearance.

Result(s): The male and female ratio was 4:8 and average age was 52.3 years (38-71). In the pretransplant ESWL group, average of 740 shocks (600-1500) was given; the power was not ramped up beyond 12 kV. Ex-vivo URS was performed on bench with 6F pediatric cystoscope, while in the ex-vivo Pyl, a 12F nephroscope was introduced via a pyelotomy and stones were retrieved intact with a dormia basket. A postoperative ultrasound at one month revealed complete clearance of stones in all except one donor. At a mean follow-up of 36 months (10-58), there was no stone recurrence in donor or recipient.

Conclusion(s): This report shows the feasibility and safety of ex-vivo URS and ex-vivo Pyl in living donors, in select cases with subcentimeter calculi, an option of conservative management with Double-J stent is safe. ESWL/RIRS can be performed safely in the pretransplant setting. Proper donor selection and follow-up are crucial to success. We propose a treatment selection algorithm for management of these donors. © 2013 Mary Ann Liebert, Inc.

PMC Identifier

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Institution

(Ganpule, Vyas, Sheladia, Mishra, Ganpule, Sabnis, Desai) Department of Urology, Muljibhai Patel Urological Hospital, Dr. Virendra Desai Road, Nadiad-387001, Gujarat, India

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

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689.

Improvised method to retrieve a proximally displaced ureteral stent in a remote surgical setting.

Fisher J.D., Monahan M., Johnston III W.K.

Embase

Journal of Endourology. 27(7) (pp 922-924), 2013. Date of Publication: 01 Jul 2013.

[Article]

AN: 369278096

Purpose: To present an improvised method for repositioning a proximally displaced stent using only a cystoscope and a guidewire.

Method(s): A Glidewire guidewire (Boston Scientific) was passed through a cystoscope and into the distal ureter, and manipulated up the ureteral stent into the renal pelvis, reflected, and passed antegrade down the ureter and into the bladder. The guidewire was then grasped in the bladder, clamped at the penis, and retracted, pulling the stent back into the bladder.

Result(s): The patient proceeded with lithotripsy, and the stent was removed in 2 weeks without complication.

Conclusion(s): Methods at retrieving proximally displaced ureteral stents after deployment have been previously reported; however, these methods necessitated access to a ureteroscope and special graspers/baskets that may not be available in an outpatient surgical center setting. Here, an improvised method for stent repositioning using only a cystoscope and a guidewire allowed successful retrieval of a proximally migrated stent. © 2013 Mary Ann Liebert, Inc.

Status

Embase

Institution

(Fisher, Monahan) Michigan State University College of Osteopathic Medicine, Farmington Hills, MI, United States (Johnston III) Michigan Institute of Urology, 25500 Meadowbrook Road, Novi, MI 48375, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

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690.

Dislodged dormia basket.

Dilip Javali T., Shetty P., Nagaraj H.K.

Embase

Urology. 81(1) (pp e1-e2), 2013. Date of Publication: January 2013.

[Article]

AN: 368052757

This is the first reported case of a Dormia basket being dislodged outside the ureter into the retroperitoneum during intracorporeal lithotripsy. © 2013 Elsevier Inc. All Rights Reserved.

PMC Identifier

23273096 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=23273096>]

Status

Embase

Institution

(Dilip Javali, Shetty, Nagaraj) Department of Urology, M.S. Ramaiah Hospital, MS Ramaiah Nagar, MSRIT Post, Bangalore, Karnataka 560054, India

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication
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691.

Migration of a hem-o-lok clip to the ureter following laparoscopic partial nephrectomy presenting with lower urinary tract symptoms.

Park K.S., Sim Y.J., Jung H.

Embase

International Neurourology Journal. 17(2) (pp 90-92), 2013. Date of Publication: 2013.

[Article]

AN: 369443670

We report a case of ureteral migration of a surgical clip after partial nephrectomy in which the clip was misdiagnosed as a ureteral stone. A 37-year-old woman had undergone laparoscopic partial nephrectomy of right renal cell carcinoma at another hospital 2 years previously. Postoperatively, she had gradually acquired lower urinary tract symptoms. Then, she complained of sudden right flank pain for a week. A plain X-ray and enhanced abdominopelvic computed tomography scan were performed. A 0.5 cm x 1.0 cm right upper ureteral opacity with borderline hydronephrosis was seen but could not be found on the X-ray. Ureteroscopy revealed a medium-sized Hem-o-Lok clip on the right upper ureter that was removed with a stone basket. We concluded that a Hem-o-Lok clip used for collecting system sealing had migrated to the ureter and had been misdiagnosed as a ureteral stone on a computed tomography scan. © 2013 Korean Continence Society.

Status

Embase

Institution

(Park) Department of Urology, Hyun-Dai UVIS Hospital, Incheon, South Korea (Sim, Jung)
Department of Urology, Gachon University Gil Medical Center, Gachon University of Medicine
and Science, Incheon, South Korea

Publisher

Korean Continence Society (5th Floor, C-Dong, Jung-Suk Building, 7-241, 3-Ga, Shinheung-
dong, Jung-gu, Incheon 400-711, South Korea)

Year of Publication

2013

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692.

Simultaneous bilateral flexible ureteroscopy with holmium laser lithotripsy: Analysis of safety and efficacy.

Gao X.-F., Zhang W., Peng Y.-H., Li L., Zhou T., Shi X.-L., Wang L.-H., Sun Y.-H.

Embase

Academic Journal of Second Military Medical University. 34(12) (pp 1380-1383), 2013. Date of Publication: 2013.

[Article]

AN: 373856267

Objective To discuss the safety and efficacy of simultaneous bilateral flexible ureteroscopy (SBFU) with holmium laser lithotripsy for bilateral renal or ureteral calculi. Methods The clinical data of 78 patients (51 males, 27 females; average age [43 +/- 12] years, range 22 to 74 years) who underwent SBFU with holmium laser lithotripsy for bilateral renal or ureteral calculi in our hospital between January 2004 and February 2013 were retrospectively reviewed. The mean number of stones per case was 3.0 +/- 0.5 (range 2 to 5), and the mean diameter of the largest stone was (2.5 +/- 1.2) cm (range 1.0 to 5.0 cm). The operation was conducted under intravenous anesthesia. The upper ureteral calculi was removed firstly by ureteroscopy with

holmium laser when it existed. After the ureteral access sheath was placed, flexible ureteroscopy was inserted into the renal pelvis, and then a 200 μ m holmium laser fiber was used for fragmentizing stones and the large pieces were removed by stone basket. The operation was considered successful if no residual stone existed or residual stones were less than 4 mm in diameter during postoperative examination. Clinical data including operation time, stone-free rate and complications were analyzed. Results The flexible ureteroscopy was successfully placed in all the 78 cases, and the average operation time per case was (74.0 $\pm$ 40.4) min (range 40 to 312 min), with no bleeding, ureteral perforation, avulsion or rupture during operation. The success rate of stone fragmentation was 93.6% (146/156) and the stone-free rate was 86.0% (134/156). Seven cases (9.0%, 7/78) required a second stage flexible ureteroscopy with holmium laser lithotripsy. The postoperative fever ($>38^{\circ}\text{C}$) was found in 2 cases (2.6%, 2/78). Conclusion SBFU with holmium laser lithotripsy is a safe and effective treatment for bilateral renal or ureteral calculi. This procedure is a reliable treatment option for bilateral renal or ureteral calculi.

Status

Embase

Institution

(Gao, Zhang, Peng, Li, Zhou, Shi, Wang, Sun) Department of Urology, Changhai Hospital, Second Military Medical University, Shanghai 200433, China

Year of Publication

2013

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[SFX](#)

693.

Ureteroscopic treatment of patients with small, painful, non-obstructing renal stones: The small stone syndrome.

Jura Y.H., Lahey S., Eisner B.H., Dretler S.P.

Embase

Clinical Nephrology. 79(1) (pp 45-49), 2013. Date of Publication: 2013.

[Article]

AN: 368332437

Aims: Although it is thought that renal colic results from urinary tract obstruction, some patients evaluated for renal colic are found to have no source for their pain other than small, non-obstructing renal calyceal stones. We refer to this as "the small stone syndrome". We aim to determine if small non-obstructing calyceal stones may also cause pain and that treatment may relieve this pain.

Method(s): A retrospective chart review was performed to identify patients with non-obstructing calyceal stones (≤ 4 mm in diameter) evaluated for flank pain and treated by ureteroscopy. Patients completed a follow-up questionnaire regarding pre- and postoperative pain and quality of life (QOL).

Result(s): 13 patients were included in the analysis. Mean stone diameter was 3 mm (range 1.5-4.0 mm). Following ureteroscopy, 11 (85%) patients reported complete resolution of pain and 2 (15%) reported partial resolution. 12 patients were able to describe preoperative and postoperative QOL and of these, 8 (67%) had improved QOL, 4 (33%) had no change, and none reported worsening. Follow-up imaging was available in 10 patients: stone free in 6 (60%), reduction in stone size in 3 (30%), and stone unchanged in 1 (10%).

Conclusion(s): Ureteroscopic treatment of painful small, non-obstructing renal calyceal stones achieved complete or partial resolution of pain in all patients and improvement in QOL in a majority of patients © 2013 Dustri-Verlag Dr. K. Feistle ISSN 0301-0430.

PMC Identifier

23006342 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=23006342>]

Status

Embase

Institution

(Jura, Lahey, Eisner, Dretler) Department of Urology, Massachusetts General Hospital, Boston, MA, United States (Jura, Lahey, Eisner, Dretler) Harvard Medical School, Boston, MA, United States

Publisher

Dustri-Verlag Dr. Karl Feistle (Bajuwarenring 4, Oberhaching 82041, Germany)

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694.

Implementation of a focused curriculum on flexible ureteroscopic surgery: A multi-institutional collaborative effort.

Ruiz L., Hyams E., Donderis R., Alvarado A., Persky I., Ruiz S., Matlaga B.R.

Embase

Clinical Nephrology. 79(2) (pp 132-135), 2013. Date of Publication: 2013.

[Article]

AN: 368332423

Introduction: Flexible ureteroscopy with Holmium:YAG laser lithotripsy (Flex URS/Laser) has a known learning curve; although this laser is the safest flexible intracorporeal lithotrite, complications have been reported to occur with greater frequency early in its adoption. Herein, we review the implementation of a didactic and practical curriculum to introduce the Holmium:YAG laser for flexible URS. Following the initial tutorial period, we assessed procedure outcomes and complications.

Method(s): In September 2009 a 15 Watt Holmium:YAG laser was introduced to the operating suite at Hospital Punta Pacifica, a newly developed hospital affiliated with Johns Hopkins Medicine International. We developed a curriculum that included both classroom-based lectures and live surgical experience. The lectures were designed to review the laser's properties as well as its surgical applications; live surgeries were then performed, initially as demonstrations and then as mentored procedures. The medical records of all patients undergoing Flex URS/Laser in the 12 months following this program were reviewed, to assess for outcomes and complications. Result(s): A total of 32 Flex URS/Laser procedures were performed. Mean age was 44.1 years, and there were 19 males, 13 females. Five stones were located in the ureter, with the remainder in the kidney. All stones were accessed and fragmented with the laser, and no peri-operative or post-operative complications were encountered.

Conclusion(s): A focused didactic and practical curriculum can simplify the introduction of Flex URS/ Laser, and permit the rapid achievement of acceptable results. An emphasis on limiting active fragment extraction will reduce the likelihood of ureteral injuries, a potentially devastating

complication which may be more likely to occur early in the adoption of Flex URS/Laser. © 2013
Dustri-Verlag Dr. K. Feistle.

PMC Identifier

23195832 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=23195832>]

Status

Embase

Institution

(Hyams, Ruiz, Matlaga) James Buchanan Brady Urological Institute, Johns Hopkins School of
Medicine, Baltimore, MD, United States (Ruiz, Donderis, Alvarado, Persky) Department of
Urology, Hospital Punta Pacifica, Panama

Publisher

Dustri-Verlag Dr. Karl Feistle (Bajuwarenring 4, Oberhaching 82041, Germany)

Year of Publication

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695.

Ultrasound guided ureteroscopy in pregnancy.

Deters L.A., Belanger G., Shah O., Pais V.M.

Embase

Clinical Nephrology. 79(2) (pp 118-123), 2013. Date of Publication: 2013.

[Article]

AN: 368332421

Introduction: Management of renal colic and suspected urolithiasis in pregnancy remains a
controversial topic. Competing concerns of operative fluoroscopy and prolonged duration of
ureteral stent or nephrostomy tube fuel arguments for expectant management versus early
surgical intervention. To address these concerns, we have offered ultrasound guided

ureteroscopy for definitive management of suspected urolithiasis during pregnancy. We herein review our experience with this approach.

Method(s): We performed a multi-center retrospective review of all pregnant patients undergoing ureteroscopy for suspected urolithiasis between 2008 and 2010. All pregnant patients who had undergone ultrasound guided ureteroscopy were included in this study. We evaluated presence of stone, stone size, operative time, stent duration, and post-operative course.

Result(s): Seven pregnant patients underwent ultrasound guided ureteroscopy. The mean age was 28 years, mean gestation 24 weeks, with stone sizes ranging from 5 to 22 mm. All patients had undergone preoperative stenting. Ureteral stones were identified and removed in four patients. Post-operative imaging confirmed that there was no residual hydronephrosis or significant ipsilateral renal stone burden. Average stent duration was 7.3 days. Preterm labor occurred in one case.

Discussion(s): In our experience, ultrasound guided ureteroscopy is a viable option in pregnancy to manage patients with suspected urolithiasis after failed expectant therapy. This method avoids fetal exposure to ionizing radiation, yet allows intraoperative radiographic monitoring. With this approach it is possible to render the patient stone free, obviating the need for ureteral stents for the duration of the pregnancy. © 2013 Dustri-Verlag Dr. K. Feistle.

PMC Identifier

23073063 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=23073063>]

Status

Embase

Institution

(Deters, Pais) Dartmouth Hitchcock Medical Center, One Medical Center Drive, Lebanon, NH, United States (Belanger) Maine Medical Center, Portland, ME, United States (Shah) NYU Langone Medical Center, New York, NY, United States

Publisher

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696.

Analysis for predictive factors for the success of ureteroscopy as daycase surgical procedure for the treatment of ureteral calculi.

Molina R., Gonzalez N., Alvarez M., Crespo L., Alarcon R., Dorado M., Paez A.

Embase

European Urology, Supplements. Conference: 28th Annual Congress of the European Association of Urology, EAU. Milan Italy. Conference Publication: (var.pagings). 12(1) (pp e1068), 2013. Date of Publication: March 2013.

[Conference Abstract]

AN: 71393382

INTRODUCTION & OBJECTIVES: To disclose the predictive factors for success of day-case semi-rigid ureteroscopy (URS) for ureteral stones. To approach the predictive factors for stone-free one month later **MATERIAL & METHODS:** a retrospective analysis of 402 patients operated as day-cases during the period 2004-2012 was conducted. Patients harbouring ureteral diversions (double J) were excluded. Terminal ureteral hydraulic dilatation was used in 67.3% of the cases. Ancillary procedures were forceps stone extraction, Holmium-laser lithotripsy and mechanical disintegration. Stone fragments ≥ 2 -3 mm were extracted using nitinol baskets and/or forceps. At the end of the procedure a double J was routinely inserted. Cases were classified according to patients gender, and stone number (single or multiple), location (lumbar, iliac or pelvic), size (The operative course was considered as uncomplicated (no intraoperative adverse events) or complicated (stone migration or ureteral perforation). The procedure was considered successful when the patient could be discharged as foreseen. Reasons for overnight admission were pain, fever, haematuria and/or acute urinary retention. Plain abdominal film or echography were used for postsurgical control one month after URS. Patients were considered stone-free when no stone was evident or residual fragments Univariate (chi square) and multivariate analyses (logistic regresion) were conducted to disclose the predictive effect of gender and stone characteristics on the probability of completing the procedure as day-case. Also, univariate and multivariate analyses were used to approach the effect of gender and stone characteristics on the probability of stone-free at one-month.

RESULT(S): Two-hundred and sixty-nine patients (59% male) were eventually evaluable. Stones were mostly single (92%) and small (76.6% Discharge was possible in 89.6% of the cases. Eighty-two percent of the patients were stonefree at one month. Only stone side (left ureter, $p < 0.001$) and location (pelvic, $p < 0.001$), and forceps extraction ($p < 0.001$) proved to be

independent factors of stone-free after day-case URS. Similarly, an uncomplicated procedure was the only independent predictive factor of hospital discharge ($p=0.006$).

CONCLUSION(S): Pelvic, left sided, and forceps treated ureteral stones are the best cases for day-surgery URS. An uncomplicated surgical procedure is the only predictive factor of hospital discharge after day-case URS.

Status

CONFERENCE ABSTRACT

Institution

(Molina, Gonzalez, Alvarez, Crespo, Alarcon, Dorado, Paez) University Hospital of Fuenlabrada, Dept. of Urology, Madrid, Spain

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697.

Use of flexible ureteroscopy in the clinical practice for the treatment of renal stones: Results from a large European survey.

Sanguedolce F., Liatsikos E., Verze P., Hruby S., Breda A., Binbay M., Knoll T.

Embase

European Urology, Supplements. Conference: 28th Annual Congress of the European Association of Urology, EAU. Milan Italy. Conference Publication: (var.pagings). 12(1) (pp e660-e661), 2013. Date of Publication: March 2013.

[Conference Abstract]

AN: 71392982

INTRODUCTION & OBJECTIVES: From November 2011 to March 2012 a European survey has been conducted on the use of flexible ureteroscopy (fURS) for the treatment of renal calculi; the survey consisted of 23 questions and was sent by email to the young urologists (YU; <40 yrs) and then to the senior urologists (SU; >40 yrs). The aim of the survey was to get an overview of the current use of fURS among the European countries and to compare with the EAU guidelines.

MATERIAL & METHODS: Recipients were selected via the EAU membership database; only active members with email addresses and dates of birth available were included. The questionnaires were collected through the Survey Monkey System and data were transferred to the SPSS system-16 edition for statistical analysis. Indication of fURS for renal stones according to size and site, techniques and technologies were recorded and correlated to age of surgeons and volumes of cases treated annually.

RESULT(S): The questionnaire was sent to 3404 members; in 510 cases the email account was not active. The cohort used for the final evaluation consisted of 2894 recipients, 1156 YU and 1738 SU. Overall, the response rate was 40.4% (n=1168), being 49.7% (n=575) within the YU and 34.2% (n=594) within the SU. For 95% of the responders, fURS was considered a first line treatment, with a higher number of preferences for lower pole stone (45.9%) in terms of site, and for stone <1 (44.2%) and <2 cm (43.8%) with respect to size. The placement of a Ureteral Access Sheath was the preferred step performed at the beginning of the procedure (70.7% of the responders) and its use was considered advisable in 72.5% of the cases, without difference between the responder subgroups. Expert surgeons were more used to perform a semirigid URS prior to a fURS (p=0.035). In the case of a narrowing of the ureteric orifice a dilation of the ureter was the most common option chosen (27.4%); however, expert urologists were more likely to use a JJ stent to dilate the ureteric orifice, postponing the fURS (p<0.001). In the case of ureteral stricture, the placement of a JJ stent was the preferred option (29.8%); however, expert surgeons were more likely to perform a ureteral dilation (p<0.001) and continue with the procedure. In the case of lower pole stone, 45.9% of the surgeons preferred to reposition the stone in the upper pole or renal pelvis with a basket. After fragmentation, 47.2% of the responders preferred to retrieve only the bigger fragments, with the SU less likely to retrieve fragments (p=0.008). At the end of fURS, the decision to place a ureteric catheter/stent was mostly dependent on intra-operative factors (48.3%); less expert surgeons were more likely to place routinely a double j stent (p=0.001). In terms of durability, the more was the expertise of the surgeons the more was the estimated durability of the devices, both optical and digital ones (p<0.001). Finally, the more was the expertise of the responders, the more favourable was the opinion in terms of cost-effectiveness of the procedure (p<0.001).

CONCLUSION(S): The EAU guidelines not always are followed in the clinical practise. Expertise and age of the surgeons are the main factors that can influence the decision-making.

Furthermore, expert surgeons are more prompt to extend EAU indications and to apply a more cost-effective use of the technology.

Status

CONFERENCE ABSTRACT

Institution

(Sanguedolce) Northwick Park Hospital, Dept. of Urology, London, United Kingdom (Liatsikos)

Patras University, Dept. of Urology, Patras, Greece

(Verze) University of Naples - Federico II, Dept. of Urology, Naples, Italy

(Hruby) Paracelsus Medical University Salzburg, Dept. of Urology, Salzburg, Austria

(Breda) Fundacio Puigvert, Dept. of Urology, Barcelona, Spain

(Binbay) Haseki Training and Research Hospital, Dept. of Urology, Istanbul, Turkey

(Knoll) Klinikum Sindelfingen-Boblingen, University of Tübingen, Dept. of Urology, Sindelfingen, Germany

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698.

Decreasing the cost of flexible ureterorenoscopic (FURS) procedures using disposable laser fiber: A cost comparison analysis.

Chapman A., Somani B.K., Healy S., Robertson A., Kata S.G.

Embase

European Urology, Supplements. Conference: 28th Annual Congress of the European Association of Urology, EAU. Milan Italy. Conference Publication: (var.pagings). 12(1) (pp e434-e435), 2013. Date of Publication: March 2013.

[Conference Abstract]

AN: 71392759

INTRODUCTION & OBJECTIVES: The use of FURS now includes diagnostic procedures, endoscopic management of upper urinary tract (UUT) tumours, flexible URS and lasertripsy (FURSL) of calculus disease, and in selected cases for laser-guided endopyelotomy. We wanted to compare the annual cost of FURS procedures undertaken in our department from March 2009-March 2010 (Period 1) with March 2011-March 2012 (Period 2). **MATERIAL & METHODS:** In our hospital, FRUS procedures include diagnostic FRUS for potential Upper tract transitional cell carcinomas (UT-TCC), Photodynamic diagnosis (PDD) of upper urinary tract, endoscopic management of UT-TCC, and flexible ureterorenoscopy and lasertripsy (FURSL) for all sizes of renal stones up to partial staghorn stones. Occasionally we have also used it for endopyelotomy and management of difficult ureteric strictures. The scopes, the operating surgeon and disposables (guidewire, ureteric stent, ureteric access catheter, stone retrieval basket, and ureteric access sheath) were same in the two time periods. Whilst in period 1 we used cook reusable 365 mum and 200 mum fibres, during Period 2 we have used only cook disposable single use 273 mum laser fiber. Data for consecutive flexible ureteroscopic procedures during these two periods were compared. This included the indications for flexible ureterorenoscopy, cost of disposables, laser probes, and ureteroscope repair/maintenance. In our warranty cover for 7.5F Storz Flex X flexible ureteroscope agreement, all major repairs cost 3000 and with each repair the old flexible ureterorenoscope is replaced with a new scope. Our study excludes the cost of the initial purchase of the ureterorenoscopes or the holmium laser equipment and costs associated with staffing and hospital stay.

RESULT(S): The total number of FRUS procedures carried out in Period 1 and 2 were 260 and 265 respectively (Table 1). A total of 12 reusable (185 procedures) and 168 disposable laser fiber were used in these two time periods respectively, taking into account that a single fiber was used for bilateral procedures. Period 1 - Based on the cost of 550/365mum laser fiber and 1200/200mum laser fiber at an average of 15 procedures/fiber, the total cost was 11800. Period 2 - Based on the cost of 160/fiber/procedure, the total cost was 26880. 11 major repairs (9 laser damage) and 6 major repairs (3 laser damage) were carried out at a cost of 31000 (27000 for laser damage) and 17925 (9000 for laser damage) in periods 1 and 2 respectively. The cost of sterilization of the reusable laser fiber was 8/fiber. Taking into account the overall cost of the laser fiber, repair of laser damaged scopes and sterilization of the fibers the total annual cost decreased from 40184 to 35880 (whilst the cost of other disposables did not change in the two time periods).(Table Presented)

CONCLUSION(S): Based on our data, it is more cost effective to use a disposable laser fiber as it prevents scope damage, which can happen due to microfractures with repeated laser use.

Moreover, this will also reduce the risk of infection and save time/resource required with sterilization.

Status

CONFERENCE ABSTRACT

Institution

(Chapman, Healy, Robertson, Kata) Ninewells Hospital, Dept. of Urology, Dundee, United Kingdom (Somani) University Hospitals Southampton NHS Trust, Dept. of Urology, Southampton, United Kingdom

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699.

Single-stage laparoscopic management of impacted large proximal ureteric stone with concomitant multiple renal stones.

Tan T., Tan B., Chia S., Png K.

Embase

Urology. Conference: 33rd Congress of the Societe Internationale d'Urologie. Vancouver, BC Canada. Conference Publication: (var.pagings). 82(3 SUPPL. 1) (pp S174-S175), 2013. Date of Publication: September 2013.

[Conference Abstract]

AN: 71352396

Introduction and Objectives: Impacted, large proximal ureteric stone with concomitant renal stones present a endourological challenge in achieving stone-free status.

Material(s) and Method(s): Our patient presented with an impacted 3cm left upper ureter stone and three lower pole renal stones measuring 1.3cm, 1.2cm and 0.9cm in size. After anaesthesia, left retrograde pyelogram was performed and a ureteric stent inserted. The patient was repositioned in lateral position. Pneumoperitoneum was created and 4 ports were placed in a diamond configuration using three 12 mm ports and one 5 mm port. After exposing the ureter, the stone was identified and ureter was mobilized circumferentially around the stone. A nylon tape was slung proximal to the stone to prevent its proximal migration. An ureterotomy was made and the stone retrieved and placed in an entrapment bag. Full-thickness stay sutures were placed on both edges of the ureterotomy. A 16F flexible cystoscope was introduced through a 12 mm port into the ureterotomy and passed into the kidney.

Result(s): All three renal stones were retrieved with basket and removed. The ureterotomy was closed with interrupted polyglycolic sutures over the existing stent. Operating time was 180 minutes and estimated blood loss was 50 ml.

Conclusion(s): Laparoscopic ureterolithotomy with laparoscopic-guided ureteroscopic extraction of renal stones is an efficient technique in managing large impacted ureteric stones with concomitant renal stones.

Status

CONFERENCE ABSTRACT

Institution

(Tan, Tan, Chia, Png) Tan Tock Seng Hospital, Singapore, Singapore

Publisher

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700.

Pyelocaliceal stones intrarenal laser lithotripsy: Dust or extractable fragments?.

Multescu D.R., Georgescu D., Nita G., Dragutescu M., Satalan R., Geavlete P., Moldoveanu C.

Embase

European Urology, Supplements. Conference: EAU 13th Central European Meeting, CEM and the EAU 9th South Eastern European Meeting, SEEM. Prague Czechia. Conference Publication: (var.pagings). 12(4) (pp e1239), 2013. Date of Publication: October 2013.

[Conference Abstract]

AN: 71275050

INTRODUCTION & OBJECTIVES: Pyelocaliceal calculi flexible ureteroscopic approach raises problems related with operative time, associated morbidity and costs, especially by potential endoscope damage. MATERIAL & METHODS: 5 series, each of 20 patients with single pyelocaliceal lithiasis were analyzed: Group I with calculi < 1 cm fragmented to dust, Group II with calculi < 1 cm with lithotripsy in fragments, Group III with calculi of 1-2 cm fragmented to dust, Group IV with calculi of 1-2 cm with lithotripsy in fragments, Group V with calculi of 1-2 cm fragmented to dust until they reached 1 cm, and lithotripsy in fragments afterwards. In all cases were used a flexible Story Flex-Xc ureteroscope and Ho:YAG lithotripsy.

RESULT(S): Ureteral access sheath was used in 70% of the cases. Mean stone volume in groups I and II, and groups II, IV and V were similar. Success rate in all groups was statistically similar. Mean operating time was 39 min in group I, 21 min in Group II, 112 min in group III, 72 min in group IV and 51 min in group V. Minor complications occurred in 7 cases, while a single major complication occurred in group IV.

CONCLUSION(S): The optimal lithotripsy method of calculi < 1 cm seems to be into extractable fragments. Larger calculi should be fragmented to dust until they reach 1 cm and then the lithotripsy should be continued into extractable fragments.

Status

CONFERENCE ABSTRACT

Institution

(Multescu, Georgescu, Nita, Dragutescu, Satalan, Geavlete, Moldoveanu) Saint John Clinical Emergency Hospital, Dept. of Urology, Bucharest, Romania

Publisher

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701.

Short term results of ureteroscopic laser lithotripsy at akdeniz university.

Baykara M., Akin Y., Yucel S., Kol A., Sahiner I.F.

Embase

Journal of Endourology. Conference: 31st World Congress of Endourology and SWL, WCE 2013. New Orleans, LA United States. Conference Publication: (var.pagings). 27(SUPPL. 1) (pp A431), 2013. Date of Publication: October 2013.

[Conference Abstract]

AN: 71196170

INTRODUCTION AND OBJECTIVES: We investigated the factors effecting treatment results, morbidity and outcomes of ureteroscopic LASER lithotripsy cases at a single clinic to provide further evidence for safety and benefits of semi-rigid ureteroscopy and LASER as an energy source for ureteral stone management in an expert setting. This study was a part of CROES and was performed in Department of Urology, Akdeniz University School of Medicine, Antalya, Turkey.

METHOD(S): Data of patients who were operated in Department of Urology, Akdeniz University between January 2010 and July 2011, were evaluated retrospectively. Age, sex, body mass index (BMI), co-morbid diseases, ASA scores, preoperative urinary cultures, location and size of stone, utilized devices to prevent stone migration, stone-free rate, prophylactic antibiotics, operative time, hospital stay, and complications according to modified Clavien classification were recorded. The energy source was a Holmium-YAG LASER.

RESULT(S): Mean age (92 male and 45 female) was 43,6 +/- 18,2 year and mean BMI was 26,5 +/- 5,2 kg/m2. Thirty-six patients had comorbid diseases. Three patients had been using anticoagulant agents. Mean ASA score was 1.2. Fourty in proximal, 32 in middle, 65 in distal ureter stone which mean diameter was 12,8 +/- 5,27 cm were operated. All of the surgical procedures were performed by using semi-rigid ureterorenoscopy and guide-wire. Basket used for anti-stone cone device in 34 procedures. In 90 procedures, double pigtail catheters were placed. The stone diameter and location was not associated for using basket ($p > 0.05$). Stone-free rate was 88,3% after the first ureteroscopy. Overall stone free rate was 97%. Eight patients

had shock wave lithotripsy (SWL) after operation. Mean stone diameter of patients who needed SWL after surgery was 10,5 +/- 5,5 cm. Re-treatment rate and SWL was associated with stone diameter ($p < 0.05$). Only 1 patient had fever (Clavien 1) even without urinary infection and residual fragmentations. Second day of antibio-therapy, fever decreased and she was discharged. The mean hospital stay was 1 and the mean operation time was 32,3 +/- 12 minutes. Operation time and day of hospitalization was not associated with stone diameter, age, sex, side and location of stone, urinary infection statistically.

CONCLUSION(S): Ureteroscopic management of ureteral stones is safe and effective with a 7.5 Fr. semirigid ureteroscope and Ho: YAG LASER lithotripter. The stone-free rate is related to stone size and experience regardless the stone location. With more experience, postoperative ureteral stenting can be omitted with high success and low complication rates.

Status

CONFERENCE ABSTRACT

Institution

(Baykara, Yucel, Kol, Sahiner) AntalyaTurkey (Akin) ErzincanTurkey

Publisher

Mary Ann Liebert Inc.

Year of Publication

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702.

Use of a 1.3 f nitinol stone retrieval basket facilitates extraction of renal and ureteral calculi to render patients stone free.

Malik M., Wright C., Yates J., Munver R.

Embase

Journal of Endourology. Conference: 31st World Congress of Endourology and SWL, WCE 2013. New Orleans, LA United States. Conference Publication: (var.pagings). 27(SUPPL. 1) (pp A408-A409), 2013. Date of Publication: October 2013.

[Conference Abstract]

AN: 71196111

INTRODUCTION AND OBJECTIVES: Advances in ureteroscope and stone basket design have resulted in highlighting ureteroscopic surgery as a first line therapy for surgical stone management. However, retrieval of small stones and stone fragments continue to challenge urologists in rendering patients truly stone-free. A novel 1.3 F nitinol stone retrieval basket was designed to capture even the smallest calculi and facilitate stone clearance from the ureter, renal pelvis, and calyces. We report on our experience with this basket for the treatment of urinary calculi, and compare the use of this device to other methods of optimizing ureteroscopic stone management.

METHOD(S): A prospective evaluation of 43 patients undergoing ureteroscopic holmium: YAG laser lithotripsy of urinary calculi was performed at a single institution. A 1.3 F nitinol stone retrieval basket was used to facilitate extraction of small calculi or stone fragments. Patient demographics and perioperative parameters were assessed.

RESULT(S): 43 patients (29 male, 14 female), with a mean age of 54.9 years (range 24-77 years) were treated for renal calculi (n = 20), ureteral calculi (n = 12), or a combination of renal and ureteral calculi (n = 11). The mean aggregate stone diameter/ burden was 1.12 cm (range 0.6-2.2 cm), mean number of stone fragments retrieved was 12 (range 3-42). A single basket was used in 38 (88%) cases and two baskets were used in 5 (12%) cases. Baskets were used in conjunction with a flexible ureteroscope and ureteral access sheath in 39 (91%) cases and with a semirigid ureteroscope in 4 (9%) cases. No complications were encountered from use of the basket. All patients were determined to be stone free based on visual inspection via the ureteroscope. Ninety three percent (40/43) of patients were rendered completely stone free based on subsequent radiologic imaging studies. Of the three patients with residual calculi, one patient was a renal calculus had two residual < 3mm fragments, and 2 patients with renal calculi had one residual fragment < 3mm each.

CONCLUSION(S): The use of a 1.3 F nitinol stone retrieval basket appears to be safe and efficacious in facilitating ureteroscopic laser lithotripsy and stone extraction. This basket is most advantageous for clearing lower pole small (< 3mm) fragments that may otherwise persist and potentially increase in size. While this basket is more fragile than larger diameter baskets, judicious use can result in minimizing further treatment by rendering patients stone free following a single procedure.

Status

CONFERENCE ABSTRACT

Institution

(Malik, Wright, Yates, Munver) HackensackNJUnited States

Publisher

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703.

Completely standardized flexible ureterorenoscopy for treating renal calculi: A single-center experience.

Karpathakis N., Fasoulakis K., Georgopoulos I., Bolonakis I., Sofras F., Mamoulakis C.

Embase

Journal of Endourology. Conference: 31st World Congress of Endourology and SWL, WCE 2013. New Orleans, LA United States. Conference Publication: (var.pagings). 27(SUPPL. 1) (pp A407-A408), 2013. Date of Publication: October 2013.

[Conference Abstract]

AN: 71196109

INTRODUCTION AND OBJECTIVES: To report efficacy/ safety of flexible ureterorenoscopy (FURS) for treating renal calculi.

METHOD(S): Retrospective analysis of the first 41 consecutive procedures performed by a single surgeon over 15 months (January 2012-March 2013) on 36 patients with 46 stones (renal pelvis/ lower-/mid-/upper calyx: 25/12/7/2; mean size 16.1 +/- 0.73mm (range 8-30mm)). Two procedures were performed on solitary kidneys, one on horseshoe-pelvic and one on kidney with ureteral transposition. Mean operation time was 137.0 +/- 38.6 min (range 70-210 min). All procedures were completely standardized. Patients were pre-stented. Semi-rigid ureteroscopy was performed over a guidewire (Zebra or Sensor). A 12 F Flexor Ureteral Access Sheath was

inserted over the wire. The wire was removed and pyelography was performed. An Uretero-Renoscope-Fiberscope Flex-X2 or ViperTMFlexible Ureteroscope was used. A 1.9 F Zero Tip Nitinol Stone Retrieval Basket was used for calyceal stone relocation. Ho: YAG laser (Calculuson) delivered via a 230/365nm fiber was used at 4.8-10.2W. An irrigation pump (ENDOMAT LC) was used at a maximum rate of 150 ml/min. After lithotripsy, all fragments were removed through the sheath. Stone free status was confirmed by inspection of all calyces intraoperatively. A wire was placed through the sheath. The sheath was removed with simultaneous ureteral inspection. A 6-7 F Percuflex Plus Ureteral Stent was placed over the wire and an 18 F Foley catheter was inserted. All procedures were performed under radiologic imaging. Catheter was removed next day and patients were discharged. Stents were removed two weeks later on outpatient basis. KUB was performed for final assessment.

RESULT(S): Stone free rate was 91.6% (33/36). Three procedures were marked as "failures": ureter could not be accessed (n = 2); early termination of the procedure due to perforation (n = 1). The latter case underwent second procedure to remove remaining stone. Four patients required second procedure due to large stone burden. Safety was assessed by reporting complications within 6 weeks postoperatively according to the modified Clavien-Dindo system. There were 3 complications. Two cases of febrile urinary tract infection required prolonged hospitalization/readmission for intravenous antibiotic treatment (grade II), and one case of immediate postoperative sepsis necessitated admission to ICU (grade IV-a). Overall complication rate was 9.7%.

CONCLUSION(S): FURS is a safe and efficient method for treating renal calculi.

Status

CONFERENCE ABSTRACT

Institution

(Karpathakis, Fasoulakis, Georgopoulos, Bolonakis, Sofras, Mamoulakis) HeraklionGreece

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704.

How accurate is endoscopic intraoperative assessment of kidney stone size?.

Patel N., Chew B., Knudsen B., Lipkin M., Sur R.

Embase

Journal of Endourology. Conference: 31st World Congress of Endourology and SWL, WCE 2013. New Orleans, LA United States. Conference Publication: (var.pagings). 27(SUPPL. 1) (pp A405), 2013. Date of Publication: October 2013.

[Conference Abstract]

AN: 71196101

INTRODUCTION AND OBJECTIVES: Endoscopic treatment of renal calculi relies on surgeon assessment of residual stone fragment size for either basket removal or for the passage of fragments post-operatively. We therefore sought to determine the accuracy of endoscopic assessment of renal calculi size.

METHOD(S): Four board certified endourologists participated in an ex vivo artificial endoscopic simulation. A total of 10 pebbles were measured (mm) with electronic calipers and placed into separate labeled opaque test tubes to prevent visualization of the stones through the side of the tube. Endourologists were blinded to the actual size of the stones. A flexible digital ureteroscope with a 200- 240 micron core-sized laser fiber in the working channel as a size reference was placed into the test tube to estimate the stone size (mm). Accuracy was determined by comparing the mean measurements to the true measurements.

RESULT(S): See table

CONCLUSION(S): This ex-vivo simulation study demonstrates that endoscopic assessment is relatively reliable when assessing stone size. On average, there was a slight tendency to over-estimate stone size by 0.2 mm. These findings could be generalized to (Table Presented) state that endourologists are accurately able to assess residual stone fragment size intra-operatively.

Status

CONFERENCE ABSTRACT

Institution

(Patel, Sur) San DiegoCAUnited States (Chew) VancouverCanada

(Knudsen) ColumbusOHUnited States

(Lipkin) DurhamNCUnited States

Publisher

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705.

A novel stone management device during endolithotripsy for ureteral stones: First multi-institutional experience.

Macchione N., Sanguedolce F., Hruby S., Austria S., Longo F., Kachrilas S., Masood J., Buchholz N., Montanari E.

Embase

Journal of Endourology. Conference: 31st World Congress of Endourology and SWL, WCE 2013. New Orleans, LA United States. Conference Publication: (var.pagings). 27(SUPPL. 1) (pp A403), 2013. Date of Publication: October 2013.

[Conference Abstract]

AN: 71196096

INTRODUCTION AND OBJECTIVES: Stone migration during ureteroscopic lithotripsy leads to the need for additional procedures for residual calculi. This is the first multi-centre study evaluating in the clinical practice the efficacy of the XenXTM (Xenolith Medical, Israel) - a device designed to combine guidewire and stone retention functionalities.

METHOD(S): Between March and May 2013, 16 patients recruited across 3 European stone centres underwent ureteroscopy and laser fragmentation using the XenX - a 0.038 inch guidewire and retention combination device - for the treatment of 1 cm (mean size) ureteral stones.

Demographics, complication rates and surgical outcomes were prospectively collected; similarly, subjective evaluation with a Likert-like 5-grade scoring system (1 = very bad; 5 = very good) was provided by the surgeons with regards to XenX properties, such as pushability satisfaction, ease of deployment, full expansion and coaptation to ureter walls, kink resistance, stone retention capabilities, device retrieval, ease of stenting, device radiopacity, and ease of basketing. Stone-

free condition was defined as the absence of residual fragments; it was evaluated intra-operatively by fluoroscopy or endoscopy (flexible ureteroroscopy), at day-1 post-op by US-KUB or X-ray KUB, and at 1-month follow-up by NCCT scan (available in 8 patients).

RESULT(S): There were 12 male and 6 female, with a mean age of 48 yo (range: 22-77 ys); all patients had a single, unilateral ureteral stone (8 right and 10 left sided). Mean stone size was 8.6mm (range 4-15mm), located in 81.25% of the cases in the proximal ureter. Mean operative time was 32 minutes (S.D. 14 mins) and mean hospital stay was 2.69 days (range 1-4 days). No complications have been encountered. SFRs and evaluation modalities are reported in table 1. Median operators' evaluations for XenX were "Good" for all the domains surveyed.

CONCLUSION(S): This preliminary study shows that XenX is an innovative device which might combine effectively and safely the stone retention and the guide-wire functionalities in just one instrument. Larger and comparative studies are needed to confirm these results. (Table Presented).

Status

CONFERENCE ABSTRACT

Institution

(Macchione, Hruby, Austria, Longo, Montanari) Milan Italy (Sanguedolce, Kachrilas, Masood, Buchholz) London United Kingdom

Publisher

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706.

Percutaneous access under direct endoscopic visualization: A modified approach for percutaneous nephrolithotomy.

De S., Brown R., Marchini G., Sarkissian C., Monga M.

Embase

Journal of Endourology. Conference: 31st World Congress of Endourology and SWL, WCE 2013. New Orleans, LA United States. Conference Publication: (var.pagings). 27(SUPPL. 1) (pp A370), 2013. Date of Publication: October 2013.

[Conference Abstract]

AN: 71196019

INTRODUCTION AND OBJECTIVES: Percutaneous nephrolithotomy has been replaced the need for open surgery in the vast majority of kidney stone cases. Evolved from retrograde contrast approaches, we employ an endoscopic assisted procedure. Using flexible ureteroscopy (URS) for calyx selection with concurrent fluoroscopy, we can be very specific with positioning our access. Comparing this method to radiologist attained fluoroscopic access, we have noted several key benefits.

METHOD(S): Prone cystoscopy is performed, allowing safety and working wires to be inserted. A ureteric re-entry sheath is placed for the duration of the case, and flexible ureteroscopy is performed. The optimal calyx is visualized, and the scope tip is held in that position.

Fluoroscopically a Chiba needle is placed in line with the angulation of the calyx, using the bulls-eye technique to achieve the correct trajectory. Once oriented, the Carm is rotated 50 off axis to judge depth of penetration, and the needle is advanced (while endoscopically observing the papilla). When the needle and URS tips meet fluoroscopically, the assistant sees the needle tip emerge from the papilla. The trocar is removed from the needle, and a Benston wire is passed, and pulled to the meatus using a preloaded URS basket. The Benston is exchanged for a superstiff wire through an open ended catheter, which then becomes a through-and-through safety/working wire. Balloon dilation and sheath placement are performed under URS minimizes the risk of not being in the collecting system. If fragmentation is required, flexible nephroscopy/ureteroscopy are performed at the end of the procedure to ensure no residual stones. A double J stent and skin stitch are placed, without leaving any nephrostomy tubes. Post op CXR is ordered for all supra-costal accesses.

RESULT(S): To date we have performed several hundred consecutive cases using this approach. Comparing 160 patients, (fluoroscopic PCNL vs. endoscopic assisted PCNL) we had significantly decreased fluoroscopy time by 87.5% (20 min vs 2.5min), decreased the need for secondary procedures by 80% (14 vs 3), and reduced the number of cases terminated due to bleeding (6 vs 0 cases).

CONCLUSION(S): Endoscopic guidance for percutaneous access is an easy modification, allowing for an added degree of selectivity and accuracy. With benefits seen in fluoroscopy time, reducing the need for secondary procedures, and bleeding risk, we have now employed this method as our standard of care.

Status

CONFERENCE ABSTRACT

Institution

(De, Brown, Marchini, Sarkissian, Monga) ClevelandOHUnited States

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707.

Retrograde endoscopic management of calyceal diverticulum with concomitant renal calculi.

Oommen M., Patel K., Caire A., Dorsey P., Woodson B., Thomas R.

Embase

Journal of Endourology. Conference: 31st World Congress of Endourology and SWL, WCE 2013. New Orleans, LA United States. Conference Publication: (var.pagings). 27(SUPPL. 1) (pp A305), 2013. Date of Publication: October 2013.

[Conference Abstract]

AN: 71195852

INTRODUCTION AND OBJECTIVES: The presence of symptomatic renal calculi within a calyceal diverticulum, especially a small one, can pose a treatment challenge to a practicing urologist. We present our technique of retrograde intrarenal surgery as a viable option for optimal therapy.

METHOD(S): CT scan and retrograde pyelogram was diagnostic for a calyceal diverticulum containing numerous calculi. Options were discussed including a percutaneous renal surgery, laparoscopy, and retrograde intrarenal surgery. Based on the distance from the renal capsule,

body habitus, and small size of the diverticulum, the decision was made to perform a retrograde approach.

RESULT(S): Retrograde intrarenal surgery was performed with the aid of the flexible ureteroscope, holmium laser, and fluoroscopic guidance. Once the wall of the diverticulum was localized within the renal pelvis, the holmium laser was used to enter the diverticulum. Upon entry, multiple renal calculi were identified. Basket extraction was performed along with holmium laser lithotripsy. A double-j ureteral stent was placed once the larger stones had been extracted and a large enough channel had been created for easy passage of the residual fragments.

CONCLUSION(S): Retrograde intrarenal surgery for the treatment of calyceal diverticulum with concomitant renal calculi is a viable option. Patient selection is crucial when choosing the best approach for treatment.

Status

CONFERENCE ABSTRACT

Institution

(Oommen, Patel, Caire, Dorsey, Woodson, Thomas) New OrleansLAUnited States

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708.

Transperitoneal flexible endoscopy facilitates stone removal during minimally invasive pyelolithotomy.

Borin J., McDaniel J., Chan S.

Embase

Journal of Endourology. Conference: 31st World Congress of Endourology and SWL, WCE 2013. New Orleans, LA United States. Conference Publication: (var.pagings). 27(SUPPL. 1) (pp A305), 2013. Date of Publication: October 2013.

[Conference Abstract]

AN: 71195850

INTRODUCTION AND OBJECTIVES: Large stones in the renal pelvis and proximal ureter may be amenable to laparoscopic or robotic pyelolithotomy. In select patients, this will increase the chances of rendering a patient stone-free with decreased risk of bleeding or sepsis. In this video, we demonstrate our technique of minimally invasive pyelolithotomy facilitated by transperitoneal endoscopy to remove residual stone fragments.

METHOD(S): Two patients with significant stone burdens in the proximal ureter (1.9 2.5 cm) and renal pelvis (4.6 4.0 cm) underwent laparoscopic and robotic pyelolithotomy, respectively. In addition to the primary calculus, preoperative CT scans demonstrated several lower pole stones in both patients.

RESULT(S): Mean OR time was 222 minutes and there were no intraoperative complications. Lower pole stones were removed via transperitoneal renal endoscopy using a flexible cystoscope and basket. Both patients required an additional ureteroscopy; one patient to remove small stones in the contralateral kidney, the other to remove a lower pole stone which was not accessible intraoperatively. Stents were removed at the time of ureteroscopy.

CONCLUSION(S): Laparoscopic and robotic pyelolithotomy can provide an alternative to percutaneous nephrolithotomy in selected patients. Transperitoneal flexible endoscopy is a useful adjunct to facilitate stone removal. Ureteroscopy may be performed, if necessary, at the time of stent removal.

Status

CONFERENCE ABSTRACT

Institution

(Borin, McDaniel, Chan) BaltimoreMDUnited States

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709.

Complications in upper ureteroscopy and lithotripsy.

Gaizauskas A., Gaizauskas S.

Embase

Journal of Endourology. Conference: 31st World Congress of Endourology and SWL, WCE 2013. New Orleans, LA United States. Conference Publication: (var.pagings). 27(SUPPL. 1) (pp A292), 2013. Date of Publication: October 2013.

[Conference Abstract]

AN: 71195819

INTRODUCTION AND OBJECTIVES: Ureteroscopy is an usual procedure for ureter stones. In literature data stone free rate is high and complication rate is low, but incidence of complications in upper part of ureter (segment between L2-L5) is higher.

METHOD(S): From 2007 till 2012 in our department we performed 521 various localisation ureteroscopy cause of stone in ureter. We use 9.8 Ch semirigid ureteroscope and in case of lithotripsy-holmium laser. We always use a safety guidewire. From 2011 we started recording all ureteroscopy complications in upper part of ureter. We performed re-examination and repeated sonoscopy after 2, 4 and 12 weeks after operation to all patients after ureteroscopy in upper part of ureter.

RESULT(S): In period 2011-2012 we performed 27 high ureteroscopies and lithotripsies. We achieved 88,9% stone free rate at the end of operation and 100% stone free rate after 1 month after ureteroscopy. But we registered high incidence of complications. Simple complications: in 1 (3,7%) case we did not reach the stone cause of narrow ureter; 1 (3,7%) patient had serious stent irritative symptoms; in 6 cases (22,2%) stones migrated from ureter to kidney. Serious complications: 2 (7,4%) cases of ureter perforation; in 2 cases (7,4%) after 3 months after ureteroscopy we diagnosed ureter strictures. Both patient were asymptomatic and needed ureter repair operations (first case-ureteroscopy + dilatation; second case-ureter resection). In 1 case we had complete ureter avulsion (two point or scabbard avulsion). 5 months after ureteroscopy we performed ileal segment (30 cm) reposition.

CONCLUSION(S): Irrespective of high stone free rate in upper ureteroscopy, complication rate is high. Small complications, such as stone migrations or narrow ureter, which do not allow to reach the stone in ureter, are simple to manage. But large ureteroscopy complications: stricture

formation or avulsion always is a challenge in urology. We recommend to perform high ureteroscopies only in departments which have appropriate equipment for ureteroscopy (laser, flexible ureteropyeloscopes, baskets etc.). Late (after 3 months) double-check for patients, who underwent high ureteroscopy is recommended.

Status

CONFERENCE ABSTRACT

Institution

(Gaizauskas, Gaizauskas) Vilnius, Lithuania

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710.

Modified technique of retrograde intra renal surgery.

Joshi N.

Embase

Journal of Endourology. Conference: 31st World Congress of Endourology and SWL, WCE 2013. New Orleans, LA United States. Conference Publication: (var.pagings). 27(SUPPL. 1) (pp A247-A248), 2013. Date of Publication: October 2013.

[Conference Abstract]

AN: 71195710

INTRODUCTION AND OBJECTIVES: Retrograde Intra Renal Surgery (RIRS) is an established procedure. It is mainly used for removal of upper urinary stones. The procedure has many established advantages and is preferred due to its non invasiveness. In standard technique, 1. Operating surgeon handles both-flexible scope and camera by himself. This makes maneuvering

of the scope, targeting the stone & manipulating the stone very cumbersome & tiring. This leads to lengthy procedure, fatigue to the surgeon, non retrieval of stone & equipment breakage. 2. The camera does not stay in neutral position, making endo vision orientation difficult. 3. The scope is curved near the handle leading to high chance of damage to the inner channel.

METHOD(S): The Cystoscopy Sheath is introduced in the bladder. 6 Fr and 8 Fr Semi rigid ureterorenoscope are used to dilate the ureter under vision to facilitate the introduction of the initial access sheath. Two guide wires are inserted. Initial access sheath is inserted. The main modification of the technique is: The scope is held straight at every point. 1st Assistant stabilizes the scope & maintains the camera alignment. Surgeon's left hand does to & fro movement of scope or device manipulation. And right hand does rotation & deflection movements of the scope. 2nd Assistant-Catches the stone by a special basket. By keeping the camera stabilized, the endo orientation is never lost. By this method the inner channel stays straight, decreasing the chance of inner channel damage. The surgeon has full control of his movements and easily concentrates on the procedure without getting fatigue or losing the field of vision. Help of two assistants takes away the strain. Double channel Flexible scope has advantage of non leakage of irrigation while working with a device. Use of smaller laser fiber leads to less chance of damage. Laser fiber must be inserted gently and in a straight scope. Laser tip should be just visible before flexing the scope to target the stone. A Specially designed basket catches stones very smoothly from the cup of the calyx. The double channel scope allows stone being held with a basket and laser inserted through another channel to fragment the stone. If stone is not focused for grasping or lasing, saline is flushed by a syringe to dislodge the stone.

RESULT(S): More than 130 cases of RIRS were done with one scope. Time from starting the procedure to visualize the stone was on average 10 minutes. The operating time reduced from average 3 hours to about 1.5 hour by this technique. Stone clearance rate was 85%.

CONCLUSION(S): Modified technique of RIRS increases the durability of the scope. And also makes the procedure easy, fast & cost effective.

Status

CONFERENCE ABSTRACT

Institution

(Joshi) Al AinUnited Arab Emirates

Publisher

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711.

Turkish robot for commercially available flexible ureterorenoscopes for the retrograde intrarenal surgery (RIRS).

Saglam R., Rassweiler J.J., Muslumanoglu A.Y., Kabakci A.S.

Embase

Journal of Endourology. Conference: 31st World Congress of Endourology and SWL, WCE 2013. New Orleans, LA United States. Conference Publication: (var.pagings). 27(SUPPL. 1) (pp A247), 2013. Date of Publication: October 2013.

[Conference Abstract]

AN: 71195709

INTRODUCTION AND OBJECTIVES: In this presentation we aimed to show some advantages of the new robot RoboflexAvicenna in the treatment of kidney stones, such as precise positioning of a ureterorenoscope distal end, and its stability within the caliceal system, the remote control movement of the laser fiber, to operate seated and away from the radiation.

METHOD(S): After insertion and fixing the access sheath and covering the robot with a sterile, transparent, plastic sheath, the flexible UreteroRenoScope (fURS) is introduced into the sheath manually and connected to the robot. Ergonomic chair and control panel can be adjusted in a comfortable position according to the user. Deflection can be performed precisely, by manipulating the right handle similar to standart fURS. The rotation and forward and backward movement can be controlled by left handle. The selectable speed control for the forward and backward movement of the fURS serves precision in movements. Attached water pump can be adjusted remotely to increase or decrease the flow rate to provide better vision. The advantages of the robot to protect the flexible URS: Before the insertion of the laser fiber, pressing the button on the touch screen, the tip of the fURS comes automatically in a straight position. Laser fiber can be remotely moved forward and backward, It is possible to read the length of laser fiber in mm. When necessary, pressing the button on the touch screen, the laser tip moves completely backward. The laser can not be shot while the tip of the laser fiber is closer than 2mm to the tip.

RESULT(S): We successfully controlled all functions of the flexible URS by using robot and dusted/fragmented all of the stones. The connection time of FURS to the robot was shorter than 1 minute. There were no damage of the fURS.

CONCLUSION(S): We found that robotic use of fURS is very suitable to perform it in sitting position, outside of the radiation zone, the position and stability of the tip was satisfied, connection to the robot takes a short time, adjustable irrigation fluid flow provides better vision.

Status

CONFERENCE ABSTRACT

Institution

(Saglam, Kabakci) AnkaraTurkey (Rassweiler) HeilbronnGermany

(Muslumanoglu) IstanbulTurkey

Publisher

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712.

Needleoscopy: The incorporation of a new technology for the management of pediatric ureteral calculi.

Martinez D., Swana H., Rich M.

Embase

Journal of Endourology. Conference: 31st World Congress of Endourology and SWL, WCE 2013. New Orleans, LA United States. Conference Publication: (var.pagings). 27(SUPPL. 1) (pp A198-A199), 2013. Date of Publication: October 2013.

[Conference Abstract]

AN: 71195591

INTRODUCTION AND OBJECTIVES: The incidence of pediatric stone disease has become more prevalent. Different endoscopic treatment options exist for the management of ureteral calculi which can be challenging due to the small and delicate anatomy of ureters in children. We present our technique and describe our experience using the new Richard Wolf 4.5/6 French 0-blunt needle tip fiber optic cystoscope for cystoureteroscopy and laser lithotripsy in our last five cases of pediatric distal ureteral calculi.

METHOD(S): Of the five cases in our series, all five were completed using a standardized endoscopic protocol. Cystourethroscopy was performed using the Richard Wolf 4.5/6 Fr. 0-Newborn blunt needle tip fiber optic cystoscope, followed by placement of a guide wire into the ureter. The short, 110mm working length, infantile cystoscope was utilized to perform distal ureteroscopy without the need for ureteral dilation. Using normal saline irrigation on high pressure flow the stone was visualized and lithotripsy performed by holmium laser.

RESULT(S): Of the five cases, all were treated successfully, defined as no residual stone burden. The five patients ranged in age from 5-15 years old. There were 2 male and 3 female patients. Stone sizes ranged from 4-8mm in size. Basket removal of residual fragments was possible with up to a 2.4 Fr. stone basket. All five stones were in the distal ureter. All five patients also had placement of temporary ureteral stent.

CONCLUSION(S): We believe this to be the first report utilizing this new infant cystoscopic technology for therapeutic treatment of distal ureteral calculi in children. In the past the small working channels of these scopes only made them useful for diagnostic evaluation. The Richard Wolf 4.5/6 Fr. 0- Newborn blunt needle tip fiber optic cystoscope provides superior optics, a 3 Fr. working sheath and narrow tip for easier access to the ureter without need for ureteral dilation. Using miniaturized technology that serves both cystoscopic and ureteroscopic functions simplifies the procedure and makes the management of distal urolithiasis less cumbersome than with longer adult ureteroscopes. We believe this new pediatric needle cystoscope should be added to the armamentarium of the pediatric urologist for management of distal ureteral stones and ureteroscopy in children.

Status

CONFERENCE ABSTRACT

Institution

(Martinez) TampaFLUnited States (Swana, Rich) OrlandoFLUnited States

Publisher

Mary Ann Liebert Inc.

Year of Publication

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713.

A second simultaneous percutaneous renal tract with the rigid ureteroscope.

Lezrek M., Bazine K., Alaoui A.S., Tazi H., Alami M.

Embase

Journal of Endourology. Conference: 31st World Congress of Endourology and SWL, WCE 2013. New Orleans, LA United States. Conference Publication: (var.pagings). 27(SUPPL. 1) (pp A108-A109), 2013. Date of Publication: October 2013.

[Conference Abstract]

AN: 71195374

INTRODUCTION AND OBJECTIVES: We describe a video of our experience in managing complex renal calculi by combining a standard first tract using a nephroscope and a simultaneous second percutaneous tract using a rigid ureteroscope.

METHOD(S): Between January 2005 and June 2011, data from 30 patients (19 men and 11 women) corresponding to 32 renal units with multiple complex renal stones, which required multiple (2) access tracts in a single session, were analyzed retrospectively. Patient's age ranged from 21 to 75 years (mean 38.7). Operative technique: percutaneous surgery is performed in the split leg modified lateral position. The first tract is achieved with a 24 or 30 FrAmplatz sheath, using a 20.8 Fr nephroscope. When another percutaneous tract is necessary, a second caliceal puncture is performed. Dilation to 10 or 12 Fr and insertion of a safety guidewire are mostly performed under endoscopic control without radiation exposure. The rigid ureteroscope (6 or 8 Fr) is introduced over a guidewire under direct vision. Then, it is used to mobilize stones from the calyx to the renal pelvis. Stone fragmentation and extraction is performed via the first tract by the nephroscope, simultaneously if possible, or alternately. At the end of the procedure a 20 Fr Foley catheter and an 8 Fr drain tube are respectively inserted in the first and second tract.

RESULT(S): A second or third mini tract, using the rigid ureteroscope, was possible in all patients. A total of 67 percutaneous access tracts were realized. 28, 23, and 16 tracts were

respectively through the upper, middle and lower calyx. The mean operating time was 125 min (extreme 85-192 min). The number of access was 2 in 29 renal units, and 3 in 3 renal units. The average decrease in serum hemoglobin was 2.7-0.9 g/dl. The mean hospital stay was 4.5 days (3-6 days). A single-stage PCNL resulted in complete clearance in 27 renal units (84%). No transfusion was required. 4 patients had a postoperative fever of more than 38.51 C-, were treated by antibiotic therapy. 1 patient with 3 accesses a perirenal collection that resolved spontaneously.

CONCLUSION(S): A second or third mini tract, using the rigid ureteroscope, was possible and safe. It is another application for the rigid ureteroscope, already available in every endourology operating room, so there is no need for new equipment (mininephroscope). In addition, this mini second tract might provide less morbidity than a standard second tract. Also, it might avoid the need for a second look, and the need for flexible instruments (baskets, flexible lithotripter.), which are more expensive.

Status

CONFERENCE ABSTRACT

Institution

(Lezrek, Bazine, Alaoui, Tazi, Alami) MeknesMorocco

Publisher

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2013

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714.

Laparoendoscopic management of the common bile duct stones.

Leon J.D.L., Dorantes A.R., Leon C.D.L., Arredondo F.C., Armenta A.C.

Embase

Surgical Endoscopy and Other Interventional Techniques. Conference: 2013 Scientific Session of the Society of American Gastrointestinal and Endoscopic Surgeons, SAGES 2013. Baltimore, MD United States. Conference Publication: (var.pagings). 27(SUPPL. 1) (pp S409), 2013. Date of Publication: April 2013.

[Conference Abstract]

AN: 71044993

Introduction: The aim of this video is to present a summary of different ways of common bile duct exploration. The Laparoendoscopic exploration of the common bile duct requires skill and coordination of the surgical team, it can be performed by a transcystic or transcholedocian approach. Between 8 and 19 % of the general population may have an unnoticed gallstone in the bile duct, this suggests that in patients with biliary dilatation confirmed pre or intraoperatively and abnormal Liver function test like increases in alkaline phosphatase, bilirubin, or aminotransferases level, small stones or microlithiasis, bile duct exploration should be considered. **Methods and Procedures:** We present an easier way to explore the bile duct in patients with dilatation of common bile duct by stone disease, several cases are presented consecutively: transcystic intraoperative cholangiography, extraction of stones with Fogarty catheter by transcystic way, exploration and extraction stones with flexible ureteroscopic with Dormia basket and wave shock electrohydraulic lithotripsy, exploration of common bile duct using Lens 30 of 5 mm through subxyphoid trocar and surgiwand of 5 mm through trocar of 5 mm in the right midclavicular line and position the patient in semi-fowler and decubitus right side, transcholedocian Laparoendoscopic exploration and extraction of stone with Dormia basket and balloon Fogarty, T-tube placement, endoscopic sphincterotomy and ERCP, Coledocoduodeno anastomosis and endoscopic view in patient that required that.

Result(s): The clearance of the bile duct was obtained in all patient except one patient that required choledocoduodenal anastomoses, five patient were referred to an interventional endoscopist to an endoscopic sphincterotomy an ERCP.

Conclusion(s): We believe that now you can make a proper exploration and clearance of the bile duct in the form of minimally invasive surgery thanks to the technological armamentarium that exists today.

Status

CONFERENCE ABSTRACT

Institution

(Leon, Dorantes, Leon, Arredondo, Armenta) Santa Monica Hospital Cuernavaca, Morelos, Mexico

Publisher

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715.

Percutaneous access under direct endoscopic visualization: A modified approach for percutaneous nephrolithotomy.

De S., Marchini G., Carl S., Monga M.

Embase

Journal of Urology. Conference: 2013 Annual Meeting of the American Urological Association, AUA. San Diego, CA United States. Conference Publication: (var.pagings). 189(4 SUPPL. 1) (pp e708), 2013. Date of Publication: April 2013.

[Conference Abstract]

AN: 71032663

INTRODUCTION AND OBJECTIVES: Percutaneous nephrolithotomy has replaced the need for open surgery in the vast majority of kidney stone cases. Evolved from retrograde contrast approaches, we employ an endoscopic assisted procedure. Using flexible ureteroscopy (URS) for calyx selection with concurrent fluoroscopy, we can be very specific with positioning our access. Comparing this method to completely fluoroscopic access, we have noted several key benefits.

METHOD(S): Prone cystoscopy is performed, allowing safety and working wires to be inserted. A ureteric re-entry sheath is placed for the duration of the case, and flexible ureteroscopy is performed. The optimal calyx is visualized, and the scope tip is held in that position.

Fluoroscopically a Chiba needle is placed in line with the angulation of the calyx, using the bulls-eye technique to achieve the correct trajectory. Once oriented, the C-arm is rotated 50 off axis to judge depth of penetration, and the needle is advanced (while endoscopically observing the papilla). When the needle and URS tips meet fluoroscopically, the assistant sees the needle tip emerge from the papilla. The trocar is removed from the needle, and a Benston wire is passed, and pulled to the meatus using a preloaded URS basket. The Benston is exchanged for a

superstiff wire through an open ended catheter, which then becomes a through-and-through safety/working wire. Balloon dilation and sheath placement are performed under URS minimizes the risk of not being in the collecting system. If fragmentation is required, flexible nephroscopy/ureteroscopy are performed at the end of the procedure to ensure no residual stones. A double J stent and skin stitch are placed, without leaving any nephrostomy tubes. Post op CXR is ordered for all supra-costal accesses.

RESULT(S): To date we have performed several hundred consecutive cases using this approach. Comparing 160 patients, (fluoroscopic PCNL vs. endoscopic assisted PCNL) we had significantly decreased fluoroscopy time by 87.5% (20min vs 2.5min), decreased the need for secondary procedures by 80% (14 vs 3), and reduced the number of cases terminated due to bleeding (6 vs 0 cases).

CONCLUSION(S): Endoscopic guidance for percutaneous access is an easy modification, allowing for an added degree of selectivity and accuracy. With benefits seen in fluoroscopy time, reducing the need for secondary procedures, and bleeding risk, we have now employed this method as our standard of care.

Status

CONFERENCE ABSTRACT

Institution

(De, Marchini, Carl, Monga) ClevelandOHUnited States

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716.

Retrograde intrarenal surgery for treatment of calyceal diverticulum with concomitant renal calculi.

Oommen M., Caire A., Thomas R., Patel K.

Embase

Journal of Urology. Conference: 2013 Annual Meeting of the American Urological Association, AUA. San Diego, CA United States. Conference Publication: (var.pagings). 189(4 SUPPL. 1) (pp e708), 2013. Date of Publication: April 2013.

[Conference Abstract]

AN: 71032662

INTRODUCTION AND OBJECTIVES: The presence of symptomatic renal calculi within a calyceal diverticulum, especially a small one, can pose a treatment challenge to a practicing urologist. We present our technique of retrograde intrarenal surgery as a viable option for optimal therapy.

METHOD(S): CT scan and retrograde pyelogram was diagnostic for a calyceal diverticulum containing numerous calculi. Options were discussed including a percutaneous renal surgery, laparoscopy, and retrograde intrarenal surgery. Based on the distance from the renal capsule, body habitus, and small size of the diverticulum, the decision was made to perform a retrograde approach.

RESULT(S): Retrograde intrarenal surgery was performed with the aid of the flexible ureteroscope, holmium laser, and fluoroscopic guidance. Once the wall of the diverticulum was localized within the renal pelvis, the holmium laser was used to enter the diverticulum. Upon entry, multiple renal calculi were identified. Basket extraction was performed along with holmium laser lithotripsy. A double-j ureteral stent was placed once the larger stones had been extracted and a large enough channel had been created for easy passage of the residual fragments.

CONCLUSION(S): Retrograde intrarenal surgery for the treatment of calyceal diverticulum with concomitant renal calculi is a viable option. Patient selection is crucial when choosing the best approach for treatment.

Status

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(Oommen, Caire, Thomas, Patel) New OrleansLAUnited States

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717.

Does the release of bacteria from the stones disintegrated during ureterorenoscopic lithotripsy procedures affect the clinical course?.

Horuz R., Selimoglu A., Akca O., Cetinel C., Kafkasli A., Albayrak S., Sarica K.

Embase

European Urology, Supplements. Conference: 2nd Meeting of the EAU Section of Urolithiasis, EULIS 2013. Copenhagen Denmark. Conference Publication: (var.pagings). 12(3) (pp 92), 2013.

Date of Publication: 05 Sep 2013.

[Conference Abstract]

AN: 71206914

Introduction & Objectives: To evaluate the possibility of de novo urinary infection caused by the release of the microorganisms inoculated in the layers of the calculi disintegrated by ureteroscopic lithotripsy in cases where a sterile urine has been confirmed prior to the procedure. Material(s) and Method(s): A total of 50 cases with non-infectious ureteral and/or renal stone(s) treated with intracorporeal ureterorenoscopic lithotripsy with two different techniques ([URS: semi-rigid ureteroscopy; n = 30], [RIRS: retrograde intrarenal lithotripsy; n = 20]) were included into the study program. Presence of a sterile urine has been well demonstrated in all cases prior to the procedure. An antibiotic prophylaxis was performed by injecting 1 gr sefazolin during anesthesia induction in all cases. Under completely sterile conditions, after reaching to the stone from endoscopic way, a sufficient amount of urine sample was obtained for a culture and sensitivity test first from the stone adjacent area (Sample 1) before beginning lithotripsy procedure and secondly from the blurred urine with Stone dust during disintegration of the stone (Sample 2). Following the lithotripsy procedure, patients were closely followed with respect to clinical signs of infection where a body temperature value of >38degreeC was accepted as the presence of post-operative fever. All cases were discharged after 24 hours and they were re-visited after a week period for the presence and signs of urinary tract infection. During this revisit urine analysis along with culture and sensitivity test were repeated (Sample 3). Clinical and laboratory data obtained were analyzed.

Result(s): Mean age of the patients was 48.60+/-12.97 (22-82) years. Mean size of the renal and ureteral stones treated were 15.8+/-1.82 (10-25) and 9.56+/-1.79 (7-15) mm. respectively. While the operational time for both procedures (RIRS and URS) were 78.75+/-17.52 (45-120) and 44.83+/-17.24 (30-100) min. respectively; the active fragmentation time were again 22.25+/-4.08 (15-40) and 8.86+/-4.01 (5-22) min (Table 1). Evaluation of our findings did clearly show that no bacterial growth could be demonstrated in any of the urine samples obtained either prior to (Sample 1) or during fragmentation of the stone (Sample 2). Stone analysis data were present in 24 cases (48%) among which uric acid component was present in 2 cases, magnesium-ammonium-phosphate in 1, calcium phosphate in 3 and calcium oxalate component in the remaining 18 cases. No clinical infectious complication has been detected in any cases after the procedure and there was also no bacterial growth in any of the urine samples cultured 1-week after the procedure.

Conclusion(s): Despite the presence of literature data demonstrating the inoculated microorganisms in urinary stones; our study findings did clearly demonstrate that the urine may not be contaminated during intracorporeal lithotripsy procedure in a clinically significant manner under appropriate antibiotic prophylaxis applied prior to the intervention.

Status

CONFERENCE ABSTRACT

Institution

(Horuz, Selimoglu, Akca, Cetinel, Kafkasli, Albayrak, Sarica) Kartal Training and Research Hospital, Dept. of Urology, Istanbul, Turkey

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The lesson I have learned from my first 25 ECIRS cases: Notes of technique by a young urologist during his learning-curve.

Bosio A., Destefanis P., Alessandria E., Dalmaso E., Buffardi A., Lucci Chiarissi M., Berta G., Bisconti A., Ceruti C., Fontana D., Frea B.

Embase

European Urology, Supplements. Conference: 2nd Meeting of the EAU Section of Urolithiasis, EULIS 2013. Copenhagen Denmark. Conference Publication: (var.pagings). 12(3) (pp 68), 2013.

Date of Publication: 05 Sep 2013.

[Conference Abstract]

AN: 71206851

Introduction & Objectives: PCNL learning curve is quite long. The first approach to the technique can be particularly difficult with the increase of indications for RIRS, reserving PCNL for more complex stone cases. On the other hand ECIRS can give more confidence to the operator during his learning curve. We wanted to identify technical aspects that can positively influence the first approach and the learning curve of a young urologist to PCNL.

Material(s) and Method(s): We retrospectively analyzed the first 25 ECIRS performed by a single young urologist in a highvolume Stone Center where the indications for PCNL were limited to complex and multiple stone cases. We describe the technique that we adopted and progressively refined with the objective to treat complex stones since the learning curve. We considered the capability to gain a correct percutaneous access, to conclude the procedure with satisfying results and to avoid major complications.

Result(s): An ECIRS in Valdivia-Galdakao modified supine position was performed and a single percutaneous access at the inferior posterior calyx was gained in all cases. Percutaneous puncture was performed under direct endoscopic view, radioscopic guidance and US assistance targeting the centre of the papilla. Progressive or balloon dilation was performed. A 17 Fr nephroscope through a 24 Fr Amplatz sheath was used with fluid irrigation at human body temperature and ultrasound and/or pneumatic lithotripsy. Fragments were evacuated by simple irrigation fluid outflow and residuals removed with basket. A final inspection of all calyces was done with a flexible cystoscope through the Amplatz sheath and with the flexible ureteroscope. Further Olmium laser lithotripsy and fragments removal with basket were performed when needed. A double J ureteral stent and a nephrostomy catheter 12 Fr with distal pig-tail in the renal pelvis were eventually placed and an antegrade pielography performed. In all cases the intervention was concluded in a satisfactory manner without need for surgical conversion and further percutaneous procedures. The nephrostomy was clamped in I-II post-operative day and removed the day after. We had 3 major complications: 1 arteriovenous fistula and 2 septic shock.

They all occurred in the first 15 cases of the series and they were successfully treated by selective arterial embolization and by amine support and specific prolonged antibiotic therapy.
Conclusion(s): The standardized ECIRS technique that we reproduced and synthesized in this paper enabled us to treat complex stones also during the beginning of the learning curve, gain a correct access to the collecting system and conclude the procedure with satisfying results in all cases. The refinement of the technique allowed us to reduce peri-operative complications.

Status

CONFERENCE ABSTRACT

Institution

(Bosio, Destefanis, Alessandria, Dalmaso, Buffardi, Lucci Chiarissi, Berta, Bisconti, Ceruti, Fontana, Frea) A.O. Citta della Salute e della Scienza di Torino - Molinette, Dept. of Urology, Turin, Italy

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719.

Comparison of UMP v/s RIRS for lower calyx stone.

Desai J., Solanki R.

Embase

European Urology, Supplements. Conference: 2nd Meeting of the EAU Section of Urolithiasis, EULIS 2013. Copenhagen Denmark. Conference Publication: (var.pagings). 12(3) (pp 62), 2013.

Date of Publication: 05 Sep 2013.

[Conference Abstract]

AN: 71206834

Introduction & Objectives: We report a prospective study on outcomes of RIRS (Retrograde Intra-Renal Surgery) and UMP (Ultra-Mini PCNL) for lower calyx stone. A total of 44 cases were studied - 26 cases of UMP and 18 cases of RIRS. The objective was to compare the operation time, cost of disposables, stone free rate, complication rate, auxiliary procedure rate. This study was designed for lower calyx stones only. Stones larger than 2.0 cms and smaller than 1.4 cms were excluded from the study. We wanted to define the role of UMP vis-a-vis RIRS for lower calyx stones. We avoided SWL for these stones because of the lower stone free rate for lower calyx, in general.

Material(s) and Method(s): 26 patients in UMP group and 18 cases in RIRS group, were studied. The stone size was between 1.40 cms and 2.0 cms (average 1.65 cms). UMP was carried out with a 13 Fr UMP sheath and RIRS was with a 6.5 Fr flexible ureteroscope after placing an access sheath of 12/14 Fr. All the stones were in the lower calyx. A larger size access sheath (14/16 Fr) was attempted if the patient had a stent placed prior to RIRS. Access sheath could not be passed in 3 cases; here the flexible scope was passed without any sheath. The stone disintegration was done with a 200 micron laser fiber. Baskets and graspers (2.5 Fr size) were used for RIRS. For UMP, stone evacuation was done by creating an eddy water current with the help of the specially designed UMP sheath. CT-Scan was done at the end of one month to check the stone-free status. Stone analysis was done in all cases with emphasis on finding out whether the stone was monohydrate or dihydrate.

Result(s): See the table. The auxiliary rate for RIRS was 100% because a stent was placed in all cases and therefore the patient had to come to the OR again. In pre-stented patients the patient came to the OR thrice. In RIRS cases the stone free rate was lower in monohydrate stones. In UMP cases there was no difference in stone free rate in monohydrate or dihydrate stones.

Conclusion(s): In our small study we found UMP to be less expensive than RIRS. The operation time was almost half that of RIRS and the stone free rate of UMP was 80.70% vs 66.66% for RIRS. The stone free rate in RIRS were better with a 14/16 Fr access sheath. However, this large access sheath could be placed only in pre-stented patients. In three patients access sheath could not be placed and therefore RIRS was done with the Ureteroscope passed directly. Intrarenal pressures were probably higher with RIRS and therefore patients reported fever (38.8%); UMP is under very low intra-renal pressure and therefore chances of septicemia are low. During RIRS, Basket/Grasper extraction of stone fragment was possible only when the access sheath was 12/14 Fr or 14/16 Fr. The larger access sheath was not possible to pass without pre-RIRS stenting (for passive ureteric dilation). In RIRS cases the stone free rate was comparatively poor; this was perhaps because the monohydrate stones could not be disintegrated into sand like particles. Basketing all fragments was not possible when the access sheath used was small size. In UMP cases the stone fragments could be easily removed even if they were 2.0-2.5mms in size;

therefore there was no difference in monohydrate or dihydrate cases. UMP seems to be the armamentarium of choice for mid-size lower calyx stones. (Table Presented).

Status

CONFERENCE ABSTRACT

Institution

(Desai, Solanki) Samved Hospital, Dept. of Urology, Ahmedabad, India

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720.

Xenx, a new device to prevent stone and fragments migration during the endoscopic laser lithotripsy: Experience in a single center.

Macchione N., Longo F., Zanetti G., Trinchieri A., Montanari E.

Embase

European Urology, Supplements. Conference: 2nd Meeting of the EAU Section of Urolithiasis, EULIS 2013. Copenhagen Denmark. Conference Publication: (var.pagings). 12(3) (pp 47), 2013.

Date of Publication: 05 Sep 2013.

[Conference Abstract]

AN: 71206793

Introduction & Objectives: A new anti-repulsion device for the endoscopic treatment of ureteral stones in terms of safety and efficacy has been evaluated.

Material(s) and Method(s): Xenx (Xenolith) is an anti-repulsion device working "closed" as a normal hydrophilic guide wire (0.038 floppy tip / 0.04 shaft) and "open" as a nitinol ureteral mesh (max. diam. 12mm/ 4 F). The mesh lies between two radiopaque markers, one on the top of the

other in the closed device, and is springed pushing the internal wire handled at the distal part of the Xenx. We performed a semirigid ureterorenoscopy using a Wolf instrument (6.5-8.5 F) with double channel. The papilla was negotiated with Xenx, the radiopaque marker positioned over the stone under direct vision and the device opened under fluoroscopic control. The ureteroscope was retracted and reinserted beside Xenx. The stone was treated under continuous flow (bag at 150 cm) by holmium laser (400 micron Medilas fiber) until it was reduced to subtle sand. At the end of the procedure no basket was passed, Xenx was closed, an ureteral catheter coaxially placed and left 24-48 hours post-op. Over 3 months, 8 patients with ureteral stone positioned in the upper, in the middle and in the lower ureter in 5, 2, and 1 cases respectively and were 9mm median diameter (7-12mm) with a median CT-HU 887 (600-1100). Success in device positioning, operative time, post-op. analgesy (NSAID vs. Opioid), post-op. complications (Clavien-Dindo scale) ultrasound (US) stone free rate (SFR) and hydronephrosis grade were recorded. At 4 weeks post-op. stone free rate was assessed by NCCT 1mm slice.

Result(s): The median operative time was 22 min (17-33). In two cases we used a post-op. analgesy with Opiod (tramadol) associated to NSAID and only in one case we reported a presence of a small stone fragment in the kidney at ultrasound control performed at second post-op. day. No cases of hydronephrosis and post-op. complications were recorded.

Conclusion(s): Xenx in our experience is safe and effective in terms of stone free rate, complications and operating time. Moreover, the use of Xenx allows to avoid using neither a basket nor a guide wire. These previous results support the need of the involvement of more patients and of a multicenter experience.

Status

CONFERENCE ABSTRACT

Institution

(Macchione, Longo, Montanari) San Paolo Hospital, Dept. of Urology, Milan, Italy (Zanetti) Desio and Vimercate Hospital, Dept. of Urology, Vimercate, Italy
(Trinchieri) Lecco Hospital, Dept. of Urology, Lecco, Italy

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721.

Modified technique of RIRS.

Joshi N.

Embase

European Urology, Supplements. Conference: 2nd Meeting of the EAU Section of Urolithiasis, EULIS 2013. Copenhagen Denmark. Conference Publication: (var.pagings). 12(3) (pp 41), 2013.

Date of Publication: 05 Sep 2013.

[Conference Abstract]

AN: 71206774

Introduction & Objectives: Retrograde IntraRenal Surgery is an established procedure. It is mainly used for removal of upper urinary stones. The procedure has many established advantages and is preferred due to its non invasiveness. In standard technique, 1. Operating surgeon handles both - flexible scope and camera - on his own. This makes maneuvering of the scope, targeting the stone and manipulating the stone very cumbersome and tiring. Leading to - Lengthy procedure, fatigue to the surgeon, non retrieval of stone and equipment breakage. 2. The camera does not stay in neutral position, making endo vision orientation difficult. 3. The scope is curved near the handle, which makes high chance of damage to the inner channel. Novel Approach: I have established a procedure by which all these issues are resolved.

Material(s) and Method(s): The Cystoscopy Sheath is introduced in the bladder to nullify the urethral curvature in the male patient. Fluoroscopy is used at every step during the surgery. 6 Fr and 8 Fr Semi rigid ureterorenoscope are used to dilate the ureter under vision. This dilatation facilitates the introduction of the initial access sheath. Two guide wires are inserted in the ureter up to the kidney. The initial access sheath is inserted. The inner sheath and wire are removed together. The wire is never pushed from the tip of the scope. (1) The main modification of the technique is: the scope is held straight at every point. The 1st Assistant stabilizes the scope and maintains the camera alignment. The surgeon's left hand does to & fro movement of scope or device manipulation. And the right hand does rotation & deflection movements of the scope. The 2nd Assistant catches the stone by a special basket. By keeping the camera stabilized, the endo orientation is never lost. By this method the inner channel stays straight, decreasing the chance of inner channel damage. The surgeon can sit on a chair to have full control of his movements and can easily concentrate on the procedure without getting fatigue or losing the field of vision.

Help of two assistants takes away the strain. Double channel Flexible scope has the advantage of non leakage of irrigation while working with a device. Exclusive channel for irrigation facilitates good flow of saline and provides clear visual field. The smaller the Laser - the better for the life of the scope. Smaller fiber does not decrease the time to fragment the stone. Laser fiber must be inserted gently and in a straight scope. (2) The laser tip should be just visible before flexing the scope to target the stone. Then advance the fiber to touch the stone and fire the laser. A specially designed basket catches stones very smoothly from the cup of the calyx. The double channel scope allows stone being held with a basket and laser inserted through another channel to fragment the stone. Care is taken not to fire the basket. If the basket is damaged, remove the whole assembly, chop off the tip of the basket and then withdraw it. If stone is not focused for grasping or lasing, saline is flushed by a syringe, to displace the stone in a proper position. At the end, DJ Stenting is done through a Rigid uretero scope.

Result(s): 1. I did more than 130 cases of RIRS with one scope. 2. Time from starting the procedure to visualize the stone was on average 10 minutes. 3. The operating time reduced from average 3 hours to about 1.5 hour by this technique. 4. The scope's channel got damaged once and was successfully repaired. 5. 5 cases needed a smaller diameter scope for smaller ureter size. 6. Stone clearance rate was 85%.

Conclusion(s): Modified technique of RIRS makes the procedure easy, fast & cost effective.

Status

CONFERENCE ABSTRACT

Institution

(Joshi) NMC Specialty Hospital, Dept. of Urology, Al Ain, United Arab Emirates

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Durability of the flexible endoscopes.

Joshi N.

Embase

European Urology, Supplements. Conference: 2nd Meeting of the EAU Section of Urolithiasis, EULIS 2013. Copenhagen Denmark. Conference Publication: (var.pagings). 12(3) (pp 33-34), 2013. Date of Publication: 05 Sep 2013.

[Conference Abstract]

AN: 71206755

Introduction & Objectives: Flexible scopes are very useful equipment for urologists. They provide a noninvasive relatively safer modality for the management of upper urinary stones. They are very fragile & costly equipment. Their basic costs and repairs are sometimes more expensive than the income generation by them. The objective of the study was to devise protocols for increasing the durability of the flexible scope.

Material(s) and Method(s): Durability of the Flexible URS depends upon following factors. A. Repairable damages 1. Injury to inner channel by the inserted device. Chance of damage is high if b. Device is inserted without making the scope in neutral position. c. Device which is larger than the scope's channel d. Broken Dormia basket's wire. This damage is detected on checking leak pressure by pressure pump. Pressure is raised between 100 to 200mm of Hg. There should be no leak for 30 seconds. Release the pressure & wait for 20 seconds, then only detach the pressure valve. The surgical technique of RIRS (retrograde intrarenal surgery) is modified: The scope is held straight at every point. 1st Assistant stabilizes the scope & maintains the camera alignment. Surgeon's left hand does to & fro movement of scope or device manipulation. And right hand does rotation & deflection movements of the scope. 2nd Assistant - Catches the stone by a special basket. By keeping the camera stabilized, the endo orientation is never lost. By this method the inner channel stays straight, decreasing the chance of inner channel damage. Smaller the laser - better for life of the scope. Laser fiber must be inserted gently and in a straight scope. Laser tip should be just visible before flexing the scope to target the stone. Take care not to fire the basket. If basket is damaged, remove the whole assembly, chop off the tip of the basket and then withdraw it. 2. Loss of deflection mechanism. This results from excessive movements. B. Non repairable damage. c. Firing the laser very close to the scope's tip, which will burn the tip - loss of vision and light transmission. d. Loss of optical fibers and light fibers. C. While cleaning/handling out of the patient's body, scope can be damaged by - 1. The scope should not be bent more than 10cm radius 2. The scope should not be hit by a tough or sharp object. 3. Pressure should not be applied over the shaft tube while cleaning. 4. The cleaning Brush MUST come out of the channel while cleaning. 5. Only demineralized water is allowed for

post procedure cleaning. Never use normal saline for immersing or washing. 6. The scope should not be mixed with other equipment while rinsing / re processing / during an operation. 7. Only Plasma sterilization is allowed. 8. All accessories checked and replaced if found damaged. 9. Scope surface must not be sprayed. 10. Grease free gel is only used. Silicon oil and Paraffin containing agents are never used. 11. Keep pressure valve open while plasma sterilization. 12. Proper (GENTLE) handling all the time - Pre wash, cleaning, disinfecting, serializing, transportation, storage and back to Operating room.

Result(s): 1. We did more than 130 cases of RIRS with one scope. 2. Time from starting the procedure to visualize the stone was on average 10 minutes. 3. The operating time reduced from average 3 hours to about 1 hour by this technique. 4. Scope's channel got damaged once and was successfully repaired.

Conclusion(s): Modified technique of RIRS makes the procedure easy, fast and cost effective. When properly followed, above mentioned protocols increased the durability of the scope significantly.

Status

CONFERENCE ABSTRACT

Institution

(Joshi) NMC Specialty Hospital, Dept. of Urology, Al Ain, United Arab Emirates

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723.

Controversies in ureteroscopy: Wire, basket, and sheath.

Rizkala E.R., Monga M.

Embase

Indian Journal of Urology. 29(3) (pp 244-248), 2013. Date of Publication: July-September 2013.

[Conference Paper]

AN: 369890788

In the last one to two decades, flexible ureteroscopy has rapidly expanded its role in the treatment of urologic stone disease. With the frequent and expanded use of flexible ureteroscopy, other ancillary instruments were developed in order to ease and facilitate this technique, such as ureteral access sheaths (UAS) and a variety of wires and baskets. These developments, along with improved surgeon ureteroscopic competence, have often brought into question the need to implement the "traditional technique" of flexible ureteroscopy. In this review, we discuss a brief history of flexible ureteroscopy, its expanded indications, and the controversy surrounding the use of UAS, wires, and baskets.

Status

Embase

Institution

(Rizkala, Monga) Department of Urology, Glickman Urological and Kidney Institute, Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, OH 44195, United States

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724.

Accidental destruction of stone trapping baskets: New knowledge on the interaction of baskets, stone trapping devices, guide wires and lithotriptors - A brief review. Akzidentielle Zerstörung von

Steinfangkorben: Neue Erkenntnisse zur Interaktion von Korben, "stone trapping devices", Guidewire und Lithotriptoren - eine Kurzübersicht <Akzidentielle Zerstörung von Steinfangkorben: Neue Erkenntnisse zur Interaktion von Korben, "stone trapping devices", Guidewire und Lithotriptoren - eine Kurzübersicht.>

Cordes J., Sommerauer M., Laturnus J.M., Jocham D.

Embase

Aktuelle Urologie. 44(4) (pp 277-279), 2013. Date of Publication: 2013.

[Review]

AN: 1052660014

There is a rise in the incidence of stone disease in the industrial nations. Due to this, the number of endourological procedures will also rise. Sometimes endourological instruments will be fragmented accidentally together with the destruction of the stone. A search for articles on this subject was performed. The aim of this article is to provide a review about the literature on this subject and how this subject can be managed today and in the future. © Georg Thieme Verlag KG Stuttgart . New York.

PMC Identifier

23818242 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=23818242>]

Institution

(Cordes, Sommerauer, Laturnus, Jocham) Klinik für Urologie, UKSH Campus Lubeck, Universitätsklinikum Schleswig-Holstein, Ratzeburger Allee 160, 23538 Lubeck, Germany

Year of Publication

2013

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725.

Withdraw of the ureterscope causes fragmented ureter stones to disperse.

Canguven O., Boz M., Bulbul M., Selimoglu A., Albayrak S.

Embase

International Braz J Urol. 39(5) (pp 756-757), 2013. Date of Publication: September/October 2013.

[Article]

AN: 1372047680

Introduction: Ureteroscopy has improved from the first use of ureteroscope in the 1970's. Although the success rate increased in the last years, (1) new treatment techniques are being developed for impacted and large proximal ureter stones (2). Pneumatic lithotripsy has high efficiency with low complication rates (2). However, in case of steinstrasse and large (> 1 cm) ureter stones, fragmented small stones may obstruct insertion of a ureteroscope after initial lithotripsy. In order to triumph over this issue, multiple ureteroscopic passages and manipulations needed for extraction of these small stones by forceps or basket catheters. The overall incidence of stricture was found upto 14.2% when the fragments were removed with a grasping forceps or a basket (3). We present our technique to disperse small fragmented stones in order to contact non-fragmented rest stone.

Material(s) and Method(s): Ureteral lithotripsy was performed with an 8-9.8F semirigid ureteroscope using a pneumatic lithotripter (Swiss LithoClast, EMS, Nyon, Switzerland). The stone was fragmented into small pieces as small as 2-3 mm. by pneumatic lithotripter. Eventually, these fragmented stones interfered with vision and the lithotripter to get in touch with the rest stone. After fragmenting distal part of the large stone, the ureteroscope was pulled back out of ureter. While pulling back, the operating channel was closed and irrigation fluid was flowing in order not to decrease pressure behind the stones. Simultaneously, a person tilted the operating table to about 30degree in reverse Trendelenburg position. When the ureteroscope was out of ureteral orifice, the operating channel was opened and irrigation fluid was stopped. This maneuver aided decreasing pressure in the bladder more rapidly in addition to feeding tube. Stone dust and antegrade fluid flow were easily seen out of the ureteral orifice. Ureteroscope was re-inserted after 30-60 seconds. While reaching the rest of the stone, small stone dust was seen at first. Bigger stones were approximately 3-5 cm distal to the original place of the stone. When the non-fragmented rest stone appeared, there were no blocking fragmented stones. Insertion of the ureteroscope was easy and we could go on with the lithotripsy procedure.

Conclusion(s): In comparison to standard position, tilting and rapid decrease in pressure by pulling back the ureteroscope made gravity and negative pressure more effective.

PMC Identifier

24267120 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=24267120>]

Institution

(Canguven, Boz, Bulbul, Selimoglu, Albayrak) Urology II Clinics, Kartal Teaching and Research Hospital, Sakacl sokak 34 5 Yildiz apt. Kozyatagi, Kadikoy, Istanbul 34738, Turkey

Year of Publication
2013

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[SFX](#)

726.

Hollow steel tips for reducing distal fiber burn-back during thulium fiber laser lithotripsy.
Hutchens T.C., Blackmon R.L., Irby P.B., Fried N.M.

Embase

Journal of biomedical optics. 18(7) (pp 078001), 2013. Date of Publication: 2013.

[Article]

AN: 563035947

The use of thulium fiber laser (TFL) as a potential alternative laser lithotripter to the clinical holmium:YAG laser is being studied. The TFL's Gaussian spatial beam profile provides efficient coupling of higher laser power into smaller core fibers without proximal fiber tip degradation. Smaller fiber diameters are more desirable, because they free up space in the single working channel of the ureteroscope for increased saline irrigation rates and allow maximum ureteroscope deflection. However, distal fiber tip degradation and "burn-back" increase as fiber diameter decreases due to both excessive temperatures and mechanical stress experienced during stone ablation. To eliminate fiber tip burn-back, the distal tip of a 150- μ m core silica fiber was glued inside 1-cm-long steel tubing with fiber tip recessed 100, 250, 500, 1000, or 2000 μ m inside the steel tubing to create the hollow-tip fiber. TFL pulse energy of 34 mJ with 500- μ s pulse duration and 150-Hz pulse rate was delivered through the hollow-tip fibers in contact with human calcium oxalate monohydrate urinary stones during ex vivo studies. Significant fiber tip burn-back and degradation was observed for bare 150- μ m core-diameter fibers. However, hollow steel tip fibers experienced minimal fiber burn-back without compromising stone ablation rates. A simple, robust, compact, and inexpensive hollow fiber tip design was characterized for minimizing distal fiber burn-back during the TFL lithotripsy. Although an increase in stone retropulsion was

observed, potential integration of the hollow fiber tip into a stone basket may provide rapid stone vaporization, while minimizing retropulsion.

PMC Identifier

23817762 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=23817762>]

Institution

(Hutchens) Optical Science and Engineering Program, University of North Carolina at Charlotte, Charlotte, North Carolina 28223, USA.

Year of Publication

2013

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727.

Retrograde intrarenal surgery in Nepal: an early experience.

Gyawali P.R., Luitel B.R.

Embase

Nepal Medical College journal : NMCJ. 15(2) (pp 137-139), 2013. Date of Publication: Jun 2013.
[Article]

AN: 372961342

With the advancement in technology and miniaturization of instruments, retrograde intrarenal surgery (RIRS) with flexible ureteroscope is gaining popularity. Flexible ureteroscope is introduced into renal collecting system through the urethra. Holmium YAG (Ho-YAG) Laser fiber of different sizes is introduced through the ureteroscope and renal stones are pulverized.

Removal of renal stones less than 15 mm in size with RIRS has sharply reduced post operative morbidity. This is a Prospective study comprised of 58 RIRS performed from January 2013 to July 2013. Preoperative investigations like full blood count (FBC), renal function test (RFT), serological investigations, urine culture, intravenous urogram or CT-uogram, chest ray and electrocardiogram were done in all patients. Renal stones less than 15 mm in size were included

for RIRS. Intra renal stones were treated with 7.5 Fr flexible ureteroscope (Flex - X2) using Holmium-YAG laser. Mean stone burden in our study was 10.5 +/- 3.3 mm. Out of 32 male patients, 29 (90.6%) required pre-stenting before RIRS and all 58 patients with successful dusting of stones in single sitting were discharged on next day. Retrograde Intrarenal Surgery is advanced and successful technique and a viable alternative to Extracorporeal Shock Wave Lithotripsy (ESWL) and Percutaneous Nephrolithotomy (PCNL) in the treatment of selected intrarenal stones with minimum morbidity.

PMC Identifier

24696935 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=24696935>]

Year of Publication

2013

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728.

Safety and efficacy of ureteroscopic lithotripsy for stone disease in obese patients: a systematic review of the literature.

Aboumarzouk O.M., Somani B., Monga M.

Embase

BJU international. 110(8 Pt B) (pp E374-E380), 2012. Date of Publication: Oct 2012.

[Review]

AN: 366353743

To look at the role and safety of ureteroscopy for stone management in obese patients. We searched MEDLINE, PubMed and the Cochrane Library from January 1990 to June 2011 for results of ureteroscopy and stone treatment in obese patients. Inclusion criteria were all English language articles reporting on ureteroscopy in patients with morbid obesity. Data on the outcomes and complications was extracted and a meta-analysis of the results conducted. Seven studies with 131 patients (136 renal units) were included. All the studies included obese patients

(mean BMI 42.2) treated with flexible URS for urinary calculi. The mode of fragmentation was pulse dye laser, holmium laser, and combined modality including electrohydraulic lithotripsy and basket retrieval in others. The average stone size was (1.37). The stone free rate was 87.5% after completion of treatment with a ranged follow up between 3 months and 3.5 years. The mean operative time was 97.1 minutes (30-275). There was an overall 11.4% complication rate, however, none of the patients needed further monitoring and were treated conservatively. A sub-group analysis of the stones depending on size found the URS has a higher stone free rate in stones <2 cm in size ($P = 0.0003$). Furthermore, URS has a higher stone free rate when treating ureteric stones compared to renal stones ($P = 0.04$). Retrograde stone treatment using ureteroscopy is a safe and efficient modality for treating obese patients with urinary tract calculi with an increased efficiency with smaller stones less than 2 cm in size. © 2012 THE AUTHORS. BJU INTERNATIONAL © 2012 BJU INTERNATIONAL.

PMC Identifier

22471506 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=22471506>]

Institution

(Aboumarzouk) The Royal Bournemouth and Christchurch Hospitals NHS Trust, Urology
Department, Bournemouth, United Kingdom

Year of Publication

2012

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729.

Outcomes of ureteroscopy for stone disease in pregnancy: Results from a systematic review of the literature.

Laing K.A., Lam T.B.L., McClinton S., Cohen N.P., Traxer O., Somani B.K.

Embase

Urologia Internationalis. 89(4) (pp 380-386), 2012. Date of Publication: December 2012.

[Review]

AN: 52300050

Introduction: Our aim was to evaluate the clinical efficacy and safety of ureteroscopy as a primary treatment for pregnant women with symptomatic ureteric stones who have failed conservative management.

Material(s) and Method(s): A systematic review of the literature from January 1990 to June 2011 was performed, including all English language articles. Outcome measures were clinical efficacy, in terms of stone clearance and need for additional procedures, and safety in terms of complications.

Result(s): A total of 239 abstracts were screened and 15 studies were identified reporting on 116 procedures. The surgical methods of stone management employed were stone extraction with basket only (n = 55, 47%), laser fragmentation (n = 27, 23%; holmium, n = 20, pulse dye, n = 7), impact lithotripsy (n = 21, 18%), ureteroscopic lithotripsy (n = 6, 5%) and a combination of methods (n = 6, 5%). A post-operative stent was inserted in 64 of 116 procedures (55%).

Complete stone clearance was seen in 100 of the 116 procedures (86%). There were 2 major complications (1 ureteral perforation and 1 case of premature uterine contraction) and 7 minor complications (5 urinary tract infections and 2 cases of post-operative pain).

Conclusion(s): This review suggests that stone clearance using ureteroscopy is a relatively safe option in pregnancy with a high success rate. Copyright © 2012 S. Karger AG, Basel.

PMC Identifier

23147596 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=23147596>]

Status

Embase

Institution

(Laing, Lam, McClinton, Cohen) Department of Urology, Aberdeen Royal Infirmary, Aberdeen, United Kingdom (Somani) Department of Urology, University Hospitals Southampton NHS Trust, Southampton SO16 6YD, United Kingdom

(Traxer) Department of Urology, Tenon University Hospital, Paris, France

Publisher

S. Karger AG (Allschwilerstrasse 10, P.O. Box, Basel CH-4009, Switzerland)

Year of Publication

2012

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730.

In vitro comparison of prototype magnetic tool with conventional nitinol basket for ureteroscopic retrieval of stone fragments rendered paramagnetic with iron oxide microparticles.

Tan Y.K., McLeroy S.L., Faddegon S., Olweny E., Fernandez R., Beardsley H., Gnade B., Park S., Pearle M.S., Cadeddu J.A.

Embase

Journal of Urology. 188(2) (pp 648-652), 2012. Date of Publication: August 2012.

[Article]

AN: 52062050

Purpose: We developed a prototype magnetic tool for ureteroscopic extraction of magnetized stone particles. We compared its efficiency for retrieving magnetized calcium oxalate monohydrate stone particles with that of a conventional nitinol basket from the pelvi-collecting system of a bench top ureteroscopic simulator.

Material(s) and Method(s): Iron oxide microparticles were successfully bound to 1 to 1.5, 1.5 to 2 and 2 to 2.5 mm human calcium oxalate monohydrate stones. Several coated fragments of each size were implanted in the collecting system of a bench top ureteroscopic simulator. Five-minute timed stone extraction trials were performed for each fragment size using a back loaded 8Fr magnetic tool mounted on a 0.038-inch guidewire or a conventional basket. The median number of fragments retrieved per timed trial was compared for the magnetic tool vs the basket using the Mann-Whitney U test.

Result(s): For 1 to 1.5 mm fragments the median number retrieved within 5 minutes was significantly higher for the prototype magnetic tool than for the nitinol basket (9.5 vs 3.5, $p = 0.03$). For 1.5 to 2 mm fragments the magnetic tool was more efficient but the difference in the number of fragments retrieved was not statistically significant (9.5 vs 4.5, $p = 0.19$). For 2 to 2.5 mm fragments there was no difference between the instruments in the number retrieved (6 per group, $p = 1.0$).

Conclusion(s): The prototype magnetic tool improved the efficiency of retrieving stone particles rendered paramagnetic that were less than 2 mm but showed no advantage for larger fragments. This system has the potential to decrease the number of small retained fragments after ureteroscopic lithotripsy. © 2012 American Urological Association Education and Research, Inc.

PMC Identifier

22704446 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=22704446>]

Status

Embase

Institution

(Tan, Faddegon, Olweny, Park, Pearle, Cadeddu) University of Texas Southwestern Medical Center at Dallas, Dallas, TX, United States (McLeroy, Gnade) University of Texas at Dallas, Dallas, TX, United States

(Fernandez, Beardsley) University of Texas at Arlington, Arlington, TX, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

2012

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[SFX](#)

731.

Preventing stone retropulsion during intracorporeal lithotripsy.

Elashry O.M., Tawfik A.M.

Embase

Nature Reviews Urology. 9(12) (pp 691-698), 2012. Date of Publication: 02 Oct 2012.

[Review]

AN: 52312106

Several studies of ureteroscopic treatment for ureteral stones have reported that most stone clearance failures can be attributed to stone fragment retropulsion. Stone retropulsion can result in increased operative time and cost-resulting from the need to change from the semi-rigid ureteroscope to a flexible instrument to chase migrated calculi-and additional procedures to treat residual migrated fragments are often required. The degree of migration depends mainly on the

energy source used for lithotripsy; pneumatic and electrohydraulic lithotripters are associated with a greater degree of retropulsion than lasers. Different stone-trapping strategies and devices have been developed to minimize stone migration. Novel devices include the Lithovac suction device, the Passport TM balloon, the Stone Cone TM, the PercSys Accordion , the NTrap , and stone baskets such as the LithoCatch TM, the Parachute TM, and the Escape . Some authors have also reported on the use of lubricating jelly and BackStop gel (a reverse thermosensitive polymeric plug); these devices are instilled proximal to the stone prior to the application of kinetic energy in order to prevent retrograde stone migration. © 2012 Macmillan Publishers Limited. All rights reserved.

PMC Identifier

23165399 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=23165399>]

Status

Embase

Institution

(Elashry, Tawfik) Teeba Tower, 19 Elmoderia Street, 31111 Tanta, Egypt

Publisher

Nature Publishing Group (Houndmills, Basingstoke, Hampshire RG21 6XS, United Kingdom)

Year of Publication

2012

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732.

Nephroscopy with carbon dioxide in combination with laparoscopy in the treatment of urinary stones. Nefroscopia con uso de dióxido de carbono en combinación con laparoscopia para el manejo de la litiasis urinaria <Nefroscopia con uso de dióxido de carbono en combinación con laparoscopia para el manejo de la litiasis urinaria.>

Garcia-Segui A., Gascon-Mir M.

Embase

Actas Urologicas Espanolas. 36(3) (pp 186-190), 2012. Date of Publication: March 2012.

[Article]

AN: 51638117

Objective: Laparoscopy in combination with nephroscopy is rarely used for the treatment of complex urinary stones or anatomical abnormalities with difficult access stones. During the nephroscopy, in an opened renal pelvis, large amounts of fluid leaks and collects in the peritoneal cavity and can be a drawback. In these cases, the nephroscopy with use of carbon dioxide (CO2) can be an alternative. We present our experience in with this technique.

Material(s) and Method(s): We performed surgeries using the 3-port transperitoneal technique. Five patients with urolithiasis were included. Three patients had concomitant ureteropelvic junction stenosis, one with stones in ectopic kidney, and the third had a large stone impacted in the proximal ureter. Patients were treated by pyelolithotomy or ureterolithotomy combined with flexible nephroscopy using CO2 and dismembered pyeloplasty was performed in appropriate cases. A flexible cystoscope was passed through a port and guided laparoscopically through the opening in the renal pelvis. The gas cannula was connected to the irrigation channel of the endoscope to insufflate CO2 and calculi were extracted with a nitinol basket.

Result(s): Median age was 45 years (24-58). Mean operative time of nephroscopy was 22.4 minutes (range 15-48). Mean intra-operative blood loss was inestimable. There were no complications or conversion. Residual lithiasis requiring ureteroscopy was present in one patient.

Conclusion(s): Flexible nephroscopy using CO2 in combination with laparoscopy is a feasible and effective technique for the treatment of urinary stones in selected cases to avoid accumulation of fluid in the peritoneal cavity. © 2011 AEU. Published by Elsevier Espana, S.L. All rights reserved.

PMC Identifier

21963051 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=21963051>]

Institution

(Garcia-Segui, Gascon-Mir) Servicio de Urologia, Hospital General Mateu Orfila, Mahon, Menorca, Islas Baleares, Spain

Publisher

Elsevier Ltd (Langford Lane, Kidlington, Oxford OX5 1GB, United Kingdom)

Year of Publication

2012

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733.

Acute postoperative pain after ureteroscopic removal of stone: Incidence and risk factors.

Ahn S.T., Kim J.H., Park J.Y., Moon D.G., Bae J.H.

Embase

Korean Journal of Urology. 53(1) (pp 34-39), 2012. Date of Publication: January 2012.

[Article]

AN: 364217442

Purpose: Ureteroscopic removal of stones (URS) has been widely used to treat ureteral stones because it is comparatively safe, has a high success rate, and enables patients to rapidly return to their daily routines. However, some patients experience pain after URS, but the incidence of acute post-URS pain remains largely unknown. This study aimed to investigate the incidence of acute postoperative pain after URS and the associated risk factors.

Material(s) and Method(s): Data for 143 consecutive patients who underwent URS from June 2008 to December 2010 were collected. After excluding 8 patients who developed intraoperative complications, the patients were divided into two groups according to postoperative pain on the first postoperative day. Acute postoperative pain was defined as a pain score greater than 4 on a visual analogue pain scale (normal range, 0 to 10). Various factors were analyzed to identify the risk factors that could predict acute postoperative pain after URS.

Result(s): The stone-free rate without URS intraoperative complications was 95.5%. A total of 21 (14.6%) patients experienced postoperative pain on the first postoperative day. Young age, psychiatric illness, history of urinary tract infection, use of a stone basket, large stone size, and prolonged operation time were identified as risk factors for acute postoperative pain.

Conclusion(s): The incidence of acute postoperative pain is not that low and should not be overlooked, because it is associated with postoperative complications that could result in an unscheduled hospital admission or visit. Active pain control should be contemplated after URS in young patients and in those with a history of urinary tract infection, psychiatric illness, large stone size, and prolonged operation time. © The Korean Urological Association, 2012.

Status

Embase

Institution

(Ahn, Kim, Park, Moon, Bae) Department of Urology, Korea University College of Medicine,
Seoul, South Korea

Publisher

Korean Urological Association (Room 419, 4F, Jungmyung Honeyville Plaza # 965, Kangnam-
gu, Seoul 135-270, South Korea)

Year of Publication

2012

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734.

Systematic evaluation of a novel foot-pump ureteroscopic irrigation system.

Hendlin K., Sarkissian C., Duffey B., Monga M.

Embase

Journal of Endourology. 26(2) (pp 126-129), 2012. Date of Publication: 01 Feb 2012.

[Article]

AN: 364212281

Introduction: To evaluate forces exerted on a stone with different ureteroscopic irrigation systems.

Method(s): A 3?mm steel simulated stone was welded to a 3F stone basket and inserted into the working channel of a 4.5F Wolf semirigid ureteroscope. The basket shaft was attached to a 50?g load cell. The urterescope was placed in a ureteral model (14F silicon tubing). Simulated blood (McCormickTM Red Dye, 1 dye drop/15?mL H2O) was dripped adjacent to the stone at 12 drops/min. Endoirrigation devices were attached to the ureterscope and irrigation was applied at a rate sufficient to maintain visualization of the stone. Force on the stone was measured with the following endoirrigation systems: Boston ScientificTM Single-Action-Pump System (SAP) hand-pump and NuVista MedicalTM Flo-Assist foot-pump.

Result(s): No significant difference ($p=0.19$) in the number of pumps required to maintain a clear endoscopic field was found between the SAP (0.20 ± 0.075 / second) and Flo-Assist device

(0.25+/-0.056/second). The pump duration of the Flo-Assist was found to be less (1.12+/-0.40 seconds) than the SAP (1.35+/-0.31 seconds), but not significantly different (p=0.24). The average maximum impulse was significantly lower (p=0.0002) for the SAP (8.34x10⁻⁵ Ns) than the Flo-Assist (1.96x10⁻³ Ns). Total maximum impulse (2.02x10⁻⁵ Ns) for the SAP and total average impulse (5.51x10⁻⁶ Ns) were found to be lower than the Flo-Assist device. The Flo-Assist had a total maximum impulse of 4.49x10⁻⁴ Ns and total average impulse of 8.85x10⁻⁶ Ns, however, these differences were not statistically significant.

Conclusion(s): The hand-pump (SAP) and foot-pump (Flo-Assist) irrigation devices tested require comparable amounts of pumps for similar durations of time to maintain endoscopic visualization. Overall, the SAP device exerts less average maximum force on the stone than the Flo-Assist device. © Copyright 2012, Mary Ann Liebert, Inc. 2012.

PMC Identifier

22149147 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=22149147>]

Status

Embase

Institution

(Hendlin, Duffey) Department of Urologic Surgery, University of Minnesota, Minneapolis, MN, United States (Sarkissian, Monga) Glickman Urological and Kidney Institute, Cleveland Clinic, 9500 Euclid Ave, Q10-1, Cleveland, OH 44195, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2012

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735.

Surgery illustrated - Focus on details flexible ureterorenoscopy (URS) for lower pole calculi.

Ghani K.R., Bultitude M., Hegarty N., Thomas K., Glass J.

Embase

BJU International. 110(2) (pp 294-298), 2012. Date of Publication: July 2012.

[Article]

AN: 365161392

Occasionally, despite the measures described above, lower pole access may be unsuccessful [3]. Dual active deflection or 270degree active deflection ureterorenoscopes can be helpful in such cases [4]. Sometimes the neck of the calyx is too tight or the stone may not be lying in the collecting system. Flexible URS can differentiate between a small calyceal stone and renal parenchymal calcification. When primary in situ laser fragmentation is used, it may be difficult to get'on top of the stone' even after maximum rotation of the ureterorenoscope. In such circumstances, one has to be careful the laser is not activated whilst the fibre is alongside the stone, as this can traumatise the infundibular wall and even lead to infundibular stenosis. In such cases, the basket should be used early on to displace the stone. Advantages of the nitinol basket displacement technique include using a larger laser fibre for greater energy delivery and fragmentation, as well as leaving small fragments in less dependent calyces for better post-procedural drainage [5]. In one study, the stone-free rate improved from 71% for stones treated in situ to 94% for displaced stones [6]. Recent studies have shown that the success rate for lower pole stones of <2 cm treated with flexible URS are better than that achieved with ESWL [1]. Success rates for flexible URS of lower pole stones using the holmium laser have been as high as 91% in one recent study [7]. In our institution, an audit of 137 consecutive lower pole stones treated with flexible URS showed an overall success rate of 82%, with 90% for stones of <1 cm [8]. However, success rates for stones of >2 cm were considerably lower (50%). PCNL remains the first-line treatment for stones of >2 cm, although flexible URS is still a reasonable option in high-risk patients, such as those on anticoagulation therapy and the morbidly obese [9]. © 2012 The Authors BJU International © 2012 BJU International.

PMC Identifier

22734477 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=22734477>]

Status

Embase

Institution

(Ghani, Bultitude, Hegarty, Thomas, Glass) Department of Urology, Stone Unit, Guy's Hospital, Great Maze Pond, London, United Kingdom

Publisher

Blackwell Publishing Ltd (9600 Garsington Road, Oxford OX4 2XG, United Kingdom)

Year of Publication

2012

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736.

Critical analysis of the miniaturized stone basket: Effect on deflection and flow rate.

Magheli A., Semins M.J., Allaf M.E., Matlaga B.R.

Embase

Journal of Endourology. 26(3) (pp 275-277), 2012. Date of Publication: 01 Mar 2012.

[Article]

AN: 364380859

Background and Purpose: As surgical technology continues to advance, stone baskets are becoming increasingly miniaturized. We performed a study to define the effect of miniaturized stone baskets on ureteroscopy irrigation flow and deflection.

Material(s) and Method(s): We compared the three smallest available stone baskets: Boston Scientific 1.3F OptiFlex, Cook 1.5F N-Circle, and Sacred Heart 1.5F Halo, measuring their effect on irrigant flow and deflection of three flexible ureteroscopes.

Result(s): All devices adversely affected irrigation flow and active deflection of all of the ureteroscopes ($P < 0.05$). The 1.3F device, however, exhibited significantly less of an effect on both parameters. Irrigation flow was 28% greater with the 1.3F device than it was for the 1.5F devices. The device's effect on active deflection was 43% less with the 1.3F device than it was for the 1.5F devices.

Conclusion(s): Any device placed through the working channel of a ureteroscope will have a deleterious effect on the ureteroscope's irrigant flow and active deflection. As the caliber of the device decreases, however, its effect on these parameters appears to be reduced. Our present data suggest that the 1.3F basket has significantly less of an effect on both the irrigant flow and deflection of a flexible ureteroscope than do the 1.5F devices. © 2012, Mary Ann Liebert, Inc.

PMC Identifier

22022885 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=22022885>]

Status

Embase

Institution

(Magheli) Department of Urology, Charite University Medicine Berlin, Berlin, Germany (Semins, Allaf, Matlaga) James Buchanan Brady Urological Institute, Johns Hopkins Medical Institutions, Baltimore, MD, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2012

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737.

Robot assisted transperitoneal ureterolithotomy with removal of renal stone.

Gritti A., Antonelli A., Furlan M., Peroni A., Gatti L., Simeone C.

Embase

BJU International. Conference: EAU Robotic Urology Section Congress, ERUS 2012. London United Kingdom. Conference Publication: (var.pagings). 110(SUPPL. 3) (pp 110), 2012. Date of Publication: October 2012.

[Conference Abstract]

AN: 71384903

Introduction: Although most ureteral and renal stones are managed using endourologic techniques or shockwave lithotripsy in daily clinical practice, stone surgery has not completely disappeared. The increasing experience with laparoscopy in urology poses the question of whether urolithiasis may be an indication for laparoscopy or robot assisted surgery Methods: We present a case of a 74 years old man with evidence at CT scan and IVU of a large right ureteral stone (30 x 18 mm) and a smaller right renal stone at the lower pole (10 mm). The size of the

ureteral stone required a surgical treatment. We opted for a laparoscopic robot-assisted treatment with transperitoneal approach. The patient was set in a full flank position. The procedure was carried out with a 0 degree camera lens and 4 additional trocars. Through a longitudinal ureterotomy the ureteral stone was removed intact. A flexible ureterorenoscope was introduced through a trocar and through the ureterotomy to obtain the extraction of the renal stone by Dormia basket.

Result(s): The operating time at the robotic console was 100 minutes. Blood loss was not significant. A ureteral JJ stent was then positioned and kept for 20 days. Surgery and postoperative course were uneventful and the hospital stay was 3 days. The patient was stone free at the end of the procedure.

Conclusion(s): Indications for stone surgery are anatomic abnormalities, such as horseshoe kidneys, malrotated kidneys, or ectopic kidneys; symptomatic stones in diverticula of the renal pelvis, or concomitant open or laparoscopic surgery. After failure of endourologic stone removal or shockwave lithotripsy, stone surgery may be a second option. Surgery is indicated also in extremely large stones. In experienced hands, most procedures can be performed laparoscopically or laparoscopically robot assisted, either using a retroperitoneal or a transperitoneal approach. Laparoscopic removal of renal and ureteral calculi plays a role in special cases of urolithiasis. In experienced hands, it can be performed safely and efficiently and may therefore replace open stone surgery.

Status

CONFERENCE ABSTRACT

Institution

(Gritti, Antonelli, Furlan) Urology, Spedali Civili di Brescia, Brescia, Italy (Peroni, Gatti, Simeone) Urology, Spedali Civili di Brescia, Brescia, Lombardia, Italy

Publisher

Blackwell Publishing Ltd

Year of Publication

2012

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738.

Impacted ureteral and kidney stone: Laparoscopic robot-assisted ureterolithotomy combined with flexible renoscopy with removal of an upper calyceal calculus - case report.

Alexandrov A., Lund P., Kassabov B., Goell A., Buse S.

Embase

BJU International. Conference: EAU Robotic Urology Section Congress, ERUS 2012. London United Kingdom. Conference Publication: (var.pagings). 110(SUPPL. 3) (pp 49), 2012. Date of Publication: October 2012.

[Conference Abstract]

AN: 71384831

Introduction: Currently the treatment of ureteral and renal calculi is the domain of retrograde ureteroscopy, percutaneous nephrolithotomy or shock wave lithotripsy. Open lithotomy is rare and is reserved for patients who have failed endourological procedures or who have a large stone burden. The scope of laparoscopic robotassisted surgery is expanding to the management of large upper-tract urinary stones.

Objective(s): To report a case of laparoscopic robot-assisted ureterolithotomy combined with a flexible renoscopy and removal of an upper calyceal calculus. Case Description: The 75-year old patient presented with an asymptomatic dilatation of the right pyelocalyceal system. Imaging studies revealed an upper ureteral calculus (9mm) and an upper calyceal calculus (4 mm). The patient had a history of irradiation of the pelvis due to prostate cancer in 2006 und of laparoscopic cholecystectomy. Initially, we managed the obstruction by the insertion of an ureteral double-J stent. Ureterorenoscopy revealed a scarred right sided ureteral ostium with concomitant distal ureteral stenosis, which limited the diameter of the inserted Stent to 4,8 Charriere. After 2 weeks, we attempted ureteroscopic stone removal without success due to the distal ureteral stenosis. We then opted for a robot-assisted laparoscopic approach (4-arm da Vinci Si-HD) over 5 ports. We performed ureterotomy at the level of the proximal ureter and we removed the upper ureteral stone as well as the ureteral stent by a robotic grasper. Thereafter, we temporarily undocked one robot working arm to introduce a flexible nephroscope into the proximal ureter and further into the renal pelvis and collecting system under direct vision. We identified the upper calyceal stone, we extracted it with a basket catheter and removed it via the port. Finally, we robotically replaced the ureteral stent. Summary of results: Surgery lasted 100 min, thereof 50 min console time and 12 minutes flexible nephroscopy time, respectively. Estimated blood loss was less than 50 ml. The intraoperative and postoperative period was uneventful and we discharged the patient on postoperative day 5. We successfully removed the ureteral stent three weeks after robotic-

assisted ureterolithotomy. Imaging studies excluded pyelocalyceal dilatation and confirmed that the upper urinary tract was stone-free.

Conclusion(s): Laparoscopic robot-assisted ureterolithotomy combined with flexible renoscopy for the removal of an upper calyceal calculus was feasible without relevant complications. It may represent an alternative treatment option in the management of multiple upper tract calculi in patients who have failed retrograde procedures.

Status

CONFERENCE ABSTRACT

Institution

(Alexandrov, Lund, Kassabov, Goell, Buse) Urology, Alfried Krupp Krankenhaus, Essen, Germany

Publisher

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Year of Publication

2012

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739.

Multi-tract percutaneous nephrolithotomie combining a standard tract using a nephroscope and mini-percutaneous-tracts using a rigid ureteroscope.

Moufid K., Ammani A., Bazine K., Asseban M., Alami M., Beddouch A., Lezrek M.

Embase

Urology. Conference: 32nd Congress of the Societe Internationale d'Urologie. Fukuoka Japan.

Conference Publication: (var.pagings). 80(3 SUPPL. 1) (pp S323), 2012. Date of Publication:

September 2012.

[Conference Abstract]

AN: 70900113

Introduction and Objective: We describe our experience in managing complex renal calculi by combining a standard first tract using a nephroscope and a simultaneous second percutaneous tract using a rigid ureteroscope, to remove the residual caliceal stones, which were inaccessible from the existing tract.

Material(s) and Method(s): Between January 2005 and June 2011, data from 30 patients corresponding to 32 renal units with multiple complex renal stones, which required multiple (≥ 2) access tracts in a single session, were analyzed retrospectively. Operative technique: percutaneous surgery is performed in the split leg modified lateral position. The first tract is achieved with a 24 or 30 Fr Amplatz sheath, using a 20.8 Fr nephroscope. When another percutaneous tract is necessary (a large stone burden, or unavailability of flexible nephroscope or flexible lithotripter), a second caliceal puncture is performed. Dilation to 10 or 12 Fr and insertion of a safety guidewire are mostly performed under endoscopic control without radiation exposure. The rigid ureteroscope (6 or 8 Fr) is introduced over a guidewire under direct vision. Then, it is used to mobilize stones from the calyx to the renal pelvis. Stone fragmentation and extraction is performed via the first tract by the nephroscope, simultaneously if possible, or alternately. At the end of the procedure a 20 Fr Foley catheter and an 8 Fr drain tube are respectively inserted in the first and second tract.

Result(s): A second or third mini tract, using the rigid ureteroscope, was possible in all patients. A total of 67 percutaneous access tracts were realized. 28, 23, and 16 tracts were respectively through the upper, middle and lower calyx. The mean operating time was 125 min (extreme 85 - 192 min). The number of access was 2 in 29 renal units, and 3 in 3 renal units. The average decrease in serum hemoglobin was 2.7 ± 0.9 g/dl. The mean hospital stay was 4.5 days (3 - 6 days). A singlestage PCNL resulted in complete clearance in 27 renal units (84%). No transfusion was required. The Clavien score distribution was: no complication in 85%, grade 1 in 15% and grade 2 in 5%.

Conclusion(s): A second or third mini tract, using the rigid ureteroscope, was possible and safe. It is another application for the rigid ureteroscope, already available in every endourology operating room, so there is no need for new equipment (mini-nephroscope). In addition, this mini second tract might provide less morbidity than a standard second tract. Also, it might avoid the need for a second look, and the need for flexible instruments (baskets, flexible lithotripter...), which are more expensive.

Status

CONFERENCE ABSTRACT

Institution

(Moufid, Ammani, Bazine, Asseban, Alami, Beddouch, Lezrek) Dept. of Urology, Military Hospital Moulay Ismail, Meknes, Morocco

Publisher

Elsevier Inc.
Year of Publication
2012

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740.

Baskets, ureteral access sheaths, and stents do not affect the stone free rate in ureteroscopy in obese or normal weight patients.

Chew B., Zavaglia B., Lange D., Paterson R., Teichman J., Matlaga B., Zappavigna C., Nunez R., Bruhn A., Altamar H., Humphreys M., Miller N., Shah O.

Embase

Urology. Conference: 32nd Congress of the Societe Internationale d'Urologie. Fukuoka Japan.
Conference Publication: (var.pagings). 80(3 SUPPL. 1) (pp S320), 2012. Date of Publication:
September 2012.

[Conference Abstract]

AN: 70900103

Introduction and Objective: Shockwave lithotripsy may not be an option in obese patients. We determined the effectiveness of ureteroscopic laser lithotripsy in obese patients compared to controls.

Material(s) and Method(s): Patients who underwent ureteroscopic procedures for urolithiasis at four centres with fellowship- trained endourologists were retrospectively analyzed.

Result(s): The 292 patients included 163 obese (BMI ≥ 30 kg/m²), 76 overweight (BMI = 25-30), and 53 normal weight controls (BMI <25). There were significantly more patients in ASA categories 2, 3, and 4 in the overweight and obese groups. The rate of diabetes was significantly higher in the obese and overweight groups ($P=0.0240$). The percentage of obese patients requiring flexible ureteroscopy (79%) was higher than in the other groups ($P<0.0001$). Stone free rate (SFR) did not differ among groups. Flexible ureteroscopy was associated with a lower stone

free rate on multivariate analysis ($p=0.034$). There was no difference in SFRs of patients who required a ureteral access sheath, basket extraction, or received a post-operative stent. The complication rate did not differ between groups, although patients with an elevated BMI were less likely to have day surgery.

Conclusion(s): SFRs are similar in obese and overweight populations to normal weight patients. The decreased SFR seen with flexible ureteroscopy was likely due to more proximal stone locations. Higher BMI was associated with a longer hospital stay. Ureteroscopic laser lithotripsy is an effective and safe technique to treat urolithiasis in the overweight/obese patient. The use of stents, baskets, or access sheaths did not affect the SFR in any group.

Status

CONFERENCE ABSTRACT

Institution

(Chew, Zavaglia, Lange, Paterson, Teichman, Zappavigna) University of British Columbia,

Vancouver, Canada (Matlaga) Johns Hopkins University, Baltimore, United States

(Nunez, Humphreys) Mayo Clinic, Phoenix, United States

(Bruhn, Shah) New York University, New York, United States

(Altamar, Miller) Vanderbilt University, Nashville, United States

Publisher

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Year of Publication

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741.

Backstop gel to prevent stone fragment migration after endourologic lithotripsy: Initial experience.

Rodriguez A., Pacheco M., Hakky T.

Embase

Urology. Conference: 32nd Congress of the Societe Internationale d'Urologie. Fukuoka Japan.
Conference Publication: (var.pagings). 80(3 SUPPL. 1) (pp S185-S186), 2012. Date of
Publication: September 2012.

[Conference Abstract]

AN: 70899724

Introduction and Objective: In this video, we present our initial experience with the use of the BackStop gel for preventing stone fragment migration after endourologic lithotripsy.

Material(s) and Method(s): From January 11, 2012 to February 1, 2012, 2 patients with stones in the urinary tract were treated endourologically for stone disease. One patient had a history of a non progressing proximal 5 mm right ureteral stone and the other had a 2.5 cm right lower pole stone. The BackStop Gel (thermosensitive polymer) was used to prevent stone fragment migration during lithotripsy using either the holmium laser or the ultrasonic probe. Non-contrast CT scans was performed before and after surgery.

Result(s): During right ureteroscopy, the BackStop gel was placed 2 cm away from the 5 mm stone lodged in the proximal ureter (between renal pelvis and stone). Holmium laser lithotripsy was performed and basket extraction of stone fragments from the ureter was performed. During a right PCNL, the BackStop gel was deployed in the proximal ureter just passing the ureteral pelvic junction. To help position the 3 french BackStop gel catheter, a 5 french Pollack catheter was placed into the ureter using the nephroscope and the BackStop gel applicator was passed into the Pollack catheter. Using live fluoroscopy, the exact position of gel deployment was secured. The BackStop gel prevented migration of stone fragments in both patients without complications. Postoperative CT scans of both patients confirmed stone-free status.

Conclusion(s): The BackStop gel prevents retropulsion of stone fragments up to the kidney when performing ureteroscopic laser lithotripsy and prevents stone migration down the ureter when used before percutaneous nephrolithotripsy, decreasing the operative time.

Status

CONFERENCE ABSTRACT

Institution

(Rodriguez, Pacheco, Hakky) Dept. of Urology, University of South Florida, Tampa, United States

Publisher

Elsevier Inc.

Year of Publication

2012

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742.

Microlaparoscopic renal stone extraction: Demonstration of a combined procedure with microlaparoscopic pyeloplasty using a short ureteroscope.

Sawyer M.D., Broughton G., Viprakasit D.P., Miller N.L., Herrell S.D.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012. Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A505), 2012. Date of Publication: September 2012.

[Conference Abstract]

AN: 70876984

OBJECTIVE: Surgeons continue to attempt to decrease morbidity and improve cosmesis of procedures using fewer and/or smaller incisions. Microlaparoscopy is a promising alternative to LESS and NOTES procedures. Our standard microlaparoscopic technique uses a single 5mm trocar periumbilically, two 3mm trocars and 2mm instruments (Karl Storz, Germany). This video demonstrates microlaparoscopic treatment of a lower pole renal stone in a 69 year old woman with symptomatic UPJ obstruction.

METHOD(S): This procedure begins with our standard technique for microlaparoscopic pyeloplasty. After standard dissection, a small incision is made in the redundant pelvis. A short Flex-X ureteroscope (Karl Storz) is passed through a 3mm trocar and manipulated through the pelvic incision into the lower pole using saline irrigation inside the kidney. The stone is identified in the lower pole, grasped with a stone basket and removed from the kidney. Following dismembered pyeloplasty, the stone and redundant pelvis are removed.

RESULT(S): The time from insertion of the ureteroscope to removal of stone from the pelvis was 11 minutes. Use of a specialized short flexible ureteroscope minimized extracorporeal scope redundancy. Stone diameter was 5mm. The patient had minimal post-operative discomfort and was discharged on postoperative day one.

CONCLUSION(S): This video demonstrates a novel application of microlaparoscopy for treatment of stone disease in conjunction with a pyeloplasty. This allowed treatment of the stone without conversion to standard laparoscopy or requiring a separate procedure. A microlaparoscopic

approach could be considered as a primary modality for stone disease when a laparoscopic approach is being considered.

Status

CONFERENCE ABSTRACT

Institution

(Sawyer, Broughton, Viprakasit, Miller, Herrell) Department of Urologic Surgery, Vanderbilt University Medical Center, Nashville, TN, United States

Publisher

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743.

Supine percutaneous nephrolithotomy (PCNL) in a horseshoe kidney.

Goumas I.K., Itri E., D'Addezzio F., Montanari E., Zanetti G.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012.

Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A489-A490), 2012.

Date of Publication: September 2012.

[Conference Abstract]

AN: 70876935

OBJECTIVE: Feasibility and effectiveness of PCNL in the supine position in a horseshoe kidney using an upper pole access.

METHOD(S): The patient is a male of 44 years with a horseshoe kidney and with multiple stones in the left kidney: a staghorn stone of the upper infundibulum (20 x 18mm) with hydronephrosis of the upper calyces, multiple upper calyceal stones (9 x 5, 9 x 5, 10 x 9mm) and a pyelic stone (11

x 10 mm). The patient underwent a single PCNL in the supine oblique position. An ultrasound fluoroscopically adjusted puncture was performed with a single subcostal direct access to the upper calyx. The percutaneous tract was dilated with a balloon up to 24 Fr and an Amplatz cannula was positioned. First, a combined ultrasonic and ballistic lithotripsy was performed using the rigid nephroscope. Then a flexible nephroscope was introduced and the renal pelvis was reached. A Ho:YAG laser lithotripsy was performed and all the fragments were removed by means of a nitinol basket. At the end of the procedure a JJ ureteral stent and an 8 Fr nephrostomy were placed.

RESULT(S): There were no intra- or postoperative complications. At 40 days there was no evidence of residual stones in the CT scan.

CONCLUSION(S): PCNL in the supine position with a direct upper pole access in a horseshoe kidney is feasible, safe and effective.

Status

CONFERENCE ABSTRACT

Institution

(Goumas, Itri, D'Addezio, Zanetti) Division of Urology, Department of Surgery, Vimercate Hospital, Monza Brianza, Italy (Montanari) Division of Urology, San Paolo Hospital, University of Milan, Milan, Italy

Publisher

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744.

Combined laparoscopic pyeloplasty and pyelolithotomy assisted by flexible ureterorenoscopy through an access sheath used as a trocar.

Gozen A.S., Alhajeri D., Assam A., Schulze M., Rassweiler J.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012. Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A477-A478), 2012.

Date of Publication: September 2012.

[Conference Abstract]

AN: 70876897

OBJECTIVE: Uretero-pelvic junction obstruction (UPJO) and concomitant renal calculus disease may coexist. Calyceal stones have been removed through simultaneous laparoscopic pyeloplasty and pyelolithotomy. In this video, we present our technique of laparoscopic pyeloplasty and pyelolithotomy assisted by flexible ureterorenoscopy.

METHOD(S): A 55 year male presented with right flank colicky pain in our department.

Ultrasound, CT scan, IVP and renal scan were done and revealed right hydronephrosis with UPJO associated with multiple stones with different sizes of 6+/-20mm occupying the middle and lower calices. Split renal function was 46% for the left and 54% for the right. We performed right transperitoneal laparoscopic pyeloplasty and pyelolithotomy. A flexible ureterorenoscopus was inserted through an access sheath used as a trocar to directly access the renal pelvis. The lower caliceal stones were removed using stone basket retrieval and the mid-caliceal stones removed laparoscopically with an endodissektor.

RESULT(S): Operative time was 170 minutes. Blood loss was minimal and no intra-peri-operative complications occurred. Hospital stay was 3 days. Post operative KUB shows JJ stent in place with a remnant 5mm stone in lower calyx. The patient underwent subsequent extracorporeal shock-wave lithotripsy during follow up as an auxiliary procedure.

CONCLUSION(S): Laparoscopic pyelolithotomy represents an excellent, yet less-invasive option when combined with pyeloplasty. Flexible ureteroscopy can be combined to deal with complex stone disease and to provide optimal treatment of the patient with a UPJO. However patients must be counseled about the possibilities of auxiliary procedures to achieve complete stone clearance.

Status

CONFERENCE ABSTRACT

Institution

(Gozen, Alhajeri, Assam, Schulze, Rassweiler) SLK Kliniken Heilbronn, Department of Urology, University of Heidelberg, Germany

Publisher

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745.

Anterograde flexible ureteroscopy for ureteral proximal stone disease in a transplanted kidney.

Thomas A., Gomez F.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012. Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A475), 2012. Date of Publication: September 2012.

[Conference Abstract]

AN: 70876888

OBJECTIVE: Explain through a video the possibility to manage ureteral stone disease of a kidney transplant with minimal invasive method.

METHOD(S): Anterograde transrenal percutaneous flexible ureteroscopy for stone desintegration. After ultrasonographic kidney graft puncture, a safety and a working wires are inserted in the upper collecting system. We used of a classical reinforced 12/ 14 Fr ureteral access sheath after telescopic percutaneous dilatation with Alken's dilators. The procedure is then performed as a retrograde ureteral stone approach with use of Holmium-Yag laser disintegration.

RESULT(S): The graft uretero-hydronephrosis resulting from the ureteral stone obstruction offers an easy access to the collecting system. The ureteral access sheath is used to keep the way to the stone, to decrease intra-renal pressure, improve irrigation and to facilitate entry and re-entry. We showed the possibility of basket stone fragment extraction through this approach. We obtained a complete clearance of the stone in one session. Double-J Stent was inserted at the end of the procedure. We didn't leave a nephrostomy tube. No intra-operative or immediate post-operative complication occurred. The follow-up is actually 3 months.

CONCLUSION(S): Percutaneous anterograde flexible ureteroscopy is safe and effective access for transplanted eternal stone management.

Status

CONFERENCE ABSTRACT

Institution

(Thomas, Gomez) Department of Urology, Liege University, Liege, Belgium

Publisher

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746.

Treatment of the cacci-ricci's complicated stones by flexible ureterorenoscopy.

Khalil F., Tligui M., Traxer O.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012. Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A474), 2012. Date of Publication: September 2012.

[Conference Abstract]

AN: 70876887

OBJECTIVE: The Cacci-Ricci disease is characterized by a congenital cystic dilatation of renal collecting ducts with precaliceal stone formation. Traditional lithotripsy methods(SWL, PCNL) generally fails in the treatment of some complicated forms. The flexible ureteroscopy coupled with the holmium-YAG laser demonstrated its performance and effectiveness in this abnormality.

METHOD(S): We present the case of two patients with a long history of recurrent pyelonephritis, recurrent urinary tract infections and chronic pain. The CT scan shows bilateral precalyceal

stones of the Cacci-Ricci. We performe a flexible ureteroscopy with the standard technique. The position of the stones can be controlled by combining a direct vision and fluoroscopy. After setting the laser generator parameters(5+/- 8Hz, 400+/-800mJ or 4+/-9 Watts), an incision of the veil separating the stones and the excretory cavities is performed. The holmium's energy has a tissue penetration less than 0.4mm so that its effect is relatively superficial and endoscopically visible. Then we make an in situ stone's fragmentation. Finally the fragments are removed using a nitinol basket and renal cavities are drained by a double J stent.

RESULT(S): This technical process is relatively simple but needs some training. It should be reserved for complicated forms of the Cacchi Ricci disease (reccurent forms with complex stones, uper urinary tract infection, chronic pain). At this date, this is the unique efficient technique for the treatment of the precalyceal stones.

CONCLUSION(S): The flexible ureteroscopy coupled with the holmium:YAG laser is an efficient method to treat the complicated forme of the Cacci-Ricci disease.

Status

CONFERENCE ABSTRACT

Institution

(Khalil, Tligui, Traxer) Urology Department, Tenon Hospital, Paris, France

Publisher

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747.

Endoscopic management of ureteral avulsion.

Andriopoulos N., Mpellos X., Karamanis A., Kosmaoglou E., Pardalidis N.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012. Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A454), 2012. Date of Publication: September 2012.

[Conference Abstract]

AN: 70876824

OBJECTIVE: Ureteral avulsion is a rare complication of ureteroscopy. We present 2 cases of complete ureteral avulsion referred to our hospital. This situation requires immediate intervention, endoscopic if possible, to avoid loss of the renal unit.

METHOD(S): We present 2 cases of ureteral avulsion in a series of 1245 ureteroscopic procedures performed from 2001 to 2011. In one case the ureteroscope became wedged in the intramural ureter during ureterolithotripsy and in the other case the ureter was avulsed during removal of a ureteral stone with a basket. Both cases were managed immediately endoscopically. A 6Fr double pigtail stent was placed over the safety guidewire under fluoroscopy, aiming at restoring the urinary tract continuity. To control urinary leakage into the retroperitoneum, nephrostomy tube was placed in both cases.

RESULT(S): The patients are on close follow up with IVU and CT urography as they chose to be treated conservatively by changing the stent twice per year. Both patients are being followed up for 36 and 23 months respectively.

CONCLUSION(S): Complete ureteral avulsion is a rare but severe complication. To minimize the risk of such event, one should always perform balloon dilation of the ureteral orifice, lubrication along the entire length of the scope, careful technique of ureteral insertion and also placement of a safety guide wire.

Status

CONFERENCE ABSTRACT

Institution

(Andriopoulos, Mpellos, Karamanis, Kosmaoglou, Pardalidis) Department of Urology, Athens Medical Centre, Athens, Greece

Publisher

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Year of Publication

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748.

Ureteroscopic stone implantation technique in the pig kidney: A new animal model for retrograde intrarenal surgery.

Resorlu B., Unsal A., Tunc L., Sarikaya S., Gozen A.S., Akay E.O., Canda A.E., Ozgok Y.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012. Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A419), 2012. Date of Publication: September 2012.

[Conference Abstract]

AN: 70876721

OBJECTIVE: The role of RIRS has broadened in the last decade with improvements in flexible ureteroscopes, instrumentes and user experience. In this study we developed a technique for retrograde ureteroscopic implantation of stones into the pig kidney.

METHOD(S): All procedures were performed after obtaining Institutional Animal Care and Use Committee approval. Three female pigs were included in the study. The animals were placed in a supin or flank position under general anesthesia (Figure 1). A 22 Fr cystoscope was used to place a hydrophilic guidewire into the renal pelvis. After passing a 0.038-inch safety guidewire into the renal pelvis; a ureteral access sheath (9.5/11.5F or 12/14F) was placed. Stone was placed within a 2.2 Fr nitinol basket and was advanced through the access sheath by using a 7.5Fr flexible ureteroscope (Karl Storz Flex-X2) into the renal pelvis. After implantation of the stone, ureteral access sheath was removed and urologists with moderate experience in advanced endourologic surgery were trained using this model.

RESULT(S): Initial attempts to implant stones in the renal pelvis by laparoscopically was not suitable, so this technique was devised as an alternative procedure. In this technique, stone was introduced to the renal pelvis of pig via retrograde access using a flexible ureteroscope and nitinol basket. This implantation method was successfully performed in all cases. (Figure Presented)

CONCLUSION(S): We developed a simple and easy stone implantation model to use in the learning and training of retrograde intrarenal surgery with a porcine model.

Status

CONFERENCE ABSTRACT

Institution

(Resorlu, Unsal, Sarikaya) Department of Urology, Kecioren Training and Research Hospital, Ankara, Turkey (Tunc) Department of Urology, University of Gazi, School of Medicine, Ankara, Turkey

(Gozen) Department of Urology, University of Heidelberg, Heilbronn, Germany

(Akay, Ozgok) Department of Urology, Gulhane Military Medical Academy, Ankara, Turkey

(Canda) Department of Urology, Ataturk Training and Research Hospital, Ankara, Turkey

Publisher

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Year of Publication

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749.

Comparison of laser and pneumatic ureterolithotripsy in ureteral stones.

Aridotan I.A., Izol V., Deter M., Karsli O., Bayazit Y., Satar N.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012. Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A382), 2012. Date of Publication: September 2012.

[Conference Abstract]

AN: 70876614

OBJECTIVE: In this study, it is aimed to compare the results of endoscopic treatment of ureteral stones by Holmium:YAG laser and pneumatic lithotripsy applied in our clinic.

METHOD(S): Between December 2008 and February 2012, rigid ureteroscopy was used in 302 patients in whom 49 were under the age of 16. Ho:YAG laser was used in 198 patients and pneumatic lithotripter in 97. Patients in whom both of the lithotriptors used were not included in this study. Grasper forceps, triceps and basket were used in the removal of stones.

RESULT(S): Ureteroscopy was performed in 215 (73%) male and 80 (27%) female patients with a mean age of 36,6 (1-82). The stone free rates of proximal, middle and distal ureteral stones cured by Ho:YAG laser were 75%, 92.3% and 93.5% respectively. Stone free rates for the group pneumatic lithotripsy were used for proximal, middle and distal ureteral stones were 52%, 78.9%, and 86.7, respectively. Of proximal ureteral stones 9.3% in the Ho:YAG laser group and 40% of pneumatic lithotripsy group were migrated to kidney. After ureteroscopy; in 83 patients Double J (DJ), in 12 patients ureteral catheter and in 2 patients percutaneous nephrostomy were placed. Two-hundred patients were discharged on the same day of the operation.

CONCLUSION(S): Urelithotripsy is a minimal invasive treatment modality with rare postoperative complications and a short convalescence period, when it is performed with appropriate instruments. Recently Ho:YAG laser lithotripsy is an accepted treatment of choice since it is more effective and causes less stone migration to kidney.

Status

CONFERENCE ABSTRACT

Institution

(Aridotan, Izol, Deter, Karsli, Bayazit, Satar) Department of Urology, Faculty of Medicine, Cxukurova University, Adana, Turkey

Publisher

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2012

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750.

Equipment use during ureteroscopy: Is there a difference between tertiary care hospitals and community hospitals?.

Friedlander J.I., Bin X., Okhunov Z., Sison C., Smith A., Okeke Z.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012. Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A375-A376), 2012.

Date of Publication: September 2012.

[Conference Abstract]

AN: 70876593

OBJECTIVE: To investigate whether usage of disposable equipment during ureteroscopy (URS) for calculi in the ureter differs between tertiary care (TH) and community hospitals (CH).

METHOD(S): We performed a retrospective review of URS procedures for calculus disease at two CH and two TH from January through October 2010. Variables under investigation included patient demographics, fellowship status, hospital setting, stone characteristics, equipment used, and clinical outcomes. Cost data was obtained from health system billing records. Statistical analysis was performed.

RESULT(S): Of the 318 procedures evaluated, 80.8% (257) were performed at TH versus 19.2% (61) performed at CH. Significant differences were found between TH and CH for Holmium laser use (65.4% vs. 49.2%, $p < 0.03$), balloon dilator use (31.5% vs. 73.8%, $p < 0.0001$), ureteral access sheath use (27.6% vs 4.9%, $p < 0.0001$), dual lumen catheter use (22.2% vs. 1.6%, $p < 0.0001$), use of stone baskets (95.7% vs. 86.9%, $p < 0.015$), and the presence of a stent in place prior to definitive ureteroscopy (26.9% vs. 14.8%, $p < 0.049$), respectively. The stone-free rate for TH was 91.4% versus 86.9% at CH, this was not statistically significant ($p < 0.32$). Multivariate analysis revealed that stone size ($p < 0.001$) and the presence of a stent in place before URS ($p < 0.0006$) were associated with cost of disposable equipment.

CONCLUSION(S): We found no difference in the mean cost of disposable equipment used during URS between TH and CH. TH demonstrated more frequent use of the Holmium laser, ureteral access sheaths, dual lumen catheters, and stone baskets, whereas CH demonstrated more frequent use of ureteral balloon dilation.

Status

CONFERENCE ABSTRACT

Institution

(Friedlander, Bin, Okhunov, Sison, Smith, Okeke) Arthur Smith Institute for Urology, Hofstra North Shore-LIJ, School of Medicine, New Hyde Park, NY, United States

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751.

Retrograde ureteroscopic lithotripsy for upper ureteral stones: A 10-year experience.

Kim B.S., Kwon S.Y., Lee J.N., Choi J.Y., Choi S.H., Kim T.H., Kwon T.G., Chung S.K., Kim B.W., Park Y.K.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012. Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A375), 2012. Date of Publication: September 2012.

[Conference Abstract]

AN: 70876592

OBJECTIVE: We reviewed our 10-year experience with retrograde ureteroscopic lithotripsy (URS) for patients with upper ureteral stones and compared the outcomes and safety.

METHOD(S): We retrospectively analyzed the medical records of 304 patients who underwent URS for upper ureteral stones at our center from January 2001 to December 2010. All procedures were performed by 8.9Fr semirigid ureteroscope. Patient and stone characteristics, treatment variables and clinical outcomes were compared between stone-free (group A) and nonstone-free (group B) groups by multivariate logistic regression analysis.

RESULT(S): Overall stone free rate was 75.5%, the mean operation time was 53.6 +/- 18.2 minutes, and the rates of intraoperative (including stone migration) and postoperative complications were 33.2% and 2.6%, respectively. In comparing group A and group B, mean stone size was significantly lower and the rates of using stone basket and laser lithotripter were significantly higher in group A. However, other perioperative outcomes were not statistically different between the two groups (Table 1).

CONCLUSION(S): URS is a safe and effective method for treatment of upper ureteral stone. A high postoperative stone-free rate is associated with the use of a stone basket and/or laser lithotripter to ensure thoroughness while avoiding migration of the stones into the renal pelvis. (Table presented).

Status

CONFERENCE ABSTRACT

Institution

(Kim, Kwon, Lee, Choi, Choi, Kim, Kwon, Chung, Kim, Park) Department of Urology, School of Medicine, Kyungpook National University, Daegu, South Korea

Publisher

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752.

A new trick about upper ureteral stone TUL.

Falahatkar S., Allahkhah A.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012. Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A352), 2012. Date of Publication: September 2012.

[Conference Abstract]

AN: 70876524

OBJECTIVE: To share our experience for increasing stone free rate of upper ureteral stone with other urologists.

METHOD(S): After inserting a guide wire to the kidney, we start the ureteroscopy in lithotomy position with 6.9F to 7.2F semirigid instruments. The pneumatic lithotripter is used for intracorporeal stone fragmentation. Because of ureter dilatation, stone migration is inevitable and in this usual scenario the stone migrates toward the lower calyx, so lithotripsy by semirigid instrument is not possible. Thus, the anesthesiologist is asked to lift the side of bed which is in the

opposite side of stone and the co-worker is ordered to shake the kidney forthwith the stone migrates to the other side. At that propitious moment, lithotripsy or basket engagement of stone is feasible.

RESULT(S): In this study, with these maneuvers stone migration can be followed and the problem can be solved but sometimes the efforts are ineffectual. This method performed in three patients in our center by one surgeon.

CONCLUSION(S): This study showed that tilting the patient to lift the opposite side of stone and shaking of the kidney is preferable to holding and fragmenting the stone within a basket. We showed that the maneuver may be not ideal and successful in all patients but we believe it is an additional helping method to increase success rate. The bed must have the potential for lateral tilting. There is no cost for this maneuver so it is one of benefits.

Status

CONFERENCE ABSTRACT

Institution

(Falahatkar, Allahkhah) Urology Research Center, Guilan University of Medical Sciences, China

Publisher

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753.

Our urs experiences in the treatment of distal ureteral stones.

Bedir S., Kopru B., Akay E.O., Ergin G., Ozgok I.Y.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012. Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A333), 2012. Date of Publication: September 2012.

[Conference Abstract]

AN: 70876471

OBJECTIVE: METHODS: Between 2006 and March 2012 due to ureter stones were treated with a total of 111 patients. The mean age was 38.4. A total of 65 patients (58%) lower uctasxi left ureter, 46 patients (42%) were stone the right ureter. The mean stone size was calculated to be 10.8mm. 83 patients (74%), laser lithotripsy, 8 patients (0.07%) underwent pneumatic lithotripsy. In addition, 49 patients (44%) with a basket catheter in 10 patients (0.09%) were included in the external environment of the stones are fragmented with a foreign body forceps. 80 patients (72%) were implanted in the D-J. A total of 101 patients (91.1%) stone clearance was achieved. 2 patients in the treatment of ureter stone could not be applied because of shortness. These patients were followed up by putting a catheter guide wire with a DJ. Entered a month later and was treated with URS. The most common complication in 56 patients (62%) was determined as hematuria and dysuria. 4 patients (3.6%), urinary tract infections were detected in postoperative period. In addition to these ureteral perforation, severe complications such as ureteral obstruction was not detected.

RESULT(S): The use of laser and pneumatic lithotripsy in the treatment of distal ureteral stones and stone-free rates and treatment success rates increase. In addition to operating at the appropriate basket kateterizsyon stone-free rate increases and additional methods of foreign body forceps. Laser lithotripsy and pneumatic lithotripsy in the treatment of distal ureteral stones, as well as safe and suitable for the use of basket catheters and foreign body forceps use, still the most effective treatment methods.

Status

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754.

Are postoperative antibiotics necessary after uncomplicated ureteroscopy?.

Lange D., Arsovska O., Ross M., Eisner B.H., Kurtz M.P., Gershman B., Paterson R.F., Chew B.H.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012. Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A276), 2012. Date of Publication: September 2012.

[Conference Abstract]

AN: 70876302

OBJECTIVE: This study shows the findings of a North American study evaluating the rate of post-operative urinary infection following ureteroscopic stone treatment.

METHOD(S): We retrospectively reviewed data of 153 subjects. Our initial chart review was for 73 subjects who had undergone ureteroscopy at 2 institutions across North America. All patients received pre-operative, but not post-operative antibiotics, and we found only 2 post-operative urinary tract infections (UTIs) (3.6%). We excluded patients who had history of recurrent cystitis or pyelonephritis, treatment for UTI within 3 months of procedure, and indwelling nephrostomy tube or ureteral stent at the time of procedure. In order to substantiate our findings, we collected data for 80 additional subjects who underwent ureteroscopy at University of British Columbia affiliated hospitals, without exclusions.

RESULT(S): 73/80 subjects (91.3%) were confirmed to have received pre-operative antibiotics (Cefazolin n = 56), while 7 (8.8%) could not be verified. 41 (51.3%) subjects received postoperative antibiotics while 39 (48.8%) did not. Median age was 52.8 (14.5) and mean BMI was 28.6 (6.3). Laser lithotripsy was used in 75 (93.8%), ureteral access sheath in 41 (51.3%), and a basket in 46 (57.5%). Even without exclusions, only four (5.0%) of the patients developed confirmed postoperative UTIs, 2 of whom received and 2 did not receive post-operative antibiotics.

CONCLUSION(S): Our data suggests that post-operative antibiotics are not necessary as the rate of infection after ureteroscopic stone treatment is very low. There was no difference in postoperative infection rates and reducing antibiotic use will limit adverse effects such as colitis and antibiotic resistance.

Status

CONFERENCE ABSTRACT

Institution

(Lange, Arsovska, Ross, Paterson, Chew) University of British Columbia, Vancouver, BC, Canada (Eisner, Kurtz, Gershman) Department of Urology, Massachusetts General Hospital, Harvard Medical School, United States

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755.

Treatment of stucked stone in a broken basket catheter with pneumatic lithotripter.

Alp B.F., Guragac A., Demirer Z., Basal S., Aydur E., Yildirim I.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012.

Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A273-A274), 2012.

Date of Publication: September 2012.

[Conference Abstract]

AN: 70876294

OBJECTIVE: Ureteroscopy is a treatment option for ureteral calculi usually resistant to SWL.

Using basket catheters during ureteroscopy not only simplifying the stone extraction but also a part of ureterorenoscopic surgery. We presented a case with stucked stone in a broken basket and it's management by using pneumatic lithotripter.

METHOD(S): A 54-year-old man presented with a history of continuous left flank pain. IVP revealed 2 stones about 10x10 milimeters located in the lower pole at the left kidney and 13mm stone at lower part of the left ureter (figure 1). After three failed SWL procedures ureteroscopy

with in situ pneumatic lithotripsy was performed. During operation R & D tech Basket Catheter 116 Sagra SS 4 wires was used extraction of relatively small stone as gently as possible but the catheter fractured at the distal wire part (Figure2). We fragmented stucked stone in the broken basket catheter by using pneumatic lithotripter. After the fragmentation of the stone we removed the broken part of the catheter and a 6 F 28 cm double - J catheter was placed. Patient was discharged 1 day after the operation.

RESULT(S): DJ stent was removed after 4 weeks. Plain radiography kidney, ureter, bladder (KUB) and ultrasound were taken and any ureteral stone and ureterohydronephrosis were not detected.

CONCLUSION(S): Stucked stone in a broken basket catheter can be treated with pneumatic lithotripter successfully without any complication. Urologist must be aware of complications, solutions and the precautions about using basket catheter in a ureterorenoscopy procedure. (Figure presented) .

Status

CONFERENCE ABSTRACT

Institution

(Alp, Guragac, Demirer, Basal, Aydur, Yildirim) Department of Urology, Gulhane Military Medical Academy, Ankara, Turkey

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756.

The endourological treatment of renal matrix stones.

Beltrami P., Ruggera L., Guttilla A., Iafrate M., Iannetti A., Bernich P., Gigli F., Zattoni F.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012. Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A237), 2012. Date of Publication: September 2012.

[Conference Abstract]

AN: 70876202

OBJECTIVE: Renal matrix stones are a rare form of calculi. Conventional radiologic techniques are unable to make a correct diagnosis of renal matrix stones. Also, intravenous urography does not always help distinguish between matrix stones and other filling defects, while computer tomography is more reliable in diagnosing. However, an unquestionable diagnosis is usually made at surgery. We report our experience with the endourological treatment of this relatively rare entity.

METHOD(S): We treated 9 female patients (Tab. 1). We used PCNL and the matrix stones were aspirated or removed with forceps and for the hard component ultrasound lithotripsy was employed. In the retrograde approach (RIRS), either semirigid or flexible instruments were employed and the matrix component was evacuated with either forceps or basket, or with an aspirator. Ho:YAG laser was used to fragment the calcareous component or to cut the matrix material. SWL was used to treat residual fragment of hard component.

RESULT(S): The first line treatment in 6 patients was PCNL with complete clearance in a single session. One patient was (Table Presented) treated with RIRS and SWL of residual fragments; an additional patient with RIRS and PCNL. In this patient, RIRS was also indicated to establish the diagnosis of a filling defect. A patient required a multidisciplinary approach because of early stone relapses.

CONCLUSION(S): PCNL has been confirmed as the first option, while RIRS may be employed to treat either lower size stones or stones at high risk of recurrence. A close follow-up are suggested in order to reduce the risk of recurrence.

Status

CONFERENCE ABSTRACT

Institution

(Beltrami, Guttilla, Iafrate, Iannetti, Zattoni, Gigli, Zattoni) Department of Oncological and Surgical Sciences, Urology Clinic, University of Padua, Padua, Italy (Ruggera) Department of Urology, S. Maria degli Angeli Hospital, Pordenone, Italy

(Bernich) Department of Nephrology, University of Verona, Verona, Italy

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757.

Percutaneous endoscopic laser lithotripsy in orthotopic liver transplant patients for complex biliary calculi.

Angell J.E., Winship B., Healy K., Martin L., Ogan K.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012. Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A180), 2012. Date of Publication: September 2012.

[Conference Abstract]

AN: 70876044

OBJECTIVE: Laser lithotripsy revolutionized the treatment of urolithiasis. Studies shown its usefulness in complex biliary tract calculi (CBC). We evaluated the use of laser lithotripsy in patients with CBC and orthotopic liver transplants (OLT).

METHOD(S): We reviewed OLT patients who underwent percutaneous endoscopic biliary laser lithotripsy (PEBLL) for CBC (n = 6) from 2005-2011. All patients previously failed treatment with percutaneous transhepatic cholangiography or endoscopic retrograde cholangiopancreatography. All patients had drained biliary systems prior to PEBLL. PEBLL was performed through transhepatic tracts with flexible endoscopes. Stones were fragmented with the laser, fragments manipulated into the jejunal limb of the hepatojejunostomy or removed with nitinol basketing. Stone clearance was verified with intra/post-operative cholangiography.

RESULT(S): Mean patient age was 56.6 years (32-67 years). Mean age-adjusted Charlson co-morbidity index (CCI) was 8.4. Mean stone burden was 3 cm (1-5 cm). 5 patients underwent 6 procedures (PEBLL) with stones being found in the common bile duct (CBD) in 3 patients, and in the hepatic ducts (HD) in 5 patients. 3 patients had both CBD and HD stones. 4 of 5 patients were stone free with one procedure. No peri-operative complications occurred. Mean length of

stay was 2.5 days. Mean follow-up cholangiography was 10 days; all patients were stone free on post-operative imaging. All patients drainage tubes were removed. At mean follow-up of 10.1 months all patients remained stone free.

CONCLUSION(S): PEBLL is a safe and effective alternative treatment for CBC in OLT patients where other treatments failed. PEBLL provides an opportunity to treat CBC patients with significant medical co-morbidities minimally invasively.

Status

CONFERENCE ABSTRACT

Institution

(Angell, Winship, Ogan) Department of Urology, Emory University, Atlanta, United States

(Martin) Department of Radiology, Emory Univeristy, Atlanta, United States

(Healy) Department of Urology, Thomas Jefferson University, Philadelphia, United States

Publisher

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758.

Flexible ureteroscopy with laser lithotripsy for renal stones larger than 20mm.

Kato Y., Iha K., Kudo D., Yamauchi T., Miura H.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012.

Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A152), 2012. Date of

Publication: September 2012.

[Conference Abstract]

AN: 70875971

OBJECTIVE: Percutaneous nephrolithotomy (PCNL) is the firstline recommended treatment for patients with renal stones larger than 20mm. But PCNL is more invasive methods and complication rate is higher. Flexible ureteroscopy with holmium laser lithotripsy (f-URS) has increased widely due to recent flexible ureteroscopes facilitating approach to the renal stone. We present our experiences with f-URS for renal stones, and determine the efficacy of URS as an alternative to PCNL.

METHOD(S): Between January 2007 and May 2011, of 1295 procedure of URS, 173 patients with renal stones underwent f-URS. We used a Storz Flex-X2 flexible scope with a Holmium:YAG laser and a 14- or 16-Fr ureteral access sheath. Stone fragments were retrieved by nitinol basket. Stone-free status was defined as no residual stone or less than 2mm fragments, based on ultrasonography, intravenous pyelography, or computed tomography. Failure of f-URS was defined as residual fragments larger than 2mm or additional treatment of PCNL.

RESULT(S): The average number of procedures was 1.18. The average time of operation was 48.5 minutes. Overall stone free rate was 83.8% (145/173 cases). The stone free rate in patients with a stone size of below 20mm, 20 to 30mm and over 30mm was 93.8%, 80.8% and 50.0%, respectively. In logistic regression analysis, stone size of larger than 30mm was significant risk factor for failure of f-URS ($p < 0.01$, odds ration: 7.17).

CONCLUSION(S): Our findings suggest that f-URS represents a favorable option for selected patients with renal stones, especially below 30mm in size.

Status

CONFERENCE ABSTRACT

Institution

(Kato, Iha, Kudo, Yamauchi, Miura) Department of Urology, Hachinohe Heiwa Hospital, Hachinohe, Japan

Publisher

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759.

Stone biochemical composition but without a stone to analyse.

Ray E.R., Goldstraw M., Longhorn S., Philp T., Choong S., Rumsby G., Smith D.

Embase

Journal of Endourology. Conference: 30th World Congress of Endourology and SWL, WCE 2012. Istanbul Turkey. Conference Publication: (var.pagings). 26(SUPPL. 1) (pp A9), 2012. Date of Publication: September 2012.

[Conference Abstract]

AN: 70875590

OBJECTIVE: The EAU recommend stone biochemical analysis in all patients. However there is often no stone specimen to analyse: basketing during ureteroscopy is not always safe or not routinely practiced. In this study we aimed to assess whether biochemical stone composition can be determined from stone dust obtained during laser treatment.

METHOD(S): From Jan 2010 to April 2012 paired samples of stone and urine/irrigant containing stone dust aspirated through a flexible or rigid ureteroscope during stone Holmium lasering, were taken. Both were analysed by Fourier transform infrared spectroscopy (FTIR) for biochemical composition.

RESULT(S): 52 pairs of dust specimens and stone were analysed by FTIR. 30/52 (58%) dust specimens were sufficient for FTIR. In 27/30 (90%) the predominant dust biochemical composition matched the stone composition: Uric acid 7/7 (100%); Calcium phosphate 6/7 (86%); Calcium oxalate 14/16 (88%). In 3/30 (10%) the predominant dust biochemical composition did not match the stone composition. Of the three "mismatched" cases: two mixed stones differed only in the relative proportions of each constituent; only one "pure" calcium phosphate stone gave a misleading result as the dust also revealed 61% calcium oxalate.

CONCLUSION(S): It was possible to determine biochemical stone composition from dust obtained at lasering of stone in 90% of cases (provided an adequate specimen could be obtained). Although standardisation of a reliable collection technique is needed, this demonstrates a successful "proof of principle", and may offer an option when a stone specimen cannot be retrieved ureteroscopically.

Status

CONFERENCE ABSTRACT

Institution

(Ray, Goldstraw, Longhorn, Philp, Choong, Smith) Endourology and stone unit, University College Hospital, London, United Kingdom (Rumsby) Department of biochemistry, University College Hospital, London, United Kingdom

Publisher

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Year of Publication

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760.

Evaluation of innovative techniques for ureterorenoscopy.

Rawandale A.V., Kurane C.S., Patni L.G., Sude N., Patil P.A.

Embase

European Urology, Supplements. Conference: 27th Annual Congress of the European Association of Urology, EAU. Paris France. Conference Publication: (var.pagings). 11(1) (pp e488-e488a), 2012. Date of Publication: February 2012.

[Conference Abstract]

AN: 70863274

INTRODUCTION & OBJECTIVES: We describe and evaluate three novel maneuvers namely the "Fiber Tow", "Scope shake" and "Jet evacuation techniques", to retrieve stone fragments during ureteroscopy MATERIAL & METHODS: The techniques were devised at the Institute of Urology, Dhule and evaluated for fragment retrieval in 47 consecutive patients undergoing ureteroscopy for stone disease. Each technique was employed during the procedure and its success / failure recorded. If all the techniques proved ineffective then the basket was resorted to. Reverse Trendelenberg position, pre-technique hydration and intravenous diuretic were used to aid the techniques The poster describes each technique in detail.

RESULT(S): The Fiber tow, Scope shake and Jet evacuation were successfully used in 18, 14 and 15 patients respectively. The techniques alone or in combination were successful in a total of 35 patients and stone basketing could be avoided successfully. In 12 patients the basket had to be resorted to. The techniques could be easily performed in capacious ureters (eg presented ureters). There were no intra and post operative complications related to techniques Patient demographics for Fiber tow, Scope shake and Jet evacuation: (Table Presented)

CONCLUSION(S): The "Fiber tow, Scope shake and Jet evacuation" techniques allow fast and safe manipulations of stone fragments during ureteroscopy. They are cost effective, save time, and are easily reproducible. There appeared to be no complication related to the techniques. Basket use with its potential complications can be prevented by use of these techniques.

Status

CONFERENCE ABSTRACT

Institution

(Rawandale, Kurane, Patni, Sude, Patil) Institute of Urology, Dept. of Urology, Dhule, India

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761.

Assessment of efficiency and safety of retrograde contact electropulse lithotripsy: Simple pilot multicenter study.

Boshchenko V.S., Gudkov A.V., Afonin V.Y., Petlin A.V.

Embase

European Urology, Supplements. Conference: 27th Annual Congress of the European Association of Urology, EAU. Paris France. Conference Publication: (var.pagings). 11(1) (pp e496-e496a), 2012. Date of Publication: February 2012.

[Conference Abstract]

AN: 70862771

INTRODUCTION & OBJECTIVES: A new method for contact shattering of urinary stones based on transmission of nanosecond (102x103) electric pulses directly to the stones has been recently developed and patented. We have established earlier that electric pulses of 0.1-1.0 J are safe for dog ureter and urinary bladder wall even at direct contact with mucosa and cause microfocal reversible morphological changes usually limited to the muscular layer. The purpose of our pilot multicenter study was to assess clinical efficiency and safety of retrograde electropulse contact lithotripsy (EPCLT) in patients with urinary stones of various localizations. **MATERIAL & METHODS:** In 2006-2010 the study was carried out in three medical centres and included 879 consecutive patients (pts, 472 men, 407 women, mean age 51+/-27 years) with renal, ureteropelvic segment (UPS), ureteral and urinary bladder stones. The pts had one or more of the following symptoms: renal colic, urine outflow abnormalities, renal dysfunction, and no spontaneous passing of the stone. Group I included 54 pts (6%) with renal and UPS stones, Group II - 799 pts (91%) with ureteral stones, Group III - 26 pts (3%) with urinary bladder stones. **Method(s):** Under phlebonarcosis or peridural anaesthesia the flexible probe of the electropulse lithotripter "Urolit- 105M" (Lithotech Medical, Israel; MedLine, LLC, Russia) was inserted through the operating channel of the flexible ureteroscope placed retrogradely into the stone site. Probes of 2.7 Fr, 3.6 Fr and 4.8 Fr in diameter were used for shattering the stones in Groups I, II and III, respectively. The N-Trap filter or the N-Compass basket was used for fixation of the stone. The direct contact of the probe tip with the stone was achieved and single or pair pulses with the energy of 0.8-1.0 J were transmitted. The ureteral catheter or stent was placed after EPCLT for 2-14 days.

RESULT(S): EP-CLT was technically feasible in all pts. Initial free-stone rate was 89.7%. Ureterolithotomy due to perforation of the ureter was required in 0.8% cases. In 9.5% cases the repeated EP-CLT or lithoextraction was necessary for removal of the fragments which migrated to the renal pelvis (5.3%), impacted into the neck of the urinary bladder (0.1%) or were not initially completely shattered (4.1%). Summary (initial and secondary) free-stone rate after two EP-CLT procedures was 96%: 100% in Group I, 96% in Group II and 89% in Group III. The rate of ureter perforation due to ureteropyeloscopy and probe movement during lithotripsy was 2.1%; however, the stone was shattered by EP-CLT in the majority of pts (1.3% of total number) despite perforation, and open surgery was required in 0.8% cases only. Perforation rate decreased with our training, and was 0.3% in the last 300 pts.

CONCLUSION(S): Retrograde electropulse contact lithotripsy is an effective and safe method for treatment of patients with urinary stones of various localizations.

Status

CONFERENCE ABSTRACT

Institution

(Boshchenko, Gudkov) Siberian State Medical University, Dept. of Urology, Tomsk, Russian Federation (Afonin) Medical Hospital No. 2, Dept. of Urology, Tomsk, Russian Federation (Petlin) Military Medical Hospital, Dept. of Urology, Tomsk, Russian Federation

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762.

Stone biochemical composition but without a stone to analyse.

Ray R., Goldstraw M., Longhorn S., Philp T., Choong S., Rumsby G., Smith R.D.

Embase

British Journal of Medical and Surgical Urology. Conference: BAUS Section of Endourology Annual Meeting 2012. Birmingham United Kingdom. Conference Publication: (var.pagings). 5(3) (pp 143), 2012. Date of Publication: May 2012.

[Conference Abstract]

AN: 70824804

Introduction: Knowledge of stone biochemistry is important for the assessment of recurrent stone formers. However, stone basketing during ureteroscopy is not always feasible or routinely practiced by all urologists. In this pilot study we aimed to assess whether stone composition can be determined from stone dust obtained during laser treatment.

Patients and Methods: Urine/irrigant containing dust was aspirated through the ureteroscope during/ after stone lasering, and a stone fragment also retrieved. Biochemical analysis of stone and dried, powdered material was carried out by Fourier transform infrared spectroscopy.

Result(s): A dust specimen sufficient for biochemical analysis was obtained from 23/40 (58%) of procedures. Of these, the predominant constituent was consistent with the stone biochemistry in 20/23 (87%) of cases. Two of the three "mismatched" cases were mixed calcium oxalate/calcium phosphate stones, and differed only in the relative proportions of each constituent. The only case that gave a misleading result was "pure" calcium phosphate stone in which the stone dust had also revealed 61% calcium oxalate.

Conclusion(s): It was possible to determine biochemical stone composition from dust obtained at lasering of stone in more than 85% of cases (provided an adequate specimen could be obtained), representing half of all procedures. Although standardisation of a reliable collection technique is needed, this demonstrates a successful "proof of principle", and may offer an option when a stone specimen cannot be retrieved ureteroscopically.

Status

CONFERENCE ABSTRACT

Institution

(Ray, Goldstraw, Longhorn, Philp, Choong, Rumsby, Smith) University College Hospital, London, United Kingdom

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763.

The endourological treatment of renal matrix stones.

Beltrami P., Ruggera L., Guttilla A., Iannetti A., Gigli F., Zattoni F.

Embase

Nephrology Dialysis Transplantation. Conference: 49th ERA-EDTA Congress. Paris France.

Conference Publication: (var.pagings). 27(SUPPL. 2) (pp ii181), 2012. Date of Publication: May 2012.

[Conference Abstract]

AN: 70765826

Introduction and Aims: Renal matrix stones - also known as fibrinomas, colloid calculi or albumin calculi - are a rare form of calculi. In contrast to the normally brittle calcium stones, they are soft, pliable and amorphous since the matrix component accounts for approximately 65% of their dry weight instead of the 2.5%. In most cases, conventional radiologic techniques are unable to make a correct diagnosis of renal matrix stones. Also, intravenous urography (IVU) does not always help distinguish between matrix stones and other filling defects, while computer tomography (CT) is more reliable in diagnosing this particular type of calculi. However, an unquestionable diagnosis is usually made at surgery. To the best of our knowledge, up to now 60 cases have been reported. All patients were treated with surgical approach or, since 1990, with percutaneous nephrolithotomy (PCNL). We report our experience with the endourological treatment of this relatively rare entity.

Method(s): We treated 9 female patients (mean age 45.2 years). Four patients complained of flank pain; in three other patients the diagnosis was made after radiological investigations for urinary tract infection (UTI) and for asymptomatic bacteriuria in the last two cases. In 3 patients the stones were localized in the renal pelvis; in 1 case in the pelvis and upper calyx; in three cases the calculus occupied all the collecting system (staghorn stone); and only in one case did we find multiple stones in different calyces. We used PCNL with a single access through a lower calyx. The matrix stones were aspirated or removed with forceps and for the hard component ultrasound lithotripsy was employed. In the retrograde approach with ureteroscope (Retrograde Intra Renal Surgery: RIRS), either semirigid or flexible instruments were employed and the matrix component was evacuated with either forceps or basket, or with an aspirator directly connected to the instrument. Holmium laser was used to fragment the calcareous component or to cut the matrix material. Shock wave lithotripsy (SWL) was used to treat any residual fragment of hard component.

Result(s): The first line treatment in 6 patients was PCNL with complete clearance in a single session. One patient was treated with RIRS and SWL of residual fragments; an additional patient with RIRS and with PCNL since the retrograde approach had not been able to achieve the complete removal of a huge stone. In this patient, the retrograde approach was also indicated to establish the diagnosis of a suspicious large filling defect in collecting system. A 50 years old patient required a multidisciplinary approach with PCNL and multiple RIRS because of early

stone relapses and urinary infection caused by *Proteus Mirabilis*. At the follow-up all patients are stone free.

Conclusion(s): At the present, the endourological approach is the first choice treatment for matrix stones. PCNL has been confirmed as the first option, while RIRS, by confirming the suspected diagnosis and being minimally invasive, may be employed to treat either lower size stones or stones at high risk of recurrence. An antibiotic prophylaxis to avoid asymptomatic bacteriuria and UTI, and a close follow-up, are suggested in these patients, in order to reduce the risk of recurrence. An accurate counselling describing advantages and disadvantages of all endourological techniques is also mandatory.

Status

CONFERENCE ABSTRACT

Institution

(Beltrami, Guttilla, Iannetti, Zattoni, Gigli, Zattoni) Urology Clinic, University of Padova, Padova, Italy (Ruggera) Department of Urology, S. Maria Degli Angeli Hospital, Pordenone, Italy

Publisher

Oxford University Press

Year of Publication

2012

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764.

Stone biochemical composition but without a stone to analyse.

Ray E.R., Goldstraw M., Longhorn S., Choong S., Philp T., Rumsby G., Smith R.D.

Embase

BJU International. Conference: 2012 Annual Scientific Meeting of the British Association of Urological Surgeons. Glasgow United Kingdom. Conference Publication: (var.pagings).

109(SUPPL. 7) (pp 30), 2012. Date of Publication: June 2012.

[Conference Abstract]

AN: 70762453

Introduction: Knowledge of stone biochemistry is important for the assessment of recurrent stone formers. However, stone basketing during ureteroscopy is not always feasible or routinely practiced. In this pilot study we aimed to assess whether stone composition can be determined from stone dust obtained during laser treatment.

Patients and Methods: Urine/irrigant containing dust was aspirated through the ureteroscope during/after stone lasering, and a stone fragment was also retrieved, in 32 patients. Biochemical analysis of stone and dried, powdered material was carried out by Fourier transform infrared spectroscopy.

Result(s): The dust specimen was sufficient for biochemical analysis in 17/33 (52%) of procedures. Of these, the predominant biochemical constituent was consistent with the definitive stone biochemistry in 82% of cases (14/17 of analyzable dust specimens). Two of the three 'mismatched' cases were mixed calcium oxalate/calcium phosphate stones, and differed only in the relative proportions of each constituent. The only case that gave a misleading result was 'pure' calcium phosphate stone in which the stone dust had also revealed 39% calcium oxalate.

Conclusion(s): It was possible to accurately determine biochemical stone composition from dust obtained at lasering of stone in more than 80% of cases (provided an adequate specimen could be obtained), representing 42% of procedures overall. Although work is required to standardise a reliable technique for specimen collection, this demonstrates a successful 'proof of principle', and may offer a useful option when a stone specimen cannot be retrieved ureteroscopically for any reason.

Status

CONFERENCE ABSTRACT

Institution

(Ray, Goldstraw, Longhorn, Choong, Philp, Rumsby, Smith) University College Hospital, London, United Kingdom

Publisher

Blackwell Publishing Ltd

Year of Publication

2012

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765.

Incidental renal stones in potential live kidney donors: Prevalence, assessment and donation including the role of ex-vivo ureteroscopy.

Wong K.A., Bultitude M., Thomas K., Glass J., Koffman G., Silas L., Rottenberg G., Rachael H., Olsburgh J.

Embase

American Journal of Transplantation. Conference: 2012 American Transplant Congress. Boston, MA United States. Conference Publication: (var.pagings). 12(SUPPL. 3) (pp 153), 2012. Date of Publication: May 2012.

[Conference Abstract]

AN: 70746372

Introduction: Donors with stones found incidentally on CT during donor assessment are now considered extended criteria donors. We evaluated the prevalence of asymptomatic renal stones in our potential donor population and assessed the safety and success of using ex-vivo ureteroscopy (ExURS) to remove stones from explanted donor kidneys prior to donation.

Method(s): A retrospective analysis of 377 CT angiograms of potential kidney donors between October 2004 and May 2007 was carried out to assess the prevalence of asymptomatic renal stones. Between October 2005 and October 2011, kidneys from suitable donors underwent ExURS and stones were removed with basket extraction or fragmented with Holmium laser on bench prior to transplantation. Donors were followed with yearly ultrasound scan of the remaining kidney in addition to standard follow-up protocol.

Result(s): Review of 377 CT angiograms showed a 5% prevalence of asymptomatic renal stones. From 55 potential stone bearing donors, 19 proceeded to donation. Three kidneys were transplanted with stones in-situ, all 2mm or less. 16 suitable donors proceeded with ExURS. One failed due to a narrow ureter. In nine, stones were removed; four with basket, four fragmented with laser and one employed both laser fragmentation and basket retrieval. Stones ranged from 2 - 12 mm. One submucosal stone was seen and left in-situ and in five patients, no stones were seen in the collecting system. There were no early or late allograft stone related complications. No donor has had a stone recurrence in the solitary remaining kidney including eight with greater than one-year follow-up where no stones were seen on annual ultrasound (mean 25+/-5.1 months).

Conclusion(s): Asymptomatic renal stones are present in 5% of our donors. Where no absolute contraindication exists, kidney donation should be considered in this group. 19 extra kidney transplants were made possible with this strategy. ExURS can be safely used to remove stones in these kidneys prior to transplantation, without the risk of subjecting the donor to an additional stone-removing procedure.

Status

CONFERENCE ABSTRACT

Institution

(Wong, Bultitude, Thomas, Glass) Department of Urology, Guy's and St. Thomas' NHS Foundation Trust, London, United Kingdom (Koffman, Rottenberg, Rachael) Department of Renal Medicine and Transplantation, Guy's and St. Thomas' NHS Foundation Trust, London, United Kingdom
(Silas) Department of Radiology, Guy's and St. Thomas' NHS Foundation Trust, London, United Kingdom

Publisher

Blackwell Publishing Ltd

Year of Publication

2012

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766.

In vitro comparison of prototype magnetic tool with conventional nitinol basket for ureteroscopic retrieval of stone fragments rendered paramagnetic with iron-oxide microparticles.

Tan Y., Faddegon S., McLeroy S., Olweny E., Park S., Fernandez R., Beardsley H., Pearle M., Cadeddu J.

Embase

Journal of Urology. Conference: 2012 Annual Meeting of the American Urological Association, AUA. Atlanta, GA United States. Conference Publication: (var.pagings). 187(4 SUPPL. 1) (pp e857-e858), 2012. Date of Publication: April 2012.

[Conference Abstract]

AN: 70721819

INTRODUCTION AND OBJECTIVES: We developed a prototype magnetic tool for ureteroscopic extraction of magnetized stone particles and compared its efficiency of retrieval of magnetized calcium oxalate monohydrate (COM) stone particles with a conventional nitinol basket using a bench-top ureteroscopic simulator.

METHOD(S): Iron oxide microparticles were successfully bound to human COM stones in sizes of 1-1.5mm, 1.5-2mm and 2-2.5mm. Several coated fragments of each size were implanted into the collecting system of a bench-top ureteroscopic simulator, and timed stone extractions (5 minute trials) were performed for each fragment size using either a back-loaded 8F magnetic tool mounted on a 0.038-inch guidewire or a conventional basket. Median number of fragments retrieved per timed trial was compared for the magnetic tool versus the basket using the Mann-Whitney U test.

RESULT(S): For 1-1.5mm fragments, the median number of fragments retrieved within 5 min was significantly higher for the prototype magnetic tool versus the nitinol basket (9.5 versus 3.5, $p=0.03$). For 1.5-2mm, the magnetic tool was more efficient but the difference in the number of fragments retrieved was not statistically significant (9.5 versus 4.5, $p=0.19$). For 2-2.5mm fragments, there was no difference between instruments in the number of fragments retrieved (6 in each group, $p=1.0$).

CONCLUSION(S): The use of a prototype magnetic tool improved the efficiency of retrieval of stone particles rendered paramagnetic measuring less than 2mm in size but showed no advantage for larger fragments. This system has the potential to reduce the number of small retained fragments after ureteroscopic lithotripsy.

Status

CONFERENCE ABSTRACT

Institution

(Tan, Faddegon, Olweny, Park, Pearle, Cadeddu) DallasTXUnited States (McLeroy)

RichardsonTXUnited States

(Fernandez, Beardsley) ArlingtonTXUnited States

Publisher

Elsevier Inc.

Year of Publication

2012

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767.

Percutaneous endoscopic laser lithotripsy in orthotopic liver transplant patients for complex biliary calculi.

Angell J., Winship B., Healy K., Martin L., Ogan K.

Embase

Journal of Urology. Conference: 2012 Annual Meeting of the American Urological Association, AUA. Atlanta, GA United States. Conference Publication: (var.pagings). 187(4 SUPPL. 1) (pp e780), 2012. Date of Publication: April 2012.

[Conference Abstract]

AN: 70721628

INTRODUCTION AND OBJECTIVES: Holmium laser lithotripsy has revolutionized the treatment of urolithiasis in the modern era. Previous work has shown its use in biliary tract calculi as well. We sought to evaluate the use of laser lithotripsy in complex biliary stones in patients who have undergone orthotopic liver transplantation (OLT).

METHOD(S): A retrospective review of all OLT patients who underwent percutaneous endoscopic biliary laser lithotripsy (PEBLL) for complex biliary calculi (n=6) from 2005 to 2011 was conducted at our institution. All patients had previously failed treatment with either percutaneous transhepatic cholangiography (PTHC) or endoscopic retrograde cholangiopancreatography (ERCP). All patients had drained biliary systems prior to PEBLL with a percutaneous transhepatic biliary catheter or T-Tube placed by Interventional Radiology. PEBLL was achieved via the established transhepatic tracts with flexible endoscopes. Stones were fragmented with the holmium laser with substantial fragments either manipulated into the jejunal limb of the hepatojejunostomy or removed with a nitinol basket. Stone clearance was verified with intra-operative and post-operative cholangiography.

RESULT(S): Mean patient age was 56.6 years old (32-67 years old). Mean age-adjusted patient Charlson co-morbidity index (CCI) was 8.4. Mean total stone burden was 3cm (1-5cm). 5 patients

underwent 6 procedures (PEBLL) with stones being found in the common bile duct (CBD) in 3 patients, and in the hepatic ducts in 5 patients. 3 patients had both CBD and hepatic ductal stones. Only one patient required a second PEBLL to clear stones, the remainder of the cohort was cleared with one procedure. No peri-operative complications were encountered. Mean length of stay was 2.5 days. Mean follow up cholangiography was 10 days; all patients were stone free on post-operative imaging. All patients had their biliary drainage tubes removed. At mean follow up of 10.1 months all patients remained stone free.

CONCLUSION(S): PEBLL is an alternative treatment modality for complex biliary stones in the OLT patient cohort where other standard treatments have failed. This technique is safe and efficacious, and provides an opportunity to treat complex biliary stone patients with significant medical co-morbidities via a minimally invasive approach.

Status

CONFERENCE ABSTRACT

Institution

(Angell, Winship, Martin, Ogan) AtlantaGAUnited States (Healy) PhiladelphiaPAUnited States

Publisher

Elsevier Inc.

Year of Publication

2012

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768.

Equipment use during ureteroscopy: Is there a difference between tertiary care centers and community hospitals?.

Friedlander J., Xu B., Okhunov Z., Sison C., Duty B., Waingankar N., Okeke Z., Smith A.

Embase

Journal of Urology. Conference: 2012 Annual Meeting of the American Urological Association, AUA. Atlanta, GA United States. Conference Publication: (var.pagings). 187(4 SUPPL. 1) (pp e742), 2012. Date of Publication: April 2012.

[Conference Abstract]

AN: 70721472

INTRODUCTION AND OBJECTIVES: We sought to investigate whether there exists a difference in disposable equipment usage during ureteroscopy between tertiary (TH) and community hospitals (CH).

METHOD(S): We performed a retrospective review of ureteroscopy procedures for calculus disease at two tertiary care centers and two community hospitals from January through October 2010. Cases were identified by procedural code for ureteral calculus. Variables under examination included patient demographics, surgeon training level, hospital setting, clinical stone characteristics, instruments and materials used, and clinical outcomes. Cost data for disposable equipment was obtained from health system billing records. Mann-Whitney and Chi-square tests were used to analyze continuous and categorical variables, respectively. Multivariable regression analysis was performed.

RESULT(S): Of the 318 procedures evaluated, 80.8% (257) were performed at TH versus 19.2% (61) performed at CH. There was no difference in mean stone size, procedures treating more than 1 stone, mean operating room time, use of more than 1 wire during a procedure, or mean disposable equipment cost (TH 861.30 vs CH 802.30, $p=0.91$) between the two groups.

Significant differences were found between TH and CH for Holmium laser use (65.4% vs 49.2%, $p=0.03$), balloon dilator use (31.5% vs 73.8%, $p<0.0001$), ureteral access sheath use (27.6% vs 4.9%, $p<0.0001$), dual lumen catheter use (22.2% vs 1.6%, $p<0.0001$), use of stone baskets (95.7% vs 86.9%, $p=0.015$), and the presence of a stent in place prior to definitive ureteroscopy (26.9% vs 14.8%, $p=0.049$). The stone-free rate for TH was 91.4% versus 86.9% at CH, this was not statistically significant ($p=0.32$). Multivariable regression analysis revealed that stone size ($p<0.001$) and the presence of a stent at the time of ureteroscopy ($p=0.0006$) were significantly associated with cost of disposable equipment charged.

CONCLUSION(S): We found no difference in cost of disposable equipment used during ureteroscopy between TH and CH. TH demonstrated more frequent use of the Holmium laser, ureteral access sheaths, dual lumen catheters, and stone baskets, whereas CH demonstrated more frequent use of ureteral balloon dilation. Stone-free status was greater at TH than CH; however, this did not reach statistical significance. (Table presented).

Status

CONFERENCE ABSTRACT

Institution

(Friedlander, Okhunov, Duty, Waingankar, Okeke, Smith) New Hyde ParkNYUnited States (Xu)
ShanghaiChina

(Sison) ManhassetNYUnited States

Publisher

Elsevier Inc.

Year of Publication

2012

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769.

Uronet™: A novel device for managing patients with bladder and renal stones.

Caldwell B., Sheynkin Y., Schulsinger D.

Embase

Journal of Urology. Conference: 2012 Annual Meeting of the American Urological Association, AUA. Atlanta, GA United States. Conference Publication: (var.pagings). 187(4 SUPPL. 1) (pp e689), 2012. Date of Publication: April 2012.

[Conference Abstract]

AN: 70721207

INTRODUCTION AND OBJECTIVES: For patients treated for large bladder and renal stones, open lithotomy, percutaneous approach and transurethral cystolitholapaxy have been the standard of care. Complete removal of these stones is paramount to eliminate stone burden and to help prevent stone recurrence. We describe our experience with a new device for evacuation of large bladder stones by percutaneous cystolitholapaxy and staghorn renal stone(s) removal by percutaneous nephrolithotomy (PCNL).

METHOD(S): We treated 20 patients who presented with bladder stones (10) and/or renal stones (12). The mean stone burden was 6 cm and 3 cm for bladder and renal stones, respectively. The mean age of patients was 56 years with male predominance of 9:1 in the bladder stone group

and parity of gender with 5:5 ratio for renal stones. Extraction of stones following cystoscopy/laser lithotripsy (7), percutaneous cystolithapaxy (2) or stone manipulation (1) of bladder stones and percutaneous nephrolithotomy (12) for renal stones were performed with the UroNet™ (US Urology, Cleveland, Ohio). Stones were extracted using the 5.4F or 9.6F UroNet™ mesh (3.0cm x 1.25cm) device for percutaneous cystolithapaxy or PCNL, respectively.

RESULT(S): The smaller UroNet™ device was ideal for removal of bladder stones and the larger device successfully removed stones within the kidney. The UroNet™ was ideal for removal of stones between 2-10mm in size and the softer, sludge-like stones. In one patient undergoing a PCNL procedure, extraction of 108 renal stones was completed with 25 passages of the UroNet™. Smaller particles were extracted by aspiration techniques. All patients had successful treatment of stones without any complications. Stone composition included Calcium Oxalate (9), Calcium Phosphate (5), Struvite (2), Uric Acid Stones (3) and mixed type stones (3).

CONCLUSION(S): The UroNet™ is a safe, reliable and efficient disposable device to remove multiple stone fragments with each passage of the device. The limited passage of instruments helps minimize trauma to the bladder, urethra and kidney during cystolithapaxy and PCNL procedures. More efficient stone extraction also decreased operative and anesthesia times. Prospective studies are currently underway to compare classic stone baskets to the UroNet™.

Status

CONFERENCE ABSTRACT

Institution

(Caldwell, Sheynkin, Schulsinger) Stony BrookNYUnited States

Publisher

Elsevier Inc.

Year of Publication

2012

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Prevention of stone migration with the accordion during endoscopic ureteral lithotripsy.

Pagnani C.J., El Akkad M., Bagley D.H.

Embase

Journal of Endourology. 26(5) (pp 484-488), 2012. Date of Publication: 01 May 2012.

[Article]

AN: 364716368

Background and Purpose: Endoscopic lithotripsy is often prolonged secondary to the retrograde migration of calculous fragments. Various balloons, baskets, and other devices have been used to prevent this migration. Our purpose is to analyze the effect of the Accordion on stone migration and overall efficiency during lithotripsy.

Patients and Methods: We prospectively evaluated 21 patients with a total of 23 distal ureteral stones. Patients underwent lithotripsy using an endoscopic impact lithotripter. The Accordion was randomly used in 11 of these 21 patients. Data were collected regarding stone migration, stone size, stone ablation, ureteral clearing, and lengths of time for various stages of each procedure.

Result(s): Patients who were treated with the Accordion device experienced significantly less retrograde migration during fragmentation ($P=0.0064$). When stone volume was taken into account (but not on a per stone basis), ablation and ureteral clearing were also expedited, and fewer lithotripter "hits" and basket "sweeps" were needed.

Conclusion(s): The Accordion device is effective in preventing the migration of stone fragments during endoscopic ureteral lithotripsy. Our data suggest that this device may also increase efficiency of the fragmentation and clearance of ureteral calculi. © Copyright 2012, Mary Ann Liebert, Inc.

PMC Identifier

22192096 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=22192096>]

Status

Embase

Institution

(Pagnani, Bagley) Department of Urology, Thomas Jefferson University, College Building, 1025 Walnut Street, Philadelphia, PA 19107, United States (El Akkad) Department of Urology, Assuit University Hospital, Assuit, Egypt

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2012

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771.

Ureteroscopic lithotripsy using holmium laser for 187 patients with proximal ureteral stones.

Liu D.-Y., He H.-C., Wang J., Tang Q., Zhou Y.-F., Wang M.-W., Chu C.-L., Zhang C.-Y., Zhu Y., Zhou W.-L., Shen Z.-J.

Embase

Chinese Medical Journal. 125(9) (pp 1542-1546), 2012. Date of Publication: 2012.

[Article]

AN: 365145642

Background Improving the success rate of ureteroscopic lithotripsy for proximal ureteral stones is the hot issue in this field. Here we reported our experience on the treatment of proximal ureteral stones. Methods From 2005 to 2010, 187 consecutive patients with proximal ureteral stones who underwent ureteroscopic lithotripsy were enrolled. The initial 52 patients treated by semi-rigid ureteroscope alone were classified as group 1. The subsequent 135 patients treated by semi-rigid ureteroscope with the aid of stone basket and flexible ureteroscope were classified as group 2. Results In group 1, the overall stone-free rate was 67.3%. By a single procedure of ureteroscopic lithotripsy using a semi-rigid instrument, patients with ureteral stones below the 4th lumbar vertebra level achieved 91.7% stone-free rate, which was only 50% in patients with stones above the 4th lumbar vertebra level. Conversion to open surgery occurred in two patients since ureteral perforation was observed. In group 2, the stone-free rate achieved 93.2% with the aid of an N-Trap basket, which was significantly higher than that of patients without the aid of the basket (51.6%). Flexible ureteroscope was subsequently used in patients with fragment migration, thus making the overall success rate in group 2 increases to 97.0%. Conclusions Ureteroscopic lithotripsy is a safe and efficacious treatment for proximal ureteral stones. A single procedure of ureteroscopic lithotripsy using semi-rigid ureteroscope could achieve a satisfactory stone-free rate in patients with proximal ureteral stones below the 4th lumbar vertebra level. However, patients with ureteral stones above the 4th lumbar vertebra level experienced higher stone-

migration rate, which would decrease the success rate. Fortunately, the stone-free state could possibly be achieved with the aid of an N-trap basket and flexible ureteroscope.

Status

Embase

Institution

(Liu, Wang, Tang, Zhou, Zhu) Department of Urology, Punan Hospital, Shanghai 200125, China

(He, Wang, Chu, Zhang, Zhou, Shen) Department of Urology, Ruijin Hospital, Shanghai Jiao

Tong, University School of Medicine, Shanghai 200025, China

Publisher

Chinese Medical Association (42 Dongsixidajie, Beijing 100710, China)

Year of Publication

2012

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772.

Retrograde intrarenal surgery (RIRS). Technical complement for cases of acute lithiasis. Cirugia retrograda intrarrenal (CRIR). Complemento tecnico para casos con excesiva carga litiasica <Cirugia retrograda intrarrenal (CRIR). Complemento tecnico para casos con excesiva carga litiasica.>

Amon J.H., Cepeda M., Conde C., Alonso D., Gonzalez V., Martinez-Sagarra J.M.

Embase

Actas Urologicas Espanolas. 35(2) (pp 108-114), 2011. Date of Publication: February 2011.

[Article]

AN: 51257799

Introduction: Washing the renal cavities using minipercutaneous surgery shaft is an ideal technical procedure for retrograde intrarenal surgery (RIRS) when lithiasic fragmentation is

significant or if the anatomy of the renal cavities may obstruct the spontaneous elimination of fragments.

Material(s) and Method(s): we performed 37 RIRS on 35 patients with renal lithiasis (14 men, 21 women) with a mean age of 56 (range 33-72) years, divided into two groups in accordance with the size of their kidney stones. Group A, 23 patients with lithiasis <1.5 cm; Group B, 12 cases with lithiasis >1.5 cm. 28 patients had a single kidney stone and 7 had multiple stones. Approach: Flexible uretrorenoscopy, 7.5 Fr (Flex-X, Karl Storz) by means of a ureteral access sheath. Holmium laser lithotripsy (Calculase, Karl Storz) using 200 and 365 micrometer fibres. Fragment extraction with 1.7 Fr nitinol baskets (N-gage, Cook). In cases of significant fragmented stone burden, the renal cavities were washed with low-pressure fluid irrigation using a ureteral access sheath, which was collected together with the stone fragments carried by the "mini-perc" sheath (Ultrax-x 18Fr, Cook; Rusch, 14 Fr) placed under radiologic and endoscopic control at the level of the calyx-papilla selected for fragment drainage.

Result(s): the mean diameter for group A was 9.13 (range 5-13) mm and 20.25 (range 16-28) mm for group B. The overall mean operating time was 81 (range 30-160) min. Group A required 66.43 +/- 35.18 min. and group B 107.5 +/- 46.73 min. ($p = 0.006$). The rate of absence of stones immediately after surgery was 83.2%, 93.1% at 3 months (95.6% for A and 83.3% for B; $p = 0.217$). In no case was ureteral stenosis observed as a result of the use of ureteral access sheaths. In 7 group B patients (58.3%) with acute lithiasis and/or alteration in their pyelocaliceal anatomy, we performed active lavage of the renal cavities applying the aforementioned percutaneous technique. The mean post-surgery hospital stay was 2.1 (range 1-4) days. There were post-surgery complications (Clavien 1) in 7 patients (20%). Two patients required a second FURS.

Conclusion(s): RIRS can be effective treatment for renal lithiasis >1.5 cm. Lavage of the renal cavities helps to eliminate stone fragments, reducing the possibility of retreatment. © 2010 AEU.

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PMC Identifier

21292353 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=21292353>]

Institution

(Amon, Cepeda, Conde, Alonso, Gonzalez, Martinez-Sagarra) Servicio de Urologia, Hospital Rio Hortega, Valladolid, Spain

Publisher

Elsevier Ltd (Langford Lane, Kidlington, Oxford OX5 1GB, United Kingdom)

Year of Publication

2011

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773.

Accordion--Music to the endourologist.

Anjum F., Sellaturay S., Marsh H., Dickinson I., Sriprasad S.

Embase

British Journal of Medical and Surgical Urology. Conference: BAUS Section of Endourology Annual Meeting 2011. Aberdeen United Kingdom. Conference Publication: (var.pagings). 4(5) (pp 225), 2011. Date of Publication: September 2011.

[Conference Abstract]

AN: 70824823

Introduction: Management of upper ureteric stones with ureteroscopy and laser fragmentation can be tricky, especially if there is migration of fragments to the kidney, needing flexible ureteroscopic management. Stone immobilisation devices are cumbersome and are not satisfactory. We present our initial experiences with the novel PercSys Accordion [PA] stone management device. Method(s): The PA consists of its own introducer, an advanced microcatheter that features a proprietary film occlusion device with radio opaque markers. The device is introduced into the ureter through a cystoscope. There is a locking handle mechanism to manipulate the position of the occluding film. PA is placed beyond the stone under radiological guidance and deployed by pulling the inner guide wire. The occluding film takes a concertina configuration like an accordion, hence the name. Once deployed the PA prevents migration of stone which can be fragmented with laser or other devices. Once fragmentation is complete the device is trawled down removing residual fragments.

Result(s): The device was used in 20 radio opaque upper ureteric stone patients. Seven of these were non-stented. Mean stone size was 9mm [range 8-14 mm]. Two were impacted. Placement and deployment was successful in all cases. Stone fragmentation was performed using the holmium-YAG laser. Irrigation was kept at high flow and the vision was excellent. The mean laser time was 391 s (139-672).

Conclusion(s): The PA is satisfactory and avoids the need for additional procedures or baskets. We believe that this device will be an essential part of endourological armamentarium.

Status

CONFERENCE ABSTRACT

Institution

(Anjum, Sellaturay, Marsh, Dickinson, Sriprasad) Darent Valley Hospital, Darent Wood Road, Dartford, Kent DA2 8DA, United Kingdom

Publisher

Elsevier Ltd

Year of Publication

2011

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774.

Incidental renal calculi in potential live kidney donors: Prevalence, assessment and role of ex vivo ureteroscopy.

Wong K.A., Thomas K., Glass J., Smith N., Smith J., Rottenberg G., Hilton R., Olsburgh J.

Embase

British Journal of Medical and Surgical Urology. Conference: BAUS Section of Endourology Annual Meeting 2011. Aberdeen United Kingdom. Conference Publication: (var.pagings). 4(5) (pp 220), 2011. Date of Publication: September 2011.

[Conference Abstract]

AN: 70824814

Introduction: We evaluated the incidence of incidental asymptomatic nephrolithiasis in our potential donor population and assessed the safety and success of ex vivo ureteroscopy (ExURS) in removing stones from explanted donor kidneys.

Method(s): A retrospective analysis of 377 CT angiograms for potential kidney donors was carried out to assess the incidence of asymptomatic renal stones. Potential donors with stones were investigated with metabolic screening, EDTA GFR measurement and DMSA scan before proceeding to donation. Selected donors underwent ExURS and stones were removed with basket extraction or fragmented with Holmium laser. Donors were followed with yearly ultrasound scan of the remaining kidney.

Result(s): Review of 377 CT angiograms showed a 5% incidence of asymptomatic nephrolithiasis (n = 19). 9 suitable donors were selected to proceed to donation with bench ExURS. Six were successful; three removed with basket extraction and the remainder fragmented with laser. No stones were seen in two kidneys. One failed due to a narrow ureter. There was no post-operative allograft dysfunction or ureteric complications. At a mean follow-up of 474 days, there has been no recurrence of stone in either the donors' remaining kidney or the recipients' transplant kidney.

Conclusion(s): Asymptomatic renal calculi are present in 1 in 20 of our donors. Kidney donation should be considered in this group. ExURS can safely be used to render the kidney stone-free prior to transplantation.

Status

CONFERENCE ABSTRACT

Institution

(Wong, Thomas, Glass, Smith, Smith, Rottenberg, Hilton, Olsburgh) Guy's Hospital, Great Maze Road, London SE19RT, United Kingdom

Publisher

Elsevier Ltd

Year of Publication

2011

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775.

Robotic use of the flexible ureterorenoscopes for the treatment of kidney stones.

Saglam R., Kural A.R., Tokatli Z., Kabakci S., Koruk E.

Embase

Journal of Endourology. Conference: 29th World Congress of Endourology and SWL WCE 2011. Kyoto Japan. Conference Publication: (var.pagings). 25(SUPPL. 1) (pp A293), 2011. Date of Publication: November 2011.

[Conference Abstract]

AN: 70585560

We designed a novel robot which enables to use the commercially available ureterorenoscopes functions remotely. In this video we showed the effectivity and advantages of robotic flexible ureterorenoscopic treatment of the larger kidney stones with increased number of the patients. **Material and Method** We evaluated 21 patients with intra renal single stone, without ureteral obstruction. We used 7,5F Storz Flex- X2 Flexible Uretero Reno Scope (FURS). After initial rigid ureteroscopy and insertion of 35 cm access sheath, we introduced the FURS into the sheath manually and connected the FURS to the robot. We controlled the FURSs forward and backward movement, rotation and deflection of the tip and the movement of the laser fiber by a joystic remotely from a radiation free area. With the help of reset function the device is capable to reset all the movements and can take the neutral position easily. We dusted and fragmented the stones precisely, while seated, outside of the radiation zone.

RESULT(S): Mean stone size was 19mm (9-38mm). We successfully controlled all functions of the FURS remotely with robot and we could dusted/fragmented all of the stones. VAS was 9 for the movement, rotation and deflection of the FURS and it was 8 for the remote laser fiber movement. **Conclusion:** We confirmed that remote robotic control of the commercial flexible ureterorenoscopes provides the treatment for even larger kidney stones in a shorter time, with the advantages of recent development of the flexible ureterorenoscopes, while seated, outside of the radiation zone.

Status

CONFERENCE ABSTRACT

Institution

(Saglam) Medicana International Hospital, Department of Urology, Ankara, Turkey (Kural)

Acibadem Maslak Hospital, Department of Urology, Istanbul, Turkey

(Tokatli) 100. yil Hospital, Department of Urology, Ankara, Turkey

(Kabakci) Hacettepe Univercity, Department of Bioengineering, Ankara, Turkey

(Koruk) Elmed Co., Department of Research and Development, Turkey

Publisher

Mary Ann Liebert Inc.

Year of Publication

2011

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776.

Natural history of uric acid urolithiasis in the computed tomography era.

Park S., Kang K.

Embase

Journal of Endourology. Conference: 29th World Congress of Endourology and SWL WCE 2011. Kyoto Japan. Conference Publication: (var.pagings). 25(SUPPL. 1) (pp A272), 2011. Date of Publication: November 2011.

[Conference Abstract]

AN: 70585498

INTRODUCTION: The widespread use of computed tomography (CT) may lead to overtreatment of uric acid stones with surgery, as opposed to oral alkalinization. Our study aims to determine the natural history and contemporary treatment of uric acid stones, including how often patients undergo surgery as opposed to medical dissolution therapy; bilaterality, recurrence rate, and associated comorbidities.

METHOD(S): We retrospectively reviewed 1439 urinary stone analyses obtained at our institution from Jan/2008 until Dec/2010. 149 uric acid stones were identified, and patient demographics, associated comorbidities (gout, diabetes, etc.), location, size, multifocality, Hounsfield units, and intervention (medical versus surgical) were evaluated.

RESULT(S): The average age of uric acid stone formers was 58, and 68% were male. The average ureteral stone was 3.9x2.9mm whereas renal stones were 6x5.3mm. 65% of patients underwent ureteroscopy with laser/basketing, either primarily or after initial ureteral stenting for infection or acute renal failure. 12% underwent shockwave lithotripsy, 12% underwent alkalinization therapy alone and 7% underwent percutaneous nephrolithomy. 50% of patients had

hypertension, 29% had Diabetes and 21% had hypercholesterolemia. The average Hounsfield units was 413.

CONCLUSION(S): Uric acid stones represented 11% of our stone forming cohort. Common comorbid conditions include diabetes, hypertension and lipid disorders. Although Hounsfield units and urinary pH can lead to a correct diagnosis and alkalinization curative, over 50% patients in our cohort underwent a surgical procedure because they are older, and presented with evidence of infection and acute renal failure.

Status

CONFERENCE ABSTRACT

Institution

(Park) NorthShore University HealthSystem, Evanston, IL, United States (Kang) Rosalind Franklin University, School of Medicine, North Chicago, IL, United States

Publisher

Mary Ann Liebert Inc.

Year of Publication

2011

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777.

Introduction of the holmium:YAG laser for ureteroscopy: How an international collaboration improved the experience curve.

Ruiz L., Hyams E.S., Donderis R., Alvarado A., Perscky I., Matlaga B.

Embase

Journal of Endourology. Conference: 29th World Congress of Endourology and SWL WCE 2011. Kyoto Japan. Conference Publication: (var.pagings). 25(SUPPL. 1) (pp A269), 2011. Date of Publication: November 2011.

[Conference Abstract]

AN: 70585491

INTRODUCTION: Flexible ureteroscopy with Holmium:YAG laser lithotripsy has a known learning curve; although this laser is the safest flexible intracorporeal lithotrite, complications occur with greater frequency early in its adoption. Herein, we review the implementation of a didactic and practical curriculum to introduce the Holmium:YAG laser for flexible URS. Following the initial tutorial period, we assessed procedure outcomes and complications.

Method(s): A 15watt Holmium:YAG laser was introduced to Hospital Punta Pacifica, a newly developed hospital affiliated with Johns Hopkins Medicine International. We created a three-day curriculum including classroom-based lectures and live surgical experience. Lectures were designed to review laser properties and surgical applications; technical points emphasized included the "dusting" technique of laser lithotripsy rather than active fragment extraction. Live surgeries were performed as demonstrations and then as mentored procedures. The medical records of all patients undergoing Flex URS/Laser in the 12 months following this program were reviewed.

RESULT(S): A total of 32 Flex URS/Laser procedures were performed. Mean age was 43.0 years; there were 19 males and 13 females. Twenty-nine procedures were for the treatment of stone, and three were for incision of ureteral stricture. Five stones were located in the ureter, with the remainder in the kidney. All stones were accessed and fragmented with the laser, and no peri-operative or post-operative complications were encountered.

CONCLUSION(S): A focused curriculum can simplify the introduction of Flex URS/Laser and permit the rapid achievement of acceptable **RESULTS:** . An emphasis on limiting active fragment extraction may reduce the likelihood of ureteral injuries.

Status

CONFERENCE ABSTRACT

Institution

(Ruiz, Donderis, Alvarado, Perscky) Hospital Punta Pacifica, Panama City, Panama (Hyams, Matlaga) Brady Urological Institute, Johns Hopkins Hospital, United States

Publisher

Mary Ann Liebert Inc.

Year of Publication

2011

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Link to the External Link Resolver:

778.

Successful management using antegrade ureteroscopy of a ureteral stone patient after urinary diversion with sigmoid colon (Reddy Method).

Kanamaru S., Kamiyama Y., Makino Y., Soeda A., Ito N.

Embase

Journal of Endourology. Conference: 29th World Congress of Endourology and SWL WCE 2011. Kyoto Japan. Conference Publication: (var.pagings). 25(SUPPL. 1) (pp A260), 2011. Date of Publication: November 2011.

[Conference Abstract]

AN: 70585459

A 63-year-old man who received total cystectomy with sigmoid colon neobladder due to bladder and prostate cancer visited our hospital presening high fever and right CVA pain. We diagnosed an obstructive pyelonephritis due to ureteral stones. First of all we tried to drainage of the right kidney by retrograde catheterization, but failed because we could not find out the right ureteral orifice. Next we successfully performed a percutaneous nephrostomy and chemotherapy with antibiotics for several days. After he recovered we performed percutaneous nephro-ureterolithotripsy as follows.1; inserted a guide wire from the PNS catheter to ureter. 2; removed the PNS catheter and inserted a balloon dilator and a sheath. 3; performed nephrolithotripsy by a rigid nephroscope. 4; inserted a ureteral access sheath and fiber ureteroscopic lithotripsy by a basket catheter. 5; after ureteroscopy throughout a right ureter to ensure stone free, we inserted a double J catheter by antegrade.

Discussion(s): It is difficult to find out ureteral orifices in the neobladder, especially in the case of obstructive disease because unable to use an indigocarmine intra venous injection. On the other hand, it is easy to make percutaneous nephrostomy in the case of hydronephrosis and reach to the obstructive portion because of upper urinary hydroureter. We easily performed fiber ureteroscopy by antegrade and smoothly removed a ureteral stone by a basket catheter using the ureteral access sheath. We recommend using the ureteral access sheath not only retrograde fiber ureteroscopy but also antegrade approach.

Status

CONFERENCE ABSTRACT

Institution

(Kanamaru, Kamiyama, Makino, Soeda, Ito) Department of Urology, Nishi-Kobe Medical Center,
Kobe, Japan

Publisher

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Year of Publication

2011

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779.

Outcome of ureteroscopy for stone disease in patients with morbid obesity: RESULTS: from a
systematic review of literature.

Somani B.K., Kommu S.S., Cohen N., McClinto S.

Embase

Journal of Endourology. Conference: 29th World Congress of Endourology and SWL WCE 2011.

Kyoto Japan. Conference Publication: (var.pagings). 25(SUPPL. 1) (pp A182), 2011. Date of

Publication: November 2011.

[Conference Abstract]

AN: 70585198

INTRODUCTION: The management of urolithiasis in morbidly obese patients is difficult.

Modalities such as shock wave lithotripsy and PCNL can be difficult or impossible in these
patients due to problems with patient positioning, anatomical landmarks and increased skin to
stone distance. URSL may be the only/best treatment option.

Purpose(s): To conduct a systematic review of literature to look at the role of ureteroscopy for
stone management in morbidly obese patients.

Material(s) and Method(s): We searched MEDLINE, PubMed and the Cochrane Library from
January 1990 to June 2010 for RESULTS: of ureteroscopy and stone treatment in morbidly obese

patients. Inclusion criteria were all English language articles reporting on ureteroscopy in patients with morbid obesity. Data was extracted on the outcomes and complications.

RESULT(S): A total of 5 studies were identified during this period. One hundred and twenty patients (125 procedures) with morbid obesity underwent flexible ureteroscopy and stone treatment. The mode of fragmentation was pulse dye laser (n = 49), holmium laser (n = 52) and a combined modality including electrohydraulic lithotripsy and basket retrieval in others. The stone free rate was 81% (n = 98) after the first treatment and increased to 93% (n = 116) after the second treatment. Six patients (5%) had complications including post operative sepsis in 4 patients, pyelonephritis and ureteral perforation in one patient each.

Conclusion(s): Retrograde stone treatment using ureteroscopy and lasertripsy in morbidly obese patients can be safely performed with good stone clearance rates and a low complication rate.

Status

CONFERENCE ABSTRACT

Institution

(Somani, Cohen, Mcclinto) Department of Urology, Aberdeen Royal Infirmary, Aberdeen, United Kingdom (Kommu) Section of Laparoscopic and Robotic Surgery, Department of Urology, Frimley Park Hospitals NHS Foundation Trust, Surrey, United Kingdom

Publisher

Mary Ann Liebert Inc.

Year of Publication

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780.

Baskets, Ureteral access sheaths, And stents do not affect the stone free rate in Ureteroscopy.

Paterson R.F., Zavaglia B., Lange D., Zappavigna C., Teichman J., Matlaga B.R., Nunez R.N., Bruhn A., Altamar H.O., Humphreys M.R., Shah O., Miller N.L., Che B.H.

Embase

Journal of Endourology. Conference: 29th World Congress of Endourology and SWL WCE 2011. Kyoto Japan. Conference Publication: (var.pagings). 25(SUPPL. 1) (pp A181), 2011. Date of Publication: November 2011.

[Conference Abstract]

AN: 70585197

INTRODUCTION: and Objective: Shockwave lithotripsy may not be an option in obese patients. We determined the effectiveness of ureteroscopic laser lithotripsy in obese patients compared to controls.

Method(s): Patients who underwent ureteroscopic procedures for urolithiasis at four centres with fellowship-trained endourologists were retrospectively analyzed.

RESULT(S): The 292 patients included 163 obese (BMI > 30 kg/m²), 76 overweight (BMI = 25-30), and 53 normal weight controls (BMI < 25). There were significantly more patients in ASA categories 2, 3, and 4 in the overweight and obese groups. The rate of diabetes was significantly higher in the obese and overweight groups (P = 0.0240). The percentage of obese patients requiring flexible ureteroscopy (79%) was higher than in the other groups (P < 0.0001). Stone free rate (SFR) did not differ among groups. Flexible ureteroscopy was associated with a lower stone free rate on multivariate analysis (p = 0.034). There was no difference in SFRs of patients who required a ureteral access sheath, basket extraction, or received a post-operative stent. The complication rate did not differ between groups, although patients with an elevated BMI were less likely to have day surgery.

Conclusion(s): SFRs are similar in obese and overweight populations to normal weight patients. The decreased SFR seen with flexible ureteroscopy was likely due to more proximal stone locations. Higher BMI was associated with a longer hospital stay. Ureteroscopic laser lithotripsy is an effective and safe technique to treat urolithiasis in the overweight/obese patient. The use of stents, baskets, or access sheaths did not affect the SFR in any group.

Status

CONFERENCE ABSTRACT

Institution

(Paterson, Zavaglia, Lange, Zappavigna, Teichman, Che) Vancouver General Hospital, University of British Columbia, Vancouver, Canada (Matlaga) Johns Hopkins University, Baltimore, MD, United States

(Nunez, Humphreys) Mayo Clinic, Phoenix, AZ, United States

(Bruhn, Shah) New York University, New York, NY, United States

(Altamar, Miller) Vanderbilt University, Nashville, TN, United States

Publisher

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781.

Safety of retrograde intrarenal surgery (RIRS) in pregnancy: Evidence from a systematic review.
Somani B.K., Karina L., Cohen N., McClinton S., Traxe O.

Embase

Journal of Endourology. Conference: 29th World Congress of Endourology and SWL WCE 2011.
Kyoto Japan. Conference Publication: (var.pagings). 25(SUPPL. 1) (pp A181), 2011. Date of
Publication: November 2011.

[Conference Abstract]

AN: 70585196

INTRODUCTION: Urolithiasis in pregnancy has been reported in up to 1:200 women and can be
the cause of maternal and foetal distress. We conducted a systematic review of the literature to
look at the role of ureteroscopy in stone management during pregnancy.

Material(s) and Method(s): We searched MEDLINE, PubMed and the Cochrane Library from
January 1990 to June 2010 for RESULTS: of ureteroscopy and stone treatment in pregnancy.
Inclusion criteria were all English language articles with at least 3 patients. Data was extracted on
the outcomes and complications reported in the literature.

RESULT(S): A total of fifteen studies were indentified reporting on 126 procedures. Of these, the
treatment was done in the third trimester (3 studies), second or third trimester (6 studies) and
anytime during pregnancy (2 studies). The surgical method of stone management was stone
extraction with basket only (n = 60), laser fragmentation (n = 17, holmium; n = 7, pulse dye),
impact lithotripsy (n = 22) and ultrasonic lithotripsy (n = 6). Ten of these procedures were done
utilising flexible ureteroscopy. Postoperative stents were inserted in 73/118 (40%). A successful

outcome was seen in 107/120 (89%). There were 2 major (one ureteral perforation and one premature uterine contraction) and 7 minor complications (5 UTI and 2 post-op pain).

Conclusion(s): Retrograde stone treatment using URS is a relatively safe option in pregnancy with a high success rate.

Status

CONFERENCE ABSTRACT

Institution

(Somani, Karina, Cohen, McClinton) Dpartment of Urology, Aberdeen Royal Infirmary, Aberdeen, United Kingdom (Traxe) Department of Urology, Tenon University Hospital, Paris, France

Publisher

Mary Ann Liebert Inc.

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2011

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782.

Effective research of ureteroscopic lithotripsy combined with stone basket for the treatment of upper ureteral stone.

ChunLei X.

Embase

Journal of Endourology. Conference: 29th World Congress of Endourology and SWL WCE 2011. Kyoto Japan. Conference Publication: (var.pagings). 25(SUPPL. 1) (pp A179-A180), 2011. Date of Publication: November 2011.

[Conference Abstract]

AN: 70585190

Objectives: Discuss the safe and effective treatment for the upper urteral stones.

Material(s) and Method(s): From January 2009 to July 2010, 35 patients of upper ureteral stones received ureteroscopic lithotripsy combined with stone basket therapy. The equipment of lithotripsy was Holmium laser or ballistic. Negative stones were 5 cases(male 3, female 2). 12 stones located in the left side with 23 cases right. Stone size ranging from 3mm*5mm to 11mm*215m. Ureteral stones could be found by the ultrasound or plain film of abdominal obviously. Negative stones were also confirmed by computed tomography. Equipment including ureterscopy (F8/9.8, WOLF, Germany), stone basket (COOK, America), ballistic lithotripsy machine and 30W Holmium laser. Operative time varies from 7 minutes to 48 minutes. Ureteral stent were indwelled routinely in the end of surgery.

RESULT(S): The successful rate of lithotripsy was 97% (34/35), One case of stone was washed into the calyx because of the high location. Other patients received satisfied effects. Postoperative abdominal plain film showed no residual stones. Patients discharged between 1 to 3 days after operation.

CONCLUSION(S): Ureteroscopic lithotripsy combined with stone basket therapy is effective to the upper ureteral stone. For it can not only avoid the risk of blind use of stone basket ,but also improve the efficiency of lithotripsy. We consider it a safe and effective method to be wide for promotion.

Status

CONFERENCE ABSTRACT

Institution

(ChunLei) Department of Urology, 3rd Hospital of Peking University, Beijing, China

Publisher

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2011

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Accordion - Music to the endourologist.

Anjum F., Sellaturay S., Marsh H., Dickinson I., Sriprasad S.

Embase

Journal of Endourology. Conference: 29th World Congress of Endourology and SWL WCE 2011. Kyoto Japan. Conference Publication: (var.pagings). 25(SUPPL. 1) (pp A179), 2011. Date of Publication: November 2011.

[Conference Abstract]

AN: 70585189

INTRODUCTION: Management of upper ureteric stones with ureteroscopy and laser fragmentation can be tricky, especially if there is migration of fragments to the kidney, needing flexible ureteroscopic management. Stone immobilisation devices are cumbersome and are not satisfactory. We present our initial experiences with the novel PercSys Accordion [PA] stone management device.

Method(s): The PA consists of its own introducer, an advanced microcatheter that features a proprietary film occlusion device with radio opaque markers. The device is introduced into the ureter through a cystoscope. There is a locking handle mechanism to manipulate the position of the occluding film. PA is placed beyond the stone under radiological guidance and deployed by pulling the inner guide wire. The occluding film takes a concertina configuration like an accordion, hence the name. Once deployed the PA prevents migration of stone which can be fragmented with laser or other devices. Once fragmentation is complete the device is trawled down removing residual fragments.

RESULT(S): The device was used in 20 radio opaque upper ureteric stone patients. Seven of these were non-stented. Mean stone size was 9 mm [range 8mm - 14mm]. Two were impacted. Placement and deployment was successful in all cases. Stone fragmentation was performed using the holmium-YAG laser. Irrigation was kept at high flow and the vision was excellent. The mean laser time was 391 sec (139-672).

Conclusion(s): The PA is satisfactory and avoids the need for additional procedures or baskets. We believe that this device will be an essential part of endourological armamentarium.

Status

CONFERENCE ABSTRACT

Institution

(Anjum, Sellaturay, Marsh, Dickinson, Sriprasad) Department of Urology, Darent Valley Hospital, Dartford, Kent, United Kingdom

Publisher

Mary Ann Liebert Inc.

Year of Publication

2011

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784.

Lessons learned after 3000 percutaneous procedures for urolithiasis.

Multescu R., Mirciulescu V., Georgescu D., Geavlete B., Geavlete P.

Embase

Journal of Endourology. Conference: 29th World Congress of Endourology and SWL WCE 2011. Kyoto Japan. Conference Publication: (var.pagings). 25(SUPPL. 1) (pp A117), 2011. Date of Publication: November 2011.

[Conference Abstract]

AN: 70584997

INTRODUCTION: Percutaneous nephrolithotomy is nowadays routinely performed in many centers.

Purpose(s): To evaluate methods to improve RESULTS: on large series of patients. Materials and

Methods: During the last 9 years, in our department were performed 3071 percutaneous procedures for lithiasis. The technical tricks used for solving procedural problems were represented by: supplementary puncture and displacement of the calculus, basket removal of calculi migrated into the ureter, dye or air instillation through the ureteral catheter, lumbar palpation to modify renal position and usage of the flexible endoscopes.

RESULT(S): A single supplementary access tract was performed in 93 cases, 2 supplementary tracts in 58 cases and 3 supplementary tracts in only 14 cases. The displacement of the calculus was applied in 52 cases using the needle, a jet of saline under pressure or the percutaneously inserted ureteroscope in 2 cases. The use of flexible endoscopes improved the stone-free rate in 123 cases. Accidentally lost percutaneous tracts were renegotiated after metilen blue or air instillation through the ureteral catheter in 44 cases. Stone fragments migrated into the ureter were extracted using a basket in 54 cases, the flexible endoscopes in 35 cases or

pushed up jets of saline under pressure injected through the ureteral catheter. Lumbar palpation allowed the repositioning and extraction of migrated fragments in 54 cases.

CONCLUSION(S): Technical tricks improved the stone-free rate in a significant number of cases. Their appliance increases proportionally with the surgeon experience, but they must be performed with caution, due to the possible associated morbidity.

Status

CONFERENCE ABSTRACT

Institution

(Multescu, Mirciulescu, Georgescu, Geavlete, Geavlete) "Saint John" Emergency Clinical Hospital, Bucharest, Romania

Publisher

Mary Ann Liebert Inc.

Year of Publication

2011

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785.

Results of flexible ureterorenoscopy (URS) and extracorporeal shockwave lithotripsy (SWL) in two consecutive groups of about 180 patients.

Hochmuth A., Wohlmuth M., Krause F.S.

Embase

European Urology, Supplements. Conference: EAU 11th Central European Meeting, CEM.

Timisoara Romania. Conference Publication: (var.pagings). 10(9) (pp 638-639), 2011. Date of Publication: October 2011.

[Conference Abstract]

AN: 70573026

Introduction & Objectives: In 2006 and 2007 on a urologic ward 180 consecutive patients with stones of the upper urinary tract were treated with SWL (external lithotripter). After switch to endourologic surgery (stiff and flexible Ureterorenoscopy [URS], mini-percutaneous litholapaxy) in the middle of the year 2008 the stone therapy was done almost exclusively without SWL (only at patients wish). The medical data of both treatment options was selected and evaluated.

Material(s) and Method(s): We did a retrospective complete acquisition of data of 180 patients treated with ESWL in the year 2006 and 2007 with conventional X-ray and ultrasound determined stone free rate. Likewise in the year 2009 and 2010 180 consecutive patients treated with flexible ureterorenoscopy were evaluated. Data for stone localisation, operating time, stone-free rate, complication rate (haematoma, colic, infects, perforation) and auxilliary procedures was collected.

Result(s): In the patient-group of the ureterorenoscopic treatment the median stone burden was a diameter of 7.1 mm, a laserlithotrypsie was performed in 44%, a previous DJ-insert (because of colic or preparation of the ureteral pathway) in 68%. A second look endoscopy was necessary in 9% of all cases. Average operating time was 66 min, stone free rate was 92%, complication rate 11% (perforation 7%, fever 2%, DJ-catheter dislocation 1%, pain with necessary intravenous treatment 1%). No ureteral stricture was seen in follow up. Of the SWL-treated patients in 49% a DJ-stenting was necessary, mean stone diameter was 7.8 mm (about 10% larger than endoscopic treated group), localisation was pretty similar in both groups (except ureteral stones more often in SWL-group, lower caliceal stones twice in endoscopic treated group due to stenting). A second shockwave-therapy was done in 16% of all patients. Stone free rate was 47%, complication rate 10% (haematoma, colic).

Conclusion(s): Flexible ureterorenoscopy is a safe and effective procedure to treat patients with small stones of the renal caliceal system. We found a comparably significant better stone free rate with morbidity similar to SWL. Good quality equipment (modern flexible ureterorenoscopes, holmium-laser, ureteral access sheath, high quality tipless stone baskets) and surgical skills provide an excellent outcome for the stone-patient.

Status

CONFERENCE ABSTRACT

Institution

(Hochmuth, Wohlmuth, Krause) AKH Linz, Dept. of Urology, Linz, Austria

Publisher

Elsevier

Year of Publication

2011

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786.

Percutaneous nephrolithotomy: Lessons learned after 3000 procedures.

Multescu R., Cauni V., Mirciulescu V., Georgescu D., Geavlete B., Geavlete P.

Embase

Urology. Conference: 31st Congress of the Societe Internationale d'Urologie, SIU 2011. Berlin Germany. Conference Publication: (var.pagings). 78(3 SUPPL. 1) (pp S377-S378), 2011. Date of Publication: September 2011.

[Conference Abstract]

AN: 70565206

Introduction and Objectives: Percutaneous nephrolithotomy is nowadays routinely performed in many centers. The aim of the study was to evaluate methods to improve the results of the intervention on large series of patients.

Material(s) and Method(s): During the last 9 years, in our department were performed 3071 percutaneous procedures for lithiasis. The technical tricks used for solving procedural problems were represented by: supplementary puncture and displacement of the calculus, basket removal of the calculi migrated into the ureter, dye or air instillation through the ureteral catheter, lumbar palpation to modify renal position and usage of the flexible endoscopes.

Result(s): A single supplementary access tract was performed in 93 cases, 2 supplementary tracts in 58 cases and 3 supplementary tracts in only 14 cases. The displacement of the calculus was applied in 52 cases using the needle itself, a jet of saline under pressure or the percutaneously inserted ureteroscope in 2 cases. The use of flexible endoscopes improved the stone-free rate in 123 cases of complex renal stones. Accidentally lost percutaneous tracts were renegotiated after metilen blue or air instillation through the ureteral catheter in 44 cases. Stone fragments migrated into the ureter were extracted using a basket in 54 cases, the flexible endoscopes in 35 cases or pushed up jets of saline under pressure injected through the ureteral catheter. Lumbar palpation after establishing the percutaneous tract allowed the repositioning and extraction of migrated fragments in 54 cases.

Conclusion(s): Technical tricks improved the stone-free rate in a significant number of cases. Their appliance increases proportionally with the surgeon's experience, but they must be performed with caution, due to the possible associated morbidity.

Status

CONFERENCE ABSTRACT

Institution

(Multescu, Cauni, Mirciulescu, Georgescu, Geavlete, Geavlete) Saint John Emergency Clinical Hospital, Bucharest, Romania

Publisher

Elsevier Inc.

Year of Publication

2011

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Link to the External Link Resolver:

[SFX](#)

787.

An alternative method in ureteroscopic extraction of ureteral stones.

Kim K., Cho S.

Embase

Urology. Conference: 31st Congress of the Societe Internationale d'Urologie, SIU 2011. Berlin Germany. Conference Publication: (var.pagings). 78(3 SUPPL. 1) (pp S368-S369), 2011. Date of Publication: September 2011.

[Conference Abstract]

AN: 70565180

Introduction and Objective: Ureteroscopic stone extraction has been considered as an efficacious method especially for retrieval of lower ureter stones. Herein, we would like to present an easier and safe method for extraction of fragmented remnant stones through the intravesical ureter.

Material(s) and Method(s): Among 392 patients who underwent ureteroscopic lithotripsy up to October 2010, a total of 20 patients, who had remnant stones which were not so large but might not pass through the lower ureter, were enrolled in this study. We used one or two steel guide wire(s), 6.5Fr (tip size) or 8.5Fr rigid ureteroscope, and stone basket. The procedures were as follows; First place one or two steel guide wires over the stone. Entrap a stone within a stone basket placed in a rigid ureteroscope. Pull the basket engaging a stone to be placed beneath the tip of the telescope. Arrange the ureteroscope for the stone to be placed on the guide wire(s), so that the stone is finally placed between the tip of the telescope and the guide wire(s). The stone basket engaging a stone and the ureteroscope are pulled back together along the steel guide wire(s). Then a stone can pass easily through the ureter, especially intravesical ureter without complication just like that a train slip on a railroad track without sinking into the ground (railroad track effect). Procedures were done under spinal regional block, general anesthesia, or injection of analgesics.

Result(s): The sizes of the original and final fragmented stones were 4-15mm (mean, 7.45 $\pm$ 3.003mm) and 3-7mm (mean, 5.0 $\pm$ 1.071mm), respectively. All stones removed easily and shortly. There was no injury to the ureter such as prolapse, avulsion, or deep laceration and no significant bleeding. Two guide wires were more efficient than one. Double-J catheters were placed temporarily to prevent postoperative pain in 10 ureters.

Conclusion(s): The above method (railroad track effect) using a narrow rigid ureteroscope, steel guide wire(s), and stone basket would be a safe and helpful alternative to removal of a stone which is not so big but relatively difficult for pass-ing the ureter, without additional traumatic dilation of the ureter.

Status

CONFERENCE ABSTRACT

Institution

(Kim, Cho) Dept. of Urology, School of Medicine, Hallym University, Seoul, South Korea

Publisher

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2011

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788.

Outcome of one stage ureteroscopy for bilateral ureteric stones.

Galal E.

Embase

Urology. Conference: 31st Congress of the Societe Internationale d'Urologie, SIU 2011. Berlin Germany. Conference Publication: (var.pagings). 78(3 SUPPL. 1) (pp S365), 2011. Date of Publication: September 2011.

[Conference Abstract]

AN: 70565170

Introduction and Objective: To obviate the need for multiple sessions, we reviewed our experience with one stage ureteroscopy for bilateral ureteric stones.

Material(s) and Method(s): In the period between March 2008 and November 2010 at Minia University Hospital, a total of 34 patients (20 men and 14 women) with a mean age of 38.4+/-13.6 years (16-82) years, underwent one stage ureteroscopy for bilateral ureteric stones using 8Fr semirigid ureteroscope. The procedure commences by placing of a 0.038 inch floppy- tipped guidewire through the selected ureteric orifice under direct vision and fluoroscopic monitoring. Balloon dilation of intramural ureter was done in most cases and stone treatment decided according to its size either by direct extraction or lithotripsy using the pneumatic lithoclast. Postoperatively unilateral or bilateral ureteral stenting (either a double- j or ureteric catheter) was done for an average 2 days to 6 weeks.

Result(s): Sixty-four ureteroscopic procedures were successfully completed to treat 32 patients underwent one stage ureteroscopy. Bilateral ureteric stones were the indication for ureteroscopy in all cases. Stone size ranged from 3-20mm with a mean size 8.3mm. The stones were radio-opaque in 28 patients (87.5%) and poor density in 4 patients (12.5%). A single stone was found in 30 patients (93.75%) while 2 patients (6.25%) had multiple stones. In 18 patients (56.25%) calculi were retrieved intact using baskets, whereas in 14 patients (43.75%) lithotripsy was required. Intraoperatively we determined that 25 of 32 patients (78.2%) were stone-free bilaterally and another 7 patients (21.8%) were stone-free unilaterally. The mean operative time was 85 minutes with a range of (35-150 min). Early postoperative complications were rare including fever in 4 (12.5%) patients; however, no long-term complications observed.

Conclusion(s): One stage ureteroscopy for bilateral ureteric stones is a safe and effective procedure that could achieve a satisfactory results compared to those of unilateral ureteroscopy.

Status

CONFERENCE ABSTRACT

Institution

(Galal) Dept. of Urology, Minia University Hospital, Minia, Egypt

Publisher

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Year of Publication

2011

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789.

Complications of semirigid ureteroscopy: The experience of a single academic tertiary center with more than 2500 cases.

Bucuras V., Botoca M., Cumpanas A., Muresan A., Bardan R.

Embase

Urology. Conference: 31st Congress of the Societe Internationale d'Urologie, SIU 2011. Berlin Germany. Conference Publication: (var.pagings). 78(3 SUPPL. 1) (pp S104), 2011. Date of Publication: September 2011.

[Conference Abstract]

AN: 70564413

Introduction and Objective: Semirigid ureteroscopy still remains a useful tool in the treatment of ureteral stones despite the tremendous development of technology, involving flexible ureteroscopes, high-definition images etc. The aim of this study was to evaluate intra-operative incidents and complications after more than 2500 retrograde semirigid ureteroscopies performed in our department.

Material(s) and Method(s): In this retrospective study, we analyzed 2588 procedures performed in a single academic, tertiary, training center, focusing on intraoperative and postoperative incidents and complications.

Result(s): Indications for retrograde ureteroscopy have been represented by: proximal (lumbar) ureteral stones in 802 cases (31%) and distal ureteral stones in 1786 cases (69%). Failure in performing ureteroscopy was defined as the impossibility to visualize the stone and to treat it, either by lithotripsy, push back and ESWL, basket stone removal or combined variants of all above and was noted in 414 cases (16%), the most part of them at first attempt (414 cases - 86% of failures). Intraoperative complications (137 cases-5.3%) consisted in: perforation of ureter - 67cases (2.6 %), erosions of urothelium leading to significant bleeding - 54 cases (2.1%) et al. Two cases of ureteral avulsion have been noted (0.07%). Conversion to open surgery has been done in 25 cases (3%). Immediate postoperative mortality was absent. Stone free rate after ureteroscopy as single procedure was 81%.

Conclusion(s): Retrograde semirigid ureteroscopy is still an important, safe and efficient method of treatment in ureteral stones. Learning curve is longer than in other procedures, but after gaining experience, complications are fewer and minor, with an increased overall success rate.

Status

CONFERENCE ABSTRACT

Institution

(Bucuras, Botoca, Cumpanas, Muresan, Bardan) Dept. of Urology, University of Medicine and Pharmacy, Timisoara, Romania

Publisher

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Management of urolithiasis in kidney donors.

Ganpule A., Jagtap J., Sabnis R., Mishra S., Desai M.

Embase

Urology. Conference: 31st Congress of the Societe Internationale d'Urologie, SIU 2011. Berlin Germany. Conference Publication: (var.pagings). 78(3 SUPPL. 1) (pp S70), 2011. Date of Publication: September 2011.

[Conference Abstract]

AN: 70564332

Introduction and Objective: We evaluated the safety and efficacy of extracorporeal shock wave lithotripsy (ESWL), retrograde intrarenal surgery (RIRS), ex vivo ureteroscopy (ExURS) and pyelolithotomy (ExPYL), as means of rendering a donor kidney stone-free in living related donor renal transplantation.

Material(s) and Method(s): Six cases with calculi in donor kidneys were managed; all were from a living related donor. Two patients underwent pre transplant ESWL while two underwent pre transplant RIRS. ExURS and ExPYL were done in 1 case each.

Result(s): The male: female ratio was 3:3 and average age was 56.2 years (41-71). Average stone size was 7mm (5-10mm). In the ESWL group an average of 850 shocks (500-1200) were given. Patients underwent RIRS with a 7F flexible ureterscope. All these patients achieved complete clearance before donor Nephrectomy. Immediately after cold perfusion, ExURS was performed using iced saline with a 7F semi rigid ureterscope in one case while in the other case a 12F nephroscope was introduced via a pyelotomy and in both the cases, stones were retrieved intact with a dormia basket. Indwelling ureteral stents were kept during transplantation in both cases of ex vivo surgeries. There were no intraoperative or postoperative complications. At a mean follow up of 36 months (10-58) no new stones formed in any recipient or donor.

Conclusion(s): ESWL/RIRS can be performed safely in the pre transplant setting while ExURS and ExPYL were equally safe and technically feasible to render a stonebearing kidney stone- free without compromising ureteral integrity or renal allograft function.

Status

CONFERENCE ABSTRACT

Institution

(Ganpule, Jagtap, Sabnis, Mishra, Desai) Muljibhai Patel Urological Hospital, Nadiad, India

Publisher

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791.

Retrograde intrarenal surgery for the management of renal stones.

Cepeda Delgado M., Amon Sesmero J., Rodriguez Tesedo V., Rivero Cardenes A., Sanchez Garcia J., Alonso Fernandez D., Castroviejo Royo F., Conde Redondo C., Garcia Velandria F., Martinez-Sagarra J.

Embase

Urology. Conference: 31st Congress of the Societe Internationale d'Urologie, SIU 2011. Berlin Germany. Conference Publication: (var.pagings). 78(3 SUPPL. 1) (pp S30-S31), 2011. Date of Publication: September 2011.

[Conference Abstract]

AN: 70564234

Introduction and Objective: Retrograde intrarenal surgery (RIRS) for the management of renal stones is becoming more and more popular due to technological progress, such as new generation flexible ureteroscopes, holmium laser fibers and nitinol baskets. The purpose is to present our experience with this technique.

Material(s) and Method(s): From June 2009 till October 2010 we performed RIRS for renal stone on 50 patients. We treated isolated stones in 38 cases (14 lower calyx, 7 medium calyx, 9 upper calyx and 8 renal pelvis) and multiple stones in 12 cases. The mean size was 14.94 mm (r:5-39). We perform the surgery with ureteral access sheath (13- 11Fr.), flexible ureterorenoscope (third generation-7,5Fr.), holmium laser 12W (200 and 365 micron fibers) and nitinol baskets (1,7Fr.). The stone-free rate was defined as the absence of any stones in the kidney or residual stone fragments less than 2 mm, in ultrasound and KUB. The mean follow-up was 6 month (r:4-8).

Result(s): Any intraoperative complication was reported. The mean operating time was 85 min (r:30-190). The overall Stonefree rate was 93.6%. The mean hospital stay was 2.3 days (r:1-7). There were 7 minor complications (14%) and 1 major complication (2%) (sepsis). Three patients

needed a second treatment (6%). We didn't observe ureteral stenosis due to the use of the ureteral access sheath.

Conclusion(s): This procedure is safe and feasible, with a high success rate and a low complication rate. Besides being an alternative to ESWL and PCNL, in selected cases RIRS may be the treatment of choice for renal stones.

Status

CONFERENCE ABSTRACT

Institution

(Cepeda Delgado, Amon Sesmero, Rodriguez Tesedo, Rivero Cardenes, Sanchez Garcia, Alonso Fernandez, Castroviejo Royo, Conde Redondo, Garcia Velandria, Martinez-Sagarra)
Hospital Universitario Rio Hortega, Valladolid, Spain

Publisher

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792.

Lessons learned after 3000 percutaneous nephrolithotomy procedures.

Geavlete B., Multescu R., Cauni V., Mirciulescu V., Geavlete P.

Embase

European Urology, Supplements. Conference: 1st Meeting of the EAU Section of Urolithiasis, EULIS. London United Kingdom. Conference Publication: (var.pagings). 10(7) (pp 519), 2011.

Date of Publication: October 2011.

[Conference Abstract]

AN: 70532297

Introduction and Objectives: Percutaneous nephrolithotomy is nowadays routinely performed in many centers. The aim of the study was to evaluate methods to improve the results of the intervention on large series of patients.

Material(s) and Method(s): During the last 9 years, in our department were performed 3071 percutaneous procedures for lithiasis. The technical tricks used for solving procedural problems were represented by: supplementary puncture and displacement of the calculus, basket removal of the calculi migrated into the ureter, dye or air instillation through the ureteral catheter, lumbar palpation to modify renal position and usage of the flexible endoscopes.

Result(s): A single supplementary access tract was performed in 93 cases, 2 supplementary tracts in 58 cases and 3 supplementary tracts in only 14 cases. The displacement of the calculus was applied in 52 cases using the needle itself, a jet of saline under pressure or the percutaneously inserted ureteroscope in 2 cases. The use of flexible endoscopes improved the stone-free rate in 123 cases of complex renal stones. Accidentally lost percutaneous tracts were renegotiated after metilen blue or air instillation through the ureteral catheter in 44 cases. Stone fragments migrated into the ureter were extracted using a basket in 54 cases, the flexible endoscopes in 35 cases or pushed up jets of saline under pressure injected through the ureteral catheter. Lumbar palpation after establishing the percutaneous tract allowed the repositioning and extraction of migrated fragments in 54 cases.

Conclusion(s): Technical tricks improved the stone-free rate in a significant number of cases. Their appliance increases proportionally with the surgeon's experience, but they must be performed with caution, due to the possible associated morbidity.

Status

CONFERENCE ABSTRACT

Institution

(Geavlete, Multescu, Cauni, Mirciulescu, Geavlete) Saint John Emergency Clinical Hospital, Dept. of Urology, Bucharest, Romania

Publisher

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Year of Publication

2011

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793.

Primary ureteroscopy for the management of proximal ureteric calculi using hold and shatter technique (H & S).

Sheikh M., Gill K.S., Cham B.W., Kheradmand F., Nusrat N., Darcy F., Quinlan M., Jaffrey S.

Embase

European Urology, Supplements. Conference: 1st Meeting of the EAU Section of Urolithiasis, EULIS. London United Kingdom. Conference Publication: (var.pagings). 10(7) (pp 492-493), 2011. Date of Publication: October 2011.

[Conference Abstract]

AN: 70532223

Introduction and Objectives: Ureteric stones are very common presentation to any urological service. To evaluate, assess and present the safety and efficacy of primary Ureteroscopy with intracorporeal holmium:YAG laser or contact lithotripsy in the management of proximal Ureteric stone.

Material(s) and Method(s): During the period January 2008-April 2011, 92 patients underwent primary Ureteroscopy for stone disease under single consultant in our institute. They were stratified according to the location, size of stone and modality of treatment used either in the form of Ureteroscopy with stone retrieval with Segura basket or securing with the basket and fragmentation with intracorporeal holmium:YAG laser or contact lithotripsy (H&S).

Result(s): Out of 92, 38 (41.30%) patients had Ureteroscopy for proximal stone. 71.05% (27 patients) of them had stone fragmentation/retrieval after been secured by Segura basket using intracorporeal contact lithoclast or holmium:YAG laser.

Conclusion(s): Our study suggests that primary Ureteroscopy for the management of proximal Ureteric calculi combined with intracorporeal holmium:YAG laser lithotripsy or contact Lithoclast is an acceptable treatment modality for all proximal Ureteric calculi and excellent results are achieved for calculi 1 cm or larger.

Status

CONFERENCE ABSTRACT

Institution

(Sheikh, Gill, Cham, Kheradmand, Nusrat, Darcy, Quinlan, Jaffrey) University College Hospital Galway, Dept. of Urology, Galway, Ireland

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794.

Outcome of one stage ureteroscopy for bilateral ureteric stones.

Galal E.M.

Embase

European Urology, Supplements. Conference: 1st Meeting of the EAU Section of Urolithiasis, EULIS. London United Kingdom. Conference Publication: (var.pagings). 10(7) (pp 491), 2011.

Date of Publication: October 2011.

[Conference Abstract]

AN: 70532219

Introduction and Objectives: The treatment of urinary stones has changed in the last 10 years to make the treatment options more patient friendly; however there are a number of factors could influence the modality of treatment selection To obviate the need for multiple sessions, we reviewed our experience with one stage ureteroscopy for bilateral ureteric stones.

Material(s) and Method(s): In the period between, March 2008 and November 2010 at Minia University Hospital, a total of 34 patients (20 men and 14 women) with a mean age of 38.4 +/- 13.6 years (16-82) years, underwent one stage ureteroscopy for bilateral ureteric stones using 8 Fr semirigid ureteroscope. The procedure commences by placing of a 0.038 inch floppy- tipped guidewire through the selected ureteric orifice under direct vision and fluoroscopic monitoring. Balloon dilation of intramural ureter was done in most cases and stone treatment decided according to its size either by direct extraction or lithotripsy using the pneumatic lithoclast. Postoperatively unilateral or bilateral ureteral stenting (either a double-j or ureteric catheter) was done for an average 2 days to 6 weeks.

Result(s): Sixty four ureteroscopic procedures were successfully completed to treat 32 patients underwent one stage ureteroscopy. Bilateral ureteric stones was the indication for ureteroscopy in all cases. stone size ranged from 3-20mm with a mean size 8.3mm. The stones were radio-opaque in 28 patients (87.5%) and poor dense in 4 patients (12.5%). single stone was found in 30 patients (93.75%) while 2 patients (6.25%) had multiple stones. In 18 patients (56.25%) calculi were retrieved intact using baskets, whereas in 14 patients (43.75%) lithotripsy was required. Intraoperatively we determined that 25 of 32 patients (78.2%) were stone-free bilaterally and another 7 patients (21.8%) were stone-free unilaterally. The mean operative time was 85 minutes with a range of (35- 150min). Early postoperative complications were rare including ever in 4 (12.5%) patients, however no long term complications observed.

Conclusion(s): One stage ureteroscopy for bilateral ureteric stones is a safe and effective procedure that could achieve a satisfactory results compared to those of unilateral ureteroscopy.

Status

CONFERENCE ABSTRACT

Institution

(Galal) Minia University Hospital, Dept. of Urology, Minia, Egypt

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795.

Is the efficacy of flexible ureterorenoscopy (fURS) depending on stone localisation?.

Harik W.M., Sydow J., Liske P., Zimmermanns V., Lahme S.

Embase

European Urology, Supplements. Conference: 1st Meeting of the EAU Section of Urolithiasis, EULIS. London United Kingdom. Conference Publication: (var.pagings). 10(7) (pp 487), 2011.
Date of Publication: October 2011.

[Conference Abstract]

AN: 70532207

Introduction and Objectives: The treatment of choice of upper urinary tract calculi is shockwave lithotripsy (SWL). Due to the morphology of the renal calyceal system SWL has limitations. Especially in lower pole stones the stonefree rate is poor. With the development of new flexible ureterorenoscopes and growing surgical experience endoscopic access to the upper urinary tract is possible. Endoscopic stone treatment offers a high stonefree rate and a low complication rate. Our objective was to evaluate, if stone localisation has an impact on the outcome of fURS.
Material(s) and Method(s): A prospective study of 921 consecutive fURS-procedures for stone treatment was conducted. Endoscopic procedures were done by means of 270degree-deflectable ureterorenoscopes using an ureteral access sheath of 12, 14 or 16 F. Lithotripsy was done by means of a holmium-laser. Data was collected for localisation of stones, stonefree rate, operating time, hospital stay length, complication rate and auxiliary procedures.

Result(s): In 214 cases stones in multiple localisations were detected, in 428 patients stones were localized exclusively in the lower calix, 147 in the mid calix and 87 in the upper calix. In 62 patients stones were found in the renal pelvis or the ureteropelvic junction. Multiple stones (84mm²), renal pelvic stones (73mm²) and upper calix calculi (100mm²) had greater overall stonemasses and required a longer operation time (59min for multiple stones and for pelvic stones). Mean stone size of lower and mid calix stones was 54.6mm² and 39.5mm², mean operation time was 48.2min for lower pole and 48.3min for mid calix stones. Laserlithotripsy was more often necessary for multiple stones (61.6%) than for lower pole stones (48.4%). Tipless baskets were used more often to remove residual fragments from the lower calix (95.1%) than from the upper calix (87%). Pyelonephritis occurred more often after treatment of upper pole stones (19.5%) than of mid calix stones (8.1%). There were no differences for other complications and no differences in stonefree rates. No differences in length of postoperative stay were observed.

Conclusion(s): Flexible ureterorenoscopy is a reliable and effective treatment modality for upper urinary tract calculi with high stonefree and low complication rate independent from localisation. Stones of different sizes and localisations can be treated successfully requiring slightly different operation times and causing different complication rates. Upper pole stones seem to represent a high risk group for postoperative fever.

Status

CONFERENCE ABSTRACT

Institution

(Harik, Sydow, Liske, Zimmermanns, Lahme) Siloah St. Trudpert Hospital, Dept. of Urology,
Pforzheim, Germany

Publisher

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796.

How high is the intraluminal pelvic pressure during flexible ureterorenoscopy?.

Jung H., Osther P.J.S.

Embase

European Urology, Supplements. Conference: 1st Meeting of the EAU Section of Urolithiasis,
EULIS. London United Kingdom. Conference Publication: (var.pagings). 10(7) (pp 484), 2011.

Date of Publication: October 2011.

[Conference Abstract]

AN: 70532198

Introduction and Objectives: Irrigation and instrumentation during ureterorenoscopic procedures cause increased pelvic pressure (PP), which may be followed by intrarenal backflow with potential harmful adverse effects. In order to assess the pressure increases during ureterorenoscopy, we measured the intraluminal pelvic pressure during retrograde intrarenal stone surgery (RIRS).

Material(s) and Method(s): Twelve patients admitted for RIRS were included. Irrigation rate was standardized to 8ml/min. A ureteral catheter was retrogradely placed in the renal pelvis for PP measurements. PP was measured two times per second during Introduction and use of the Storz Flex-X ureteroscope, during Introduction of stone-basket, during forced irrigation with contrast and when using a Holmium-laser fibre to disintegrate the stone.

Result(s): Baseline PP was mean 10(+/- 4.0)mmHg. During simple ureterorenoscopy, PP was mean 35(+/- 10)mmHg. During the use of stone basket and Holmium-laser, the average PP was 54(+/- 18)mmHg and pelvic pressure peaks up to 328mmHg occurred. In a five-minute standardized period of simple ureterorenoscopy, 83 pressure peaks >50mmHg were measured in average per patient (range 2-238). Forced irrigation with contrast in a 20ml syringe yielded pressure peaks up to 288mmHg.

Conclusion(s): Very high pelvic pressures (PPs) are obtained during ureterorenoscopy. Taking into consideration that the limit for intrarenal backflow is 30-35mmHg, it is concerning that PPs >300mmHg are not uncommon during these procedures. Procedures to lower the PP during ureterorenoscopy, therefore, are considered of importance.

Status

CONFERENCE ABSTRACT

Institution

(Jung, Osther) Fredericia Hospital, Dept. of Urology, Fredericia, Denmark

Publisher

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2011

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797.

The outcome of flexible ureteronephroscopy in renal stones larger than 15mm.

Holland R., Livne P.M., Lask D., Lifshitz D.

Embase

European Urology, Supplements. Conference: 1st Meeting of the EAU Section of Urolithiasis, EULIS. London United Kingdom. Conference Publication: (var.pagings). 10(7) (pp 473), 2011.

Date of Publication: October 2011.

[Conference Abstract]

AN: 70532169

Introduction and Objectives: Percutaneous nephrolithotripsy (PNL) is considered the treatment of choice for renal stones larger than 20mm in diameter while extracorporeal shockwave lithotripsy (SWL) is the treatment for stones smaller than 10mm. As for stones in diameter 10 to 20mm, the treatment options are still debatable. The purpose of this study is to evaluate the outcome of flexible renal ureteroscopy (RIRS) for stones larger than 15mm in comparison to smaller ones.

Material(s) and Method(s): We identified 72 patients who underwent RIRS for stones with a diameter of 15mm or more out of a database including 430 consecutive patients who underwent RIRS in our unit in the years 2000-2007. In all of the procedures we used access sheath and holmium laser. The stone fragmentation was done in situ or following stone translocation to the upper pole. The fragments were evacuated with a basket. Success rates three months after the procedure were compared to success rates in a the control group with smaller stones.

Result(s): 75% of the patients had a ureteral stent for at least three weeks prior to the procedure. The average stone diameter was 19.6mm (range 15-28mm). The success rates (stone free and insignificant fragments) in the groups with renal stones larger and smaller than 15mm were 74% and 78% respectively (no statistical significance). The complications rate (mainly post- operative fever) was significantly higher in the large stone group (8% and 5%, respectively). In most patients who were not stone free during the follow up, the residual stones were found in the lower pole.

Conclusion(s): RIRS for renal stones larger than 15mm is effective and yields similar outcomes as in smaller stones, alas with a higher complication rate. As was demonstrated in a previous study, lower pole complex anatomy is probably the main factor to the failure of spontaneous evacuation of residual fragments in the long run.

Status

CONFERENCE ABSTRACT

Institution

(Holland, Livne, Lask, Lifshitz) Rabin Medical Center, Dept. of Urology, Tel Aviv, Israel

Publisher

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798.

The role of flexible ureteroscopy and laser lithotripsy in the management of renal pelvis stones 20mm and larger.

Sonmez N.C., Serdar S., Guney S., Kilinc M., Dalkilic A., Ergenekon E.

Embase

European Urology, Supplements. Conference: 1st Meeting of the EAU Section of Urolithiasis, EULIS. London United Kingdom. Conference Publication: (var.pagings). 10(7) (pp 472-473), 2011. Date of Publication: October 2011.

[Conference Abstract]

AN: 70532168

Introduction and Objectives: Percutaneous nephrolithotomy (PNL) is the recommended treatment option for intrarenal calculi greater than 2 cm. The complication rates of PNL is higher than extracorporeal shock wave lithotripsy (ESWL) and ureteroscopy (URS) in the current literature. With wider availability and improvement of flexible ureteroscopy (URS), we assess the efficacy and safety of the flexible URS with holmium laser lithotripsy for treating solitary intrarenal pelvic stones 20mm or larger.

Material(s) and Method(s): 16 patients (11 male, 5 female) with solitary renal pelvic stone were treated with retrograde ureteroscopic nephrolithotripsy. Lithotripsy was performed by 8.6 fr. flexible URS and 200 micron laser fiber. All patients had DJ ureteral stent after the procedure. For residual fragments larger than 3mm; 2.2 fr.zero-tip nitinol stone basket was used for retrieval. Ureteroscopic success was defined as residual fragments smaller than 3mm or no residual stone. All patients were evaluated by KUB and renal ultrasound 2 and 6 weeks after the procedure.

Result(s): The mean age of the patients was 51 (32-69). Sixteen renal pelvic stones with an average stone size of 23.8mm (20-32mm) were treated by a single session flexible URS and holmium lithotripsy. Single session stone-free rate was 68.75%. Two weeks after the procedure, extracorporeal shock wave lithotripsy (ESWL) was used in 5 patients with residual stone fragments larger than 5mm. Stone-free rate was 100% after the ESWL therapy.

Conclusion(s): Single session flexible URS and holmium lithotripsy with ESWL for residual stone fragments with low morbidity and high efficiency is an alternative therapy option for PNL for renal pelvic stones larger than 20mm.

Status

CONFERENCE ABSTRACT

Institution

(Sonmez, Serdar, Guney, Kilinc, Dalkilic, Ergenekon) Sisli Etfal Research and Training Hospital,

Dept. of Urology Istanbul, Turkey

Publisher

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799.

Outcome of ureteroscopy for stone disease in patients with morbid obesity: Results from a systematic review of the literature.

Somani B.K., Kommu S., Cohen N., McClinton S.

Embase

European Urology, Supplements. Conference: 1st Meeting of the EAU Section of Urolithiasis, EULIS. London United Kingdom. Conference Publication: (var.pagings). 10(7) (pp 472), 2011.

Date of Publication: October 2011.

[Conference Abstract]

AN: 70532167

Introduction and Objectives: The management of urolithiasis in morbidly obese patients is challenging. Modalities such as shock wave lithotripsy and PCNL can be difficult or impossible in these patients due to problems with patient positioning, anatomical landmarks and increased skin to stone distance. Ureteroscopy may be the only and indeed best treatment option. We conducted a systematic review of the literature to look at the role of ureteroscopy for stone management in these patients.

Material(s) and Method(s): We searched MEDLINE, PubMed and the Cochrane Library from January 1990 to June 2010 for results of ureteroscopy and stone treatment in morbidly obese patients. Inclusion criteria were all English language articles reporting on ureteroscopy in patients with morbid obesity. Data was extracted on the outcomes and complications.

Result(s): A total of 5 studies were identified during this period. One hundred and twenty patients (125 procedures) with morbid obesity underwent ureteroscopy and stone treatment. Flexible ureteroscopes were used in all series. The mode of fragmentation was pulse dye laser (n = 49), holmium laser (n = 52) and combined modality including electrohydraulic lithotripsy and basket retrieval in others. The stone free rate was 81% (n = 98) after the first treatment and increased to 93% (n = 116) after the second treatment. Six patients (5%) had complications including post operative sepsis in 4 patients, pyelonephritis and ureteral perforation in one patient each.

Conclusion(s): Retrograde stone treatment using ureteroscopy and lasertripsy in morbidly obese patients can be safely performed with good stone clearance rates and a low complication rate.

Status

CONFERENCE ABSTRACT

Institution

(Somani, Cohen, McClinton) Aberdeen Royal Infirmary, Dept. of Urology, Aberdeen, United Kingdom (Kommu) Frimley Park Hospital, Dept. of Urology, London, United Kingdom

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800.

Outcomes of ureteroscopy for stone disease in pregnancy: Results from a systematic review of the literature.

Somani B.K., McClinton S., Cohen N., Graham J., Traxer O.

Embase

European Urology, Supplements. Conference: 1st Meeting of the EAU Section of Urolithiasis, EULIS. London United Kingdom. Conference Publication: (var.pagings). 10(7) (pp 472), 2011.

Date of Publication: October 2011.

[Conference Abstract]

AN: 70532166

Introduction and Objectives: Urolithiasis in pregnancy has been reported in up to 1:200 women and can be the cause of both maternal and foetal distress. We conducted a systematic review of the literature to look at the role of ureteroscopy in stone management during pregnancy.

Material(s) and Method(s): We searched MEDLINE, PubMed and the Cochrane Library from January 1990 to June 2010 for results of ureteroscopy and stone treatment in pregnancy.

Inclusion criteria were all English language articles with at least 3 patients reported. Data was extracted on the outcomes and complications reported in the literature.

Result(s): A total of fifteen studies were identified reporting on 126 procedures. Of these, the treatment was done in the third trimester (3 studies), second or third trimester (6 studies) and anytime during pregnancy (2 studies). The surgical method of stone management was stone extraction with basket only (n = 60), laser fragmentation (n = 17, holmium; n = 7, pulse dye), impact lithotripsy (n = 22) and ultrasonic lithotripsy (n = 6). Ten of these procedures were done utilising flexible ureteroscopy. Post-operative stents were inserted in 73/118 (40%). A successful outcome was seen in 107/120 (89%). There were 2 major (one ureteral perforation and one premature uterine contraction) and 7 minor complications (5 UTI and 2 post-op pain).

Conclusion(s): Stone treatment using ureteroscopic techniques is a relatively safe option in pregnancy with a high success rate.

Status

CONFERENCE ABSTRACT

Institution

(Somani, McClinton, Cohen, Graham) Aberdeen Royal Infirmary, Dept. of Urology, Aberdeen, United Kingdom (Traxer) Tenon University Hospital, Dept. of Urology, Paris, France

Publisher

Elsevier

Year of Publication

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801.

Displacement of lower calyceal stones during flexible ureterorenoscopy: Do we need it in every case?.

Sarica K., Yencilek F., Koyuncu H., Erihan B.

Embase

European Urology, Supplements. Conference: 1st Meeting of the EAU Section of Urolithiasis, EULIS. London United Kingdom. Conference Publication: (var.pagings). 10(7) (pp 470), 2011.

Date of Publication: October 2011.

[Conference Abstract]

AN: 70532161

Introduction and Objectives: To compare the efficacy of in situ flexible ureteroscopic holmium laser disintegration of lower pole calculi (<2 cm) in cases demonstrating favourable lower calyceal anatomy with the management following relocation of the calculi in either upper calyx or renal pelvis.

Material(s) and Method(s): From January 2008 to December 2009, a total of 74 patients (44 male and 30 female. M/F: 1.46) with lower pole stones (<2 cm) were managed with retrograde flexible ureterorenoscopy and holmium laser lithotripsy. Before the management, patients were randomly divided into twogroups with respect to the radiographic characteristics of the stone bearing calyx. While the calculi were treated in situ in 35 cases demonstrating favourable calyceal anatomy (Group 1) (the infundibulo-pelvic angle was >90degree, the lower calyceal infundibular length was <3 cm. and the calyceal opening was wide enough); in 39 cases however (Group 2), due to the characteristics of the calyceal anatomy, stones were disintegrated after displacing into the renal pelvis or upper calix using a nitinol basket or grasper. The efficacy of the intervention in terms of stone free rates, auxiliary procedures, complications and other certain parameters (operation time, hospitalization period) have been comparatively evaluated between the two groups.

Student's t test has been used for statistical significance.

Result(s): Complete stone-free status was achieved in 28/33 (84.8%) of stones treated in situ versus 27/29 (93.1%) treated with preliminary displacement ($p < 0.05$). If the patients in the partial success group (residual calculi <4mm) were included; complete success was achieved in 31/33

(93.9%) of stones treated in situ versus 29/29 (100%) treated with preliminary displacement ($p < 0.05$). There were a total of 7/62 (11.3%) treatment failures after a single flexible ureteroscopic procedure in both groups (5 in Group 1 and 2 in Group 2). Although comparative evaluation of the operative time between two groups did show a slightly longer duration in patients with stones treated after displacement; the difference was statistically insignificant ($p > 0.05$). Regarding the stent placement; although the need for stenting in the in situ group tended to be more often than displacement group (11.4% (4/35) and 7.6% (3/39) respectively, $p < 0.05$). Type of anesthesia, need for ureteral dilation and perioperative complications were comparable in the both groups. The incidence of both intraoperative and post-operative complications was low in both groups. Conclusion(s): Although a higher success rate has been reported for lower pole stones < 2 cm with retrograde flexible ureteroscopic disintegration following the displacement into a more accessible calix before treatment; our findings did clearly show that, the same success rates along with acceptable complications could be obtained after in situ management of such stones in cases with a favourable lower calyceal anatomy.

Status

CONFERENCE ABSTRACT

Institution

(Sarica, Yencilek, Koyuncu, Erihan) Yeditepe University Medical Faculty, Dept. of Urology, Istanbul, Turkey

Publisher

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Year of Publication

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802.

Endoscopic management of the two major pathways of stone formation.

Gnessin E., Mandeville J.A., Bledsoe S.B., Evan A.P., Lingeman J.E.

Embase

Journal of Urology. Conference: 2011 Annual Meeting of the American Urological Association, AUA. Washington, DC United States. Conference Publication: (var.pagings). 185(4 SUPPL. 1) (pp e204), 2011. Date of Publication: April 2011.

[Conference Abstract]

AN: 70377123

INTRODUCTION AND OBJECTIVES: No single theory can account for human kidney stone formation. Recent observations concerning various forms of human stone disease give us new insights into stone formation associated with interstitial apatite deposits (Randall's Plaque) and intra-tubular crystal deposits in the inner medullary collecting ducts and Ducts of Bellini (BD). Our goal is to describe the distinctively different surgical observations for two major pathways for stone pathogenesis.

METHOD(S): Using human tissue biopsies, intraoperative imaging, and metabolic data from 8 different stone forming groups, we identified two major pathways for stone formation. Digital endoscopy during percutaneous nephrolithotomy or ureteroscopy was used to document the surgical findings.

RESULT(S): The first pathway is overgrowth on Randall's Plaque (RP) in idiopathic calcium oxalate stone formers (ICSF). No visual evidence of inflammation or scarring existed. Stones were frequently attached to RP and can be removed using basket or laser. In the second pathway, there are crystal deposits in BD that were seen in all stone forming groups except ICSF. Obstruction of BD frequently occurs and evidence of obvious papillary abnormalities such as dilated BD and scarring. Stone removal by laser incision over obstructed BD, releasing the stone plugs. We hypothesize that removal of BD plugs may reduce the risk of future stone events and/or preventing further renal damage.

CONCLUSION(S): At least two fundamental pathways for stone formation exist. Understanding stone pathogenesis may allow us to provide individualized treatment, dependant on different stone forming groups. Selective de-obstruction of BD may prevent renal damage and reduce stone recurrence. Further clinical study is necessary to prove this hypothesis.

Status

CONFERENCE ABSTRACT

Institution

(Gnessin, Mandeville, Bledsoe, Evan, Lingeman) IndianapolisINUnited States

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Year of Publication

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803.

Polyscope™, the first disposable flexible ureteroscope: A breakthrough in flexible endoscopy. Giusti G., Taverna G., Zandegiacomo S., Bonvissuto G., Benetti A., Centrella D., Maugeri O., Guarella V., Graziotti P.

Embase

European Urology, Supplements. Conference: 26th Annual Congress of the European Association of Urology, EAU. Vienna Austria. Conference Publication: (var.pagings). 10(2) (pp 351), 2011. Date of Publication: March 2011.

[Conference Abstract]

AN: 70376621

Introduction & Objectives: In the last few years, the progressive improvement in technique together with recent advancements and downsizing in flexible ureteroscopes has offered new potentiality to ureteroscopic retrograde treatment of renal stones. Nevertheless, the major obstacle to dissemination of flexible ureteroscopy into everyday urological practice worldwide is endoscopes' fragility and related maintenance costs rather than optical resolution. This means that routine implementation of flexible ureteroscopy in clinical practice implies significant spending for initial acquisition and then maintenance of these costly endoscopes. The Polyscope TM from Lumenis may represent the solution of these problems.

Material(s) and Method(s): The Polyscope TM is the first disposable flexible endoscope. The Polyscope TM catheter body is only 8 french in diameter and delivers high quality images through a 10.000 pixels fiber optic. The catheter articulates up to 250degree only in one direction. It contains a 3.6 french working and irrigation channel to accommodate laser fibers, stones baskets, balloons, and biopsy devices. The fiber optic channel is sealed by a diamond glass plate so that the fiber optic never comes in the contact with the patient and does not need to be sterilized between cases. The catheter handle offers simple control over catheter direction easily bending

the catheter tip till 250degree. Rotation feature on the handle allows the bending of the catheter to be oriented in any direction. The Polyscope TM system adapts to all current video towers. The camera head and the light cable are connected to the system and kept outside the sterile field as well. In this video tape we show a case of left renal stone of 1.7 cm in diameter treated ureteroscopically with the Polyscope TM catheter.

Result(s): Our initial series gathers 10 patients with a mean stone's diameter of 1.2+/-0.3 cm (0.7-1.7) treated ureteroscopically with Polyscope TM disposable ureteroscope . With a mean OR time of 62+/-13min (41-84) we were able to achieve a stone free status in 80% of cases with an hospital stay ranging between 1 and 3 days (average 1.9+/-0.2). All these findings parallels what we usually obtain with the same procedure carried out with conventional reusable flexible ureteroscope.

Conclusion(s): The Polyscope catheter represents a breakthrough in flexible ureteroscopy providing a reliable, cost effective and disposable endoscope capable of delivering high quality images and eliminating the need for sterilization of instruments between operations, the risk of tissue transfer and contamination from one patient to the next and the unforgivable cases of procedures interrupted because of scope breakage.

Status

CONFERENCE ABSTRACT

Institution

(Giusti, Zandegiacomo, Bonvissuto, Benetti, Centrella, Maugeri, Guarella) Istituto Clinico Humanitas, Irccs Stone Center, Dept. of Urology, Milan, Italy (Taverna, Graziotti) Istituto Clinico Humanitas Irccs, Dept. of Urology, Milan, Italy

Publisher

Elsevier

Year of Publication

2011

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804.

Ureteroscopy without anaesthetist.

Ortega Seda C.J., Lozano Blasco J.M., Arguelles Salido E., Garcia Sanchez C., Banea Villamarin C., Campoy Martinez P., Medina Lopez R.A.

Embase

European Urology, Supplements. Conference: 26th Annual Congress of the European Association of Urology, EAU. Vienna Austria. Conference Publication: (var.pagings). 10(2) (pp 97), 2011. Date of Publication: March 2011.

[Conference Abstract]

AN: 70375740

Introduction & Objectives: The good results achieved with our sedoanalgesia protocol for outpatient treatment of urinary stones with extracorporeal shock waves have encouraged us to use the same protocol for the implement of outpatient ureteroscopy, easy cases at first, then more complex. The aim of this study is to share our experience with outpatient ureteroscopy without anaesthesia, to establish its indications and present the results obtained.

Material(s) and Method(s): From May 2007 until June 2008, we performed 54 outpatient ureteroscopy without anaesthesia to 37 women and 17 men. The sedation was performed according to protocol agreed with the anaesthesiology service in our center. After ureteroscopy we gave each patient a visual analog scale (VAS) to register pain. 5 cases were made for withdrawal or redeployment of double J catheter migrated and 1 for exploration, biopsy and ureteral selective cytology. The average size of stones was 7.2 mm (5-13). Only distal stones were treated at the crossroads of the iliac arteries. Ureteroscopy was performed according to conventional technique, with semi-rigid ureteroscope, and remove the stones with basket or tongs after endoscopic pneumatic lithotripter fragmentation if the case required this.

Result(s): The 5 cases of withdrawal or redeployment of double J catheter and exploratory ureteroscopy with biopsy were successful. The extraction or fragmentation and subsequent removal of the stone was achieved in 43 patients. 4 cases failed: two of them for prostate adenoma with prominent median lobe, and inability to access, one patient that did not tolerate steinstrasse removal, and one case of meatal ureteral stenosis which did not allow access. In one case, ureteroscopy found the absence of stones. The median level of pain according to VAS was 3.7 (2-8). 14 patients developed renal colic after the procedure, despite having no lithiasis, no needing of hospitalization or instrumentation.

Conclusion(s): We believe that ureteroscopy without anaesthesia is feasible, well tolerated, with few complications and provides good results in the treatment of stone not too large, unique or at least not large steinstrasse in patients without prominent median lobe, always in pelvic ureter.

Status

CONFERENCE ABSTRACT

Institution

(Ortega Seda, Lozano Blasco, Arguelles Salido, Garcia Sanchez, Banea Villamarin, Campoy Martinez, Medina Lopez) Virgen del Rocio University Hospitals, Clinical Unit of Urology and Nephrology, Seville, Spain

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805.

Current management of ureteric stones.

Varshney A.

Embase

Journal International Medical Sciences Academy. 24(3) (pp 115-116), 2011. Date of Publication: July-September 2011.

[Short Survey]

AN: 363026878

Ureteroscopy has rapidly replaced surgery in the treatment of ureteric stone. Since calculi located in the upper ureter lie within the reach of conventional, extra corporeal shock wave treatment, ureteroscopy has gained wider acceptance for stones situated distally in the iliac or pelvic ureter. Ureteroscopy has an edge in the patients who have large and obstructing calculi with poor renal function. Historically, active intervention for ureteric stones was restricted to blind basketry and open surgery. Over the last 2 decades, this has changed with the advent of extra corporal shockwave lithotripsy (ESWL) and ongoing improvement in endourology, and revolutionized the management of ureteric stones, virtually eliminating the need for open surgery. ESWL introduced

by Chaussy and colleagues in 1980 is now the most widely used management option for renal and proximal ureteric calculi. However, ureteroscopy (URS) with laser lithotripsy with its higher success rates and faster time to stone free status, is rapidly becoming first line therapy for ureteral calculi.

Status

Embase

Institution

(Varshney) R.G. Stone Urology and Laparoscopy Hospital, F-12, East of Kailash, New Delhi-110065, India

Publisher

International Medical Sciences Academy (Ansari Nagar, Ring Road, New Delhi 110029, India)

Year of Publication

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806.

Ureteral avulsion during contemporary ureteroscopic stone management: "The scabbard avulsion".

Ordon M., Schuler T.D., Honey R.J.D.A.

Embase

Journal of Endourology. 25(8) (pp 1259-1262), 2011. Date of Publication: 01 Aug 2011.

[Article]

AN: 362544091

Ureteral avulsion during ureteroscopic stone management is extremely rare. To date, many publications reporting avulsion have been associated with "blind basket extraction" under fluoroscopy and the use of the Dormia stone basket. Fortunately, despite the significant rise in the numbers of ureteroscopic cases being performed, the rate of ureteral avulsion remains low. This

is likely in part because of improvements in ureteroscope technology and stone manipulation devices. We present three recent cases of ureteral avulsion referred to our center for further management. To our knowledge, these cases represent the first published description of avulsion where the ureteroscope became wedged in the intramural ureter, resulting in full-length avulsion of the ureter. The avulsion occurs both proximally and distally with a resultant length of ureter left attached to the ureteroscope. We dub this mechanism the "scabbard" avulsion. We describe the most likely mechanism of this injury, with suggestions on how to prevent it and how to release the ureteroscope should it become wedged in the intramural ureter. © 2011, Mary Ann Liebert, Inc.

PMC Identifier

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Status

Embase

Institution

(Ordon, Honey) Division of Urology, St. Michael's Hospital, Toronto, ON, Canada (Schuler)

Division of Urology, University of Alberta, Edmonton, AB, Canada

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2011

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807.

Destruction of stone extraction basket during an in vitro lithotripsy-A comparison of four lithotripters.

Cordes J., Lange B., Jocham D., Kausch I.

Embase

Journal of Endourology. 25(8) (pp 1359-1362), 2011. Date of Publication: 01 Aug 2011.

[Article]

AN: 362544093

Background: Various techniques are available for intracorporeal disintegration of renal and ureteral stones, among them ballistic lithotripsy, ultrasonic lithotripsy and laser lithotripsy. The therapeutic effectiveness of these devices has been sufficiently studied and compared. This does not apply, however, to the risk of destroying the stone basket.

Material(s) and Method(s): The time until destruction of the wires of various baskets with use of four different lithotripsy devices (LithoClast, EMS; LithoRapid, Olympus; Calculon 27610029, Storz; Vera Pulse, Coherent) was measured in a model closely aligned with the clinic.

Result(s): As expected, the direct application of laser pulses (wavelength 2.1 μm) irrespective of thickness and shape led to a melting of all wires of the stone extraction basket in less than 50 seconds (pulse energy: 800 mJ, pulse repetition rate: 8 hertz; fiber diameter: 365 μm). The purely kinetic functioning lithotripters (electrokinetic-ballistic and pneumatic-ballistic) were not able to destroy any wire within the set time limit of one minute. The sonotrode of the ultrasonic device, which is considered to be very tissue-conserving, separated all wires of baskets with a diameter of 1.8F (4 wires), 75% of baskets with a diameter of 2.5F (9 of 12), but only 8.3% of baskets with a diameter of 3.5F (1 of 12). Plaited wires demonstrated a good resistance (0 of 4) in comparison with the sonotrode.

Conclusion(s): Our study consequently shows that in addition to the laser, the ultrasonic probe can also easily destroy nitinol (nickel titanium) baskets. © 2011, Mary Ann Liebert, Inc.

PMC Identifier

21745114 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=21745114>]

Status

Embase

Institution

(Cordes, Jocham) Urology Clinic, University of Lubeck, University Medical Center Schleswig-Holstein, Lubeck, Schleswig-Holstein, Germany (Lange) Medizinisches Laserzentrum Lubeck GmbH, Medical Laser Center Lubeck, Lubeck, Schleswig-Holstein, Germany

(Kausch) Departments of Urology and Pediatric Urology, Ammerlandclinic Westerstede, Westerstede, Niedersachsen, Germany

Publisher

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Year of Publication

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808.

Comparison of small diameter stone baskets in an in vitro caliceal and ureteral model.

Korman E., Hendlin K., Chotikawanich E., Monga M.

Embase

Journal of Endourology. 25(1) (pp 123-126), 2011. Date of Publication: January 2011.

[Article]

AN: 361275001

Background and Purpose: Three small diameter (<1.5F) stone baskets have recently been introduced. Our objective was to evaluate the stone capture rate of these baskets in an in vitro ureteral model and an in vitro caliceal model using novice, resident, and expert operators.

Material(s) and Method(s): Sacred Heart Medical Halo™ (1.5F), Cook N-Circle Nitinol Tipless Stone Extractor (1.5F), and Boston Scientific OptiFlex (1.3F) stone baskets were tested in an in vitro ureteral and a caliceal model by three novices, three residents, and three experts. The caliceal model consisted of a 7-cm length of 10-mm O.D. plastic tubing with a convex base. Each operator was timed during removal of a 3-mm calculus from each model with three repetitions for each basket. Data were analyzed by analysis of variance single factor tests and t tests assuming unequal variances.

Result(s): In the ureteral model, the Halo had the fastest average rate of stone extraction for experts and novices (0:02+/-0:01 and 0:08+/-0:04 min, respectively), as well as the overall fastest average stone extraction rate (0:08+/-0:06 min). No statistical significant differences in extraction times between baskets were identified in the resident group. In the novice group, the Halo stone extraction rate was significantly faster than the OptiFlex (P=0.029). In the expert group, the OptiFlex had statistically significant slower average extraction rates compared with the Halo (P=0.005) and the N-Circle (P=0.017). In the caliceal model, no statistically significant differences were noted.

Conclusion(s): While no significant differences were noted in extraction times for the caliceal model, the extraction times for the ureteral model were slowest with the OptiFlex basket. Other

variables important in selection of the appropriate basket include operator preference, clinical setting, and cost. Copyright © Mary Ann Liebert, Inc.

PMC Identifier

20977371 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=20977371>]

Status

Embase

Institution

(Korman, Hendlin, Chotikawanich) Department of Urology, University of Minnesota, Minneapolis, MN, United States (Monga) Glickman Urological and Kidney Institute, Cleveland Clinic, Cleveland, OH, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2011

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809.

In vitro evaluation of nitinol stone retrieval baskets for flexible ureteroscopy.

Netsch C., Herrera G., Gross A.J., Bach T.

Embase

Journal of Endourology. 25(7) (pp 1217-1220), 2011. Date of Publication: 01 Jul 2011.

[Conference Paper]

AN: 362123064

Background and Purpose: Because of increased clinical relevance of retrograde intrarenal surgery (RIRS), a variety of stone retrieval baskets have been introduced into endourology.

Differences in shape and material may have consequences in performance and efficacy of RIRS.

The aim of the study was to evaluate the in vitro performance of multiple commercially available nitinol retrieval baskets.

Material(s) and Method(s): Ten manufacturers of baskets for RIRS were invited to participate in this evaluation. The evaluation included measurement of the basket's internal resistance toward deflection, the influence on the deflection angle of a flexible ureteroscope (URF-P5, Olympus), and basket function in maximum deflection of the scope. All measurements were performed five times.

Result(s): Nine manufacturers, providing a total of 15 baskets, decided to participate in this evaluation. Maximum deflection of the ureteroscope (275 degrees) was achieved in 12 baskets and reduced in 3. In maximum deflection, complete opening of the basket was possible in 13 samples. In one case, partial opening of the basket was possible; one basket failed. The measurement of the basket's internal resistance showed wide variations (5.97 to 38mm deflection/g), consecutively leading to increased inner radius of the fully deflected scope in 10 of 15 tested samples.

Conclusion(s): The tested baskets showed wide variations in their resistance toward bending. Influence on overall deflection capacity seems minor, however. On the other hand, higher resistance leads to increased inner radius of the fully deflected renoscope, which may alter functionality. Knowledge about the basket's key feature and differences in basket performance may be crucial to choose the best tool for the patient. © 2011 Mary Ann Liebert, Inc.

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21682599 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=21682599>]

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Embase

Institution

(Netsch, Herrera, Gross, Bach) Department of Urology, Asklepios Hospital Barmbek, Rubenkamp 220, 22291 Hamburg, Germany

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Year of Publication

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810.

Evaluating the definition of "stone free status" in contemporary urologic literature.

Deters L.A., Jumper C.M., Steinberg P.L., Pais Jr. V.M.

Embase

Clinical Nephrology. 76(5) (pp 354-357), 2011. Date of Publication: November 2011.

[Article]

AN: 362995550

Objective: There is no standardized definition of stone free after renal stone surgery. The lack of standardization prompted a review of the current urologic literature, to assess the definitions of stone free status, and how imaging is used to determine stone free status.

Method(s): A literature search on for the MeSH terms for percutaneous nephrolithotomy (PCNL), ureteroscopy with lithotripsy, shock wave lithotripsy (SWL), and laser lithotripsy, published in English between January 2007 and January 2010 was performed. Case reports, articles not evaluating stone free outcomes, and review articles were excluded. Articles were evaluated for the treatment modality, definition of stone free status, and the imaging modality employed to determine stone free status.

Result(s): This search yielded 417 articles of which 249 met inclusion criteria. Stone free was defined in 169 articles (68%). The most common definition of stone free was "no stones" (47%), but a total of seven different definitions were encountered. The most common treatment modality was PCNL (47%), followed by SWL (33%), and URS (13%). The most common detection modality was KUB alone (28%), the second most common being KUB and US combined (22%).

Conclusion(s): Nearly one-third of articles evaluating surgical management of urinary calculi do not define stone free status; when stone free is defined, there is wide variation as to that definition. Furthermore, vast differences exist in the type of imaging used to define stone free status. The urologic community should standardize the reporting of stone free outcomes in the urologic literature. © 2011 Dustri-Verlag Dr. K. Feistle.

PMC Identifier

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Institution

(Deters, Jumper, Steinberg, Pais Jr.) Dartmouth Hitchcock Medical Center, Lebanon, NH, United States

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Dustri-Verlag Dr. Karl Feistle (Bajuwarenring 4, Oberhaching 82041, Germany)

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811.

Polyscope: A new era in flexible ureterorenoscopy.

Bansal H., Swain S., Sharma G.K., Mathanya M., Trivedi S., Dwivedi U.S., Singh P.B.

Embase

Journal of Endourology. 25(2) (pp 317-321), 2011. Date of Publication: 01 Feb 2011.

[Article]

AN: 361380172

Introduction: Despite improvements in instrumentation and technology in flexible ureteroscopy, the issue of procedural and off-procedural damage remains a problem. The aim of our study was to highlight our initial experience in flexible ureteroscopy using polyscope, a new advancement in the era of flexible ureterorenoscopy.

Material(s) and Method(s): In this study, we used an 8F modular flexible, steerable polyscope for diagnostic purposes and Dormia basket removal for small renal stones. Three outer disposable catheters were used with proper sterilization in 22 cases.

Result(s): The polyscope was used in six cases of undiagnosed hematuria, and biopsy was taken from pelvic growth in one patient, which turned out to be transitional-cell carcinoma. Polyscope was used for removal of residual stones or small stones (<1 cm) using Dormia basket in 16 cases (from August 2008 to July 2009). The mean stone size was 7.5 mm. The vision achieved was excellent in all the cases.

Conclusion(s): Minimally invasive techniques are preferred for treatment of renal stones. The problem of lower caliceal stone access has been solved with the primary and secondary deflection of modern flexible ureteroscopes. The modular design of polyscope makes it a more cost-effective option. Relatively cheap and disposable multilumen catheters preclude the need for sterilization of optic cable, thus decreasing the chances of handling-related damages. The chance of instrument-related infection is minimal. Besides, it can be used as a semirigid ureteroscope should the need arises. Copyright 2011, Mary Ann Liebert, Inc.

PMC Identifier

21067274 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=21067274>]

Status

Embase

Institution

(Bansal, Swain, Sharma, Mathanya, Trivedi, Dwivedi, Singh) Department of Urology, Institute of Medical Sciences, Banaras Hindu University, Varanasi 221005, India

Publisher

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Year of Publication

2011

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812.

The natural history of renal stone fragments following ureteroscopy.

Rebuck D.A., MacEjko A., Bhalani V., Ramos P., Nadler R.B.

Embase

Urology. 77(3) (pp 564-568), 2011. Date of Publication: March 2011.

[Article]

AN: 51165297

Objectives To describe the natural history of postureteroscopic renal stone fragments ≤ 4 mm based on computed tomography (CT) follow-up. The goal of ureteroscopy is to fragment stones, actively basket and remove fragments larger than 1 mm, and allow the remaining fragments to pass spontaneously. The reality is that smaller fragments may be difficult to extract or may be missed. **Methods** Patients treated with ureteroscopy and holmium laser lithotripsy for urolithiasis by a single surgeon from May 2001 to July 2008 at a tertiary referral center were identified. Patients with residual renal fragments measuring ≤ 4 mm on initial postoperative CT and at least one additional follow-up CT were included. Outcomes measured were fragment growth and location, stone event (emergency department visit, hospitalization, or additional intervention), and spontaneous fragment passage. **Results** Of 330 ureteroscopies, 51 met inclusion criteria. For these patients, the mean follow-up duration was 18.9 months (1.6 years). Among 46 ureteroscopies for calcium-based stones, 9 patients (19.6%) experienced a stone event, 10 patients (21.7%) spontaneously passed their fragments, and the remaining 27 patients (58.7%) retained asymptomatic residual fragments. Among this asymptomatic group, mean fragment sizes were similar at 2.7, 3.3, 3.5, and 3.0 mm at mean follow-up durations of 2.8, 10.2, 16.8, and 33.0 months, respectively. **Conclusions** This study suggests that among patients with postureteroscopic renal stone fragments ≤ 4 mm, approximately one in five (or 19.6%) will experience a stone event over the following 1.6 years. The remaining patients will either become stone-free via spontaneous passage or retain asymptomatic stable-sized fragments. © 2011 Elsevier Inc.

PMC Identifier

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Institution

(Rebuck, MacEjko, Bhalani, Ramos, Nadler) Department of Urology, Northwestern University, Feinberg School of Medicine, 675 North St. Clair Street, Chicago, IL 60611, United States

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Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

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813.

Ex-vivo ureteroscopy at the time of live donor nephrectomy.

Schade G.R., Wolf Jr. J.S., Faerber G.J.

Embase

Journal of Endourology. 25(9) (pp 1405-1409), 2011. Date of Publication: 01 Sep 2011.

[Article]

AN: 362528813

Background and Purpose: Potential transplant renal allograft recipients exceed the number of donors. Our institution now considers patients with small, unilateral, nonobstructing, incidental renal calculi for possible renal donation. We adopted ex-vivo ureteroscopy (ExURS) to render these kidneys stone free at the time of renal transplantation. We examined the safety and efficacy of ExURS.

Patients and Methods: After confirming a lack of significant metabolic defects on 24-hour urinalysis, 23 patients with small nonobstructing unilateral nephrolithiasis detected on preoperative CT angiography underwent donor nephrectomy. Immediately after cold perfusion, ExURS was performed with ice cold saline irrigation. Retrospective review was performed.

Result(s): Pyeloscopy was successfully performed in all 23 patients. A total of 28 calculi, mean largest diameter 3.9 mm (range 3-6 mm), were visualized in 19 kidneys. Basket extraction and holmium laser lithotripsy was performed in 12 and 6 kidneys, respectively. Treatment rendered 17/19 stone-containing kidneys stone free with a mean treatment time of 6.2 minutes (3-10 min). There were no intraoperative complications. Median serum creatinine level of recipients at 1 month and 1 year were 1.4+/-1.8 mg/dL and 1.3+/-0.6 mg/dL, respectively. At a median follow-up of 63+/-47.2 months, there were no transplant urinary calculi among the recipients.

Conclusion(s): ExURS safely renders live donor kidney allografts stone free with low risk of recurrence. When used appropriately, ExURS could safely increase the number of potential kidney donors and minimize the risk of adverse stone events. © Copyright 2011, Mary Ann Liebert, Inc.

PMC Identifier

21711138 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=21711138>]

Status

Embase

Institution

(Schade, Wolf Jr., Faerber) Department of Urology TC 3875, University of Michigan Health System, 1500 E. Medical Center Drive, Ann Arbor, MI 48109-5330, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2011

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814.

Small-diameter nitinol stone baskets: Radial dilation force and dynamics of opening.

Korman E., Hendlin K., Monga M.

Embase

Journal of Endourology. 25(9) (pp 1537-1540), 2011. Date of Publication: 01 Sep 2011.

[Article]

AN: 362528811

Purpose: To evaluate the radial dilation force and basket opening dynamics of three small (<1.5F) stone baskets.

Material(s) and Method(s): Boston Scientific OptiFlex (1.3F), Cook N-Circle Nitinol Tipless Stone Extractor (1.5F), and Sacred Heart Medical Halo (1.5F) baskets were tested for radial dilation force in 10 repetitions using a floating block atop a stationary block secured to a digital scale. The floating block, attached to a plastic frame and base, pressed down on the scale to measure the radial dilation of the open basket while being passed through the cylindrical opening between the blocks. These same baskets were tested in triplicate for basket width in 0.5- to 2-mm length increments using a mechanical caliper under optical light microscope visualization to evaluate the linearity of basket opening and length at which target basket width (5 mm) was reached.

Result(s): The Sacred Heart Medical Halo had the best radial dilation (2.97+/-0.22 g), followed by the Cook N-Circle (1.29+/-0.04 g), and finally Boston Scientific OptiFlex (1.19+/-0.12 g). The N-Circle was the only basket to exhibit linear opening, while the Halo exhibited an exponential curve. The OptiFlex exhibited a polynomial curve, with linear opening across the midrange of the basket length. From these curve equations, the target basket width (5 mm) was calculated. The N-Circle and the OptiFlex reached the target basket width at a basket length of 9.4 mm and 9.6 mm, respectively. The Halo reached the target basket width at a basket length of 11.5 mm.

Conclusion(s): The radial dilation force differs significantly among commercial baskets and may affect ureteral stone extraction. Linear basket opening may provide the physician more control in stone retrieval. © Copyright 2011, Mary Ann Liebert, Inc.

PMC Identifier

21438676 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=21438676>]

Status

Embase

Institution

(Korman, Hendlin, Monga) Department of Urologic Surgery, University of Minnesota, Minneapolis, MN, United States (Monga) Glickman Urological and Kidney Institute, Cleveland Clinic, Cleveland, OH 44195, United States

Publisher

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Year of Publication

2011

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815.

Retrograde transureteral approach: A safe and efficient treatment for recurrent cystine renal stones.

Ruggera L., Zanin M., Beltrami P., Zattoni F.

Embase

Urological Research. 39(5) (pp 411-415), 2011. Date of Publication: October 2011.

[Article]

AN: 51212613

Most patients presenting cystinuria require multiple urological procedures during their lifetime. In this kind of patients the availability of minimally invasive procedure represents an advantage of minimizing the cumulative morbidity of several repeated treatments. Herein we report our experience using ureterorenoscopy (URS) for the treatment of recurrent renal cystine stones. From 2003 to 2007, 10 patients (4 males and 6 females) with one or multiple recurrent renal cystine stones underwent URS. Overall, 21 procedures have been performed. Mean maximum diameter of stones was 11.2 mm (range 5-30 mm). Either 8-9.5 F semirigid or 7.9 F flexible ureteroscopes were used. In 6 cases, stones were removed using a basket; in 9 procedures laser lithotripsy with flexible scope was performed; in 6 cases renal calculi were pulled down in the ureter using flexible instrument and then shattered with laser introduced by semirigid instrument. Stone-free status was defined as the absence of any residual fragment. A complete stone clearance was obtained in 15 out of 21 procedures (71%). In 5 cases (24%) significant residual fragments occurred; in the remaining case (5%) URS was ineffective. In 5 out of these unsuccessful procedures, stone clearance was obtained with auxiliary treatments. The last patient has not been treated yet. No major complications occurred as a result of the procedures. URS offers excellent advantages in case of recurrent hard calculi such as cystine stones. Minimally invasive procedures allow satisfactory outcomes, improving patients' quality of life. © 2010 Springer-Verlag.

PMC Identifier

21193905 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=21193905>]

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Embase

Institution

(Ruggera, Zanin, Beltrami, Zattoni) Urology Clinic, University of Verona, Verona, Italy

Publisher

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Year of Publication

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816.

Place of the ureteroscopy in the treatment of the children urolithiasis. Place de l'ureteroscopie dans le traitement de la lithiase chez l'enfant <Place de l'ureteroscopie dans le traitement de la lithiase chez l'enfant.>

Fotso Kamdem A., Tekaili Y., Boillot B., Dodat H., Aubert D.

Embase

Progres en Urologie. 20(3) (pp 224-229), 2010. Date of Publication: March 2010.

[Article]

AN: 50642399

Objective: To determine the efficiency and the role of ureteroscopy in the treatment of urolithiasis in children.

Method(s): A multicenter retrospective study was conducted between January 2006 and March 2008 in the department of pediatric surgery and urology of Besancon, Lyon and Grenoble. The clinical data of 17 children having benefited from one or more ureteroscopy procedures for urolithiasis were analyzed. These data concerned age, sex, antecedents of metabolic diseases, existence of a malformed uropathy, how the urolithiasis was discovered, therapeutic indications, endoscopic procedures, type of endoscopic treatment for urolithiasis, results and complications.

Result(s): Twenty-six ureteroscopies were carried out for 17 children (eight girls and nine boys) aged between 9 months and 12 years (mean: 5 1/2 years old) as a first-line treatment or after extracorporeal shock wave lithotripsy. A 6/7,5 Fr semi-rigid ureteroscope was used in all case. Only once, the operator chose a flexible ureteroscope. Lithotripsy was carried out 15 times with YAG Holmium laser, four times with Swiss Lithoclast and six times by simple extraction with a Dormia type basket .A stent probe was left in place after endoscopy for 14 children. The "stone free" rate was 88% with an average hindsight of 11 months. Two incidents without major complication were recorded: a section of the guide by the laser beam and a perforation with extravasation of the contrast agent.

Conclusion(s): Ureteroscopy is the first-line treatment in isolated ureteral urolithiasis. On the other hand, LEC remains the treatment of choice for Starghon calculi, since LIC should be offered only in the event of failure of LEC. © 2009.

PMC Identifier

20230946 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=20230946>]

Institution

(Fotso Kamdem) Service de chirurgie pediatrique, CHU de Besancon, 2, place Saint-Jacques, 25030 Besancon cedex, France (Tekaili) Clinique universitaire de chirurgie pediatrique, hopital A.-Michallon, BP 217, 38043 Grenoble cedex 09, France

(Boillot) Clinique universitaire de chirurgie urologique et de transplantation renale, hopital A.-Michallon, BP 217, 38043 Grenoble cedex 09, France

(Dodat) Hopital Femme-Mere-Enfant, aile A1, 59, boulevard Pine, 69677 Bron cedex, France

(Aubert) Service de chirurgie pediatrique, hopital Saint-Jacques, CHU de Besancon, 2, place Saint-Jacques, 25030 Besancon cedex, France

Publisher

Elsevier Masson SAS (62 rue Camille Desmoulins, Issy les Moulineaux Cedex 92442, France)

Year of Publication

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817.

Endoscopic removal of renal stones through laparoscopic access of the ureter and the pelvis. Ureterorenoscopie perlaparoscopie dans le traitement des calculs du rein <Ureterorenoscopie perlaparoscopie dans le traitement des calculs du rein.>

Mongiat-Artus P., Almeida-Neto D., Meria P., Tariel E., Cortesse A., Desgrandchamps F.

Embase

Progres en Urologie. 19(1) (pp 21-26), 2009. Date of Publication: January 2009.

[Article]

AN: 354031915

Purpose: We studied the efficiency and the morbidity of endoscopic removal of kidney stones during laparoscopic removal of ureteral stone.

Material(s) and Method(s): Six patients presenting with an ureteral stone resisting to ESWL and four patients presenting with an UPJ obstruction were studied. Every patient had one to five associated kidney stones. The patients were operated with transperitoneal laparoscopic ureterolithotomy or pyeloplasty. An endoscopy of the upper urinary tract was realized during the same operating time through laparoscopic access. A flexible ureteroscope (five cases) or semi-flexible ureteroscope (one case) were used after ureterolithotomy. A fibroscope (four cases) was used before pyeloplasty. The endoscope was introduced through the port of the iliac fossa and the stones were extracted with a basket grasper. The patients were followed by abdominal plain film 12 weeks after surgery, by IPV six weeks after surgery and then annually with abdominal plain film and ultrasound.

Result(s): No operative complication arose. Nine of 10 patients had a complete extraction of the kidney stones (one patient had an extraction only of four out of five kidney stones). No damage of any endoscope was observed. At a minimum follow-up of 18 months, no fistula nor stenosis of the ureter was diagnosed.

Conclusion(s): Endoscopic removal of kidney stones through laparoscopic access of the upper urinary tract is effective, sure and reproducible. Such procedure requires experience in laparoscopy and endoscopy of the upper urinary tract. The evaluation of this procedure must be pursued. © 2008 Elsevier Masson SAS. All rights reserved.

PMC Identifier

19135638 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=19135638>]

Institution

(Mongiat-Artus, Almeida-Neto, Meria, Tariel, Cortesse, Desgrandchamps) Service d'urologie, hopital Saint-Louis, universite Paris-7-Denis-Diderot, 1, avenue Claude-Vellefaux, 75005 Paris, France

Publisher

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818.

Ureteroscopy in pregnant women for ureteral stone.

Travassos M., Amselem I., Filho N.S., Miguel M., Sakai A., Consolmagno H., Nogueira M., Fugita O.

Embase

Journal of Endourology. 23(3) (pp 405-407), 2009. Date of Publication: 01 Mar 2009.

[Article]

AN: 354812755

Introduction: The occurrence of urolithiasis in pregnancy represents a challenge in both diagnosis and treatment of this condition, because it presents risks not only to the mother but also to the fetus. Surgical treatment may be indicated for patients with infection, persistent pain, and obstruction of a solitary kidney. We present our experience on the management of pregnant patients with ureteral calculi and a review of the literature.

Material(s) and Method(s): The charts of 19 pregnant patients with obstructive ureteral calculi were retrospectively reviewed. Gestational age ranged from 13 to 33 weeks. In all patients, ureteral stone was diagnosed on abdominal ultrasound. In regard to localization, 15 calculi were in the distal ureter, 3 in the proximal ureter, and 1 in the interior of an ureterocele. Calculi size ranged from 6 to 10mm (mean, 8mm). The following criteria were used to indicate ureteroscopy: persistent pain with no improvement after clinical treatment, increase in renal dilation, or presence of uterine contractions. Nine patients (47.3%) were submitted to ureteroscopy. All calculi (100%) were removed with a stone basket extractor under continuous endoscopic vision. None of the calculi demanded the use of a lithotripter.

Result(s): Nine patients (47.3%) treated with clinical measurements presented no obstetric complications and spontaneous elimination of the calculi. Nine patients (47.3%) submitted to ureteroscopy had no surgical complications. There was remission of pain in all cases after ureteroscopy and ureteral catheter placement.

Conclusion(s): The diagnosis and treatment of ureteral lithiasis in pregnant women present potential risks for the fetus and the mother. Conservative management is the first option, but ureteroscopy may be performed with safety and high success rates. © Copyright 2009, Mary Ann Liebert, Inc. 2009.

PMC Identifier

19309301 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=19309301>]

Status

Embase

Institution

(Travassos, Fugita) Department of Urology, Sao Paulo State University, Botucatu, Brazil

(Amselem, Filho, Miguel, Fugita) Department of Urology, Hospital Sao Camilo Santana, Sao Paulo, Brazil

(Sakai, Consolmagno, Nogueira, Fugita) Department of Surgery, Hospital Universitario-USP, Sao Paulo, Brazil

(Fugita) Department of Urology, Faculdade de Medicina de Botucatu, UNESP, Av. Indianapolis, 2244, 04062-002 Sao Paulo, Brazil

Publisher

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819.

Efficacy of combining flexible and rigid ureteroscopy for transurethral lithotripsy.

Shigemura K., Yasufuku T., Yamashita M., Arakawa S., Fujisawa M.

Embase

Kobe Journal of Medical Sciences. 56(1) (pp 24-28), 2010. Date of Publication: 2010.

[Article]

AN: 359537281

Transurethral lithotripsy (TUL) is a common procedure in urology. However, controversy persists about how to deal with stones pushed up into kidney from the ureter during the procedure of TUL. This study investigated the efficacy of combining flexible ureteroscopy and rigid ureteroscopy for pushed-up stones into kidney during TUL. Forty-one patients underwent TUL by a single surgeon

from July 2007 to May 2009. Eight cases resulted in pushed-up stones during operation or involved existing kidney stones. We used a Zero-tip or Litho Catch Basket catheter and a flexible ureteroscope to carry these stones in kidney down into the ureter where the rigid ureteroscope could then reach and handle the stone for lithotripsy or being taken away. A Lithoclast system was used for lithotripsy. Five cases involved stones pushed up during surgery and 3 cases involved stones already in the kidney in detail. We pulled the stones down into the ureter in all cases and successfully completed lithotripsy or removed the stone, thus avoiding the performance of additional extracorporeal shock wave lithotripsy (ESWL). In conclusions, combined use of flexible ureteroscopy and rigid ureteroscopy for upper urinary tract stones pushed up into the kidney during TUL or renal stones could be useful for avoiding additional ESWL.

PMC Identifier

21063143 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=21063143>]

Status

Embase

Institution

(Shigemura, Yamashita) Department of Urology, Akashi Municipal Hospital, Japan (Shigemura, Yasufuku, Arakawa, Fujisawa) Division of Urology, Department of Organ Therapeutics, Faculty of Medicine, Kobe University Graduate School of Medicine, Japan

Publisher

Kobe University School of Medicine (7-5-1, Kusunoki-cho, Chuo-ku, Kobe 650-0017, Japan)

Year of Publication

2010

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820.

Flexible ureterorenoscopy (URS): Technique and results. Ureterorrenoscopia (URS) flexible: Técnica y resultados <Ureterorrenoscopia (URS) flexible: Técnica y resultados.>

Alcaide J.R.C., Elbers J.R., Perez D.L., Rodriguez S.S., Bazan A.A., Tous A.R., Togores L.H., La J.D., Barthel. P.

Embase

Archivos Espanoles de Urologia. 63(10) (pp 862-870), 2010. Date of Publication: December 2010.

[Article]

AN: 361082264

OBJECTIVES: This paper has two main objectives: First, to expose the URS technique used in our Department because there are important differences with respect to others centres published, explaining same aspect that can benefit to the better development of the technique. Second, we present the results of a series of 100 cases. Flexible ureterorenoscopy (Flex URS) has been little used to date, mainly because of the technical difficulties created by the deficient quality of the instruments used, such as ureteroscopes offering scant visibility, poor illumination, a small working channel, deficient quality of the forceps and baskets, etc.

METHOD(S): We present our recent series of flexible URS for the treatment of renal lithiasis. We performs a retrospective analysis of this treatment corresponding to the period between January 2007 and March 2010. In this period we have treated 100 patients. The medium size of the stone treated is 1.5cm (0.5-6cm) and we used ureteroscopic protector sheath in all cases. The lithotripter system used in all cases was Ho:YAG Laser with 200 and 365 micras fibers

RESULTS: The stone-free rate (SFR) in the immediate postoperative period was 77% (77/100 patients). Residual stones, defined as stone fragments visualized in the operating room via fluoroscopy and directly with the flexible ureteroscope. Three months after surgery, the SFR was 92.7% (89/96 patients) confirmed by intravenous urography. Regarding complications, we had 5 patients with ureteral lesions during protector sheath pass and 9 patients that presented at the emergency room with pain secondary to the double J catheter.

CONCLUSION(S): Flexible URS for of renal lithiasis can be defended in stones measuring up to 2 cm in diameter, based on our treatment algorithm.

PMC Identifier

21187569 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=21187569>]

Institution

(Alcaide, Elbers, Perez, Rodriguez, Bazan, Tous, Togores, La, Barthel.) Servicio de Urologia, Hospital Universitario La Paz, Pso. de la Castellana, 261, 28046 Madrid, Spain

Publisher

Iniestares, S.A. (General Ampudia, 14-Bajo a, Madrid 28003, Spain)

Year of Publication

2010

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821.

SolidFlex--the fourth generation in endoscopy.

Castellanos J.A.

Embase

Archivos espanoles de urologia. 62(7) (pp 573-579), 2009. Date of Publication: Sep 2009.

[Article]

AN: 355897519

OBJECTIVES: To design and develop the fourth generation in endoscopy after the rigid, semirigid and flexible instruments. This next generation technology has been named SolidFlex, and it was designed by a surgeon based on many years of research with the objective to provide easier and faster solutions for physicians when performing endoscopic procedures.

METHOD(S): This new endoscope called SolidFlex has been brought to light with the latest technology to provide surgeons of every age the capabilities to carry out any possible endoscopic procedure. SolidFlex is state-of-the-art in both design and construction, giving the the weight of the usual flexible endoscope. The Instrument is ergonomic, intuitive (instinctive perception) and coherent, meaning that the handle control moves the instrument's active flexible section towards predictable, pre-selected areas, driving the procedure fluidly throughout. It provides the stability of a rigid and semirigid instrument with the exploration capabilities of the flexible endoscope in order to achieve the best means of rendering a patient 100% stone free.

RESULT(S): The SolidFlex ureteroscope prototype has retrieved urinary stones in 9 patients and 11 renal units. These procedures were divided in two groups: Group I, pre-stented after double "J" withdrawal for a previous renal colic episode. Group II, during the acute renal colic episode. Ureteral dilatation was carried out only in Group II and after dilatation in both groups, insertion up to the renal pelvis or the area where the obstruction was present, took only a matter of 15 seconds

at the most. All procedures could be completed in each group and stones in the renal papilla from 200 nm, to 4 mm in any given papilla were removed either by laser energy, retrieved with a basket or both. Patients did not experience any pain or major discomfort after the procedure, and no analgesic medication was required, nor requested by any of the patients.

CONCLUSION(S): The new SolidFlex technology has been tested in surgery and proven to solve most of the difficulties faced by surgeons when performing endoscopic surgery. The surgeon can perform surgery comfortably seated, so that he/she can easily introduce and maneuver the instrument, and introduce operating tools without help or coordination from anyone else during critical moments such as stone extraction. A urologist made the SolidFlex research and development for the benefit of physicians and patients, and it does solve many of the issues and limitations that surgeons face today with the rigid, semi-rigid and flexible endoscope technology.

PMC Identifier

19815969 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=19815969>]

Institution

(Castellanos) Department of Urology, Hospital Angeles de las Lomas, Huixquilucan, Estado de Mexico.

Year of Publication

2009

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[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

822.

Staghorn calculi: Single percutaneous traject experience on 263 cases.

Geavlete P.A., Mirciulescu V.A., Cauni V., Georgescu D.A., Multescu D.R.

Embase

European Urology, Supplements. Conference: 25th Anniversary Congress of the European Association of Urology, EAU. Barcelona Spain. Conference Publication: (var.pagings). 9(2) (pp 339-340), 2010. Date of Publication: April 2010.

[Conference Abstract]

AN: 70147268

Introduction & Objectives: Flexible nephroscopy improved the endourologic treatment of staghorn calculi, thus making possible the approach using a single tract. This study aimed to evaluate the possibility of rendering stone-free a patient with staghorn calculi using rigid and flexible nephroscopy through a single infracostal tract.

Material(s) and Method(s): Between July 2004 and July 2009, rigid and flexible nephroscopy have been performed on 263 patients with staghorn calculi: 165 with partial staghorn calculi (one case with staghorn calculi with an ureteral segment of 2 cm) and 98 with complete staghorn calculi. In most of the cases, we used a 24 F Storz rigid and a 15 F flexible nephroscope, as well as ballistic, electrohydraulic and Ho:YAG Laser lithotripsy devices. For stone fragments removal, we used flexible grasping forceps and Nitinol tipless basket.

Result(s): A single infracostal percutaneous tract was used in all cases: 225 by inferior calyx and 38 by medium calyx. The first endoscopic step of the procedure was represented by rigid nephroscopy with ballistic lithotripsy and removal of the accessible stones, followed by flexible nephroscopy for the inaccessible calices. In 4 cases, flexible instruments were used for the extraction of the migrated stone fragments from the upper ureter. The procedure had one step in 64 cases, two-steps in 188 cases, and three-steps in 11 cases. The global stone-free rate using single access tract PCNL was 92.4% (243/263 cases). The complications' rate was 11.8%, and included bleeding requiring transfusion (3 cases), lumbar fistula imposing ureteral stenting (8 cases), nephrostomy tube displacement (4 cases), fever (5 cases) and UTI (11 cases). The median operating time was 112 minutes for the first procedure, 51 for the second and 48 for the third one.

Conclusion(s): Combined rigid and flexible percutaneous approach using single infracostal access tract for staghorn calculi is a feasible technique with a good stone-free rate. The use of flexible nephroscopy decreases the need for additional access tracts.

Status

CONFERENCE ABSTRACT

Institution

(Geavlete, Mirciulescu, Cauni, Georgescu, Multescu) Saint John Clinical Emergency Hospital,
Dept. of Urology, Bucharest, Romania

Publisher

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Year of Publication

2010

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823.

Complication rate of day-surgery ureteroscopy for ureteral lithiasis.

Paéz Borda A., Redondo E., Saenz J., Crespo L., Llanes L., Fernandez L., Rendon D., Olarra J., Alvarez M.

Embase

European Urology, Supplements. Conference: 25th Anniversary Congress of the European Association of Urology, EAU. Barcelona Spain. Conference Publication: (var.pagings). 9(2) (pp 203), 2010. Date of Publication: April 2010.

[Conference Abstract]

AN: 70146804

Introduction & Objectives: Ambulatory ureteroscopy offers advantages both to patients and providers. Nevertheless, the literature is deficient in studies on postoperative outcomes. This study aims to determine the postoperative complication rate within 30 days after day-surgery ureteroscopy for ureteral lithiasis at a public surgical centre.

Material(s) and Method(s): All patients requiring elective ureteroscopy for ureteral lithiasis from June 2004 to September 2009 were considered for a day-surgery procedure. Unfit patients (ASA score >2) were excluded. Ho-Laser fragmentation (33%), basket extraction (12.8%) and forceps manipulation (39.5%) were the standard auxiliary procedures. Post-ureteroscopy stenting was the rule (205/220, 93.2%). Demographic (age and gender) and clinical data (type of anaesthesia and primary stone treatment) were collected. Using the local database an algorithm was created to detect any postoperative complication within 30 days after surgery. Non-related events were manually deleted. To identify patients more prone to suffer postoperative complications, the chi square and Fisher's exact tests were used. A logistic regression model was created to compare the effect of every variable (age, gender, type of auxiliary procedure, type of anaesthesia and ureteral stenting) in presence of the rest of covariates.

Result(s): Eventually, two-hundred and twenty (220) consecutive patients (mean age 45 +/-12 yrs, 19-79) were available for analysis. General anaesthesia was the preferred anaesthetic

procedure (144/220, 65.5%). In 26 patients (26/220, 11.8%) the procedure had to be aborted due to technical problems (stone migration, ureteral stenosis or laser unit failure). Overall, fifty-nine patients (59/220, 26.2%) experienced postoperative complications. In 15 cases (15/220, 6.8%) discharge was postponed. No deaths were identified. No clear-cut relationships between the independent prognostic factors and the chance of complication were proved ($p=ns$). Similarly, only the type of auxiliary method independently affected the chance of complication, with stone manipulation (forceps manipulation+basketing) resulting in the lowest risk of complication (relative risk 4, 1.2-13.5, $p=0.026$).

Conclusion(s): It was not possible to define the ideal patient profile for day-surgery ureteroscopy. When feasible, gentle stone manipulation resulted in the lowest rate of complication. Observed postoperative complication rate was limited and supports the philosophy of ambulatory ureteroscopy.

Status

CONFERENCE ABSTRACT

Institution

(Paez Borda, Redondo, Saenz, Crespo, Llanes, Fernandez, Rendon, Alvarez) University Hospital of Fuenlabrada, Dept. of Urology Fuenlabrada, Madrid, Spain (Olarra) University Hospital of Fuenlabrada, Dept. of Anaesthesiology Fuenlabrada, Madrid, Spain

Publisher

Elsevier

Year of Publication

2010

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824.

Criteria to predict successful stone treatment utilizing a disposable flexible ureteroscope.

Lowry P.

Embase

Journal of Urology. Conference: 2010 Annual Meeting of the American Urological Association, AUA. San Francisco, CA United States. Conference Publication: (var.pagings). 183(4 SUPPL. 1) (pp e497), 2010. Date of Publication: April 2010.

[Conference Abstract]

AN: 70144959

INTRODUCTION AND OBJECTIVES: The expensive cost of maintenance for flexible ureteroscopes leads to strategies which will decrease damage to flexible ureteroscopes. We have previously examined shown the effectiveness of a novel disposable flexible ureteroscope in certain situations. The goal of this study was develop criteria which would result in successful surgery using only the disposable flexible ureteroscope. By decreasing usage, we hope to prevent the resultant deterioration of the effective, yet expensive and fragile traditional flexible ureteroscopes.

METHOD(S): Seven patients were screened for surgery by the following criteria: 1) Solitary renal stone less than or equal to 7 mm in the upper or mid pole. 2) Solitary ureteral stone less than or equal to 7 mm in the upper or mid ureter, only if a rigid ureteroscope was unable to access the stone. 3) Less than 5 small renal stones (less than or equal to 5 mm) in the upper or mid pole. 4) Lower pole stones were excluded. 5) Anatomic variations that may cause prevent successful surgery were excluded, such as significant hydronephrosis, calyceal diverticulum, etc. Each surgery was performed with the disposable Semiflex ureteroscope made by Maxiflex.

RESULT(S): One patient had a previously unknown pinpoint ureteral stricture, preventing ureteroscopy. The remaining 6 patients were successfully treated using only the disposable flexible ureteroscope and either laser lithotripsy and/or basket extraction. In 2 cases with 6-7 mm stones requiring laser lithotripsy, traditional flexible ureteroscopy was utilized to confirm that all stone fragments had been removed.

CONCLUSION(S): Using these criteria, patients may be successfully treated using only the disposable flexible ureteroscope. We believe that judicious usage of this ureteroscope may help decrease damage and deterioration of traditional flexible ureteroscopes, which may be reserved for more complex ureteroscopic cases. As our experience and comfort with the disposable flexible ureteroscope increases, inclusion criteria for usage of this scope may expand.

Status

CONFERENCE ABSTRACT

Institution

(Lowry) TempleTXUnited States

Publisher

Elsevier Inc.

Year of Publication

2010

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825.

Withdraw of the ureterscope causes fragmented ureter stones to disperse.

Canguven O., Boz M., Bulbul M., Kafkasli A., Demirel C., Albayrak S.

Embase

European Urology, Supplements. Conference: EAU 6th South Eastern European Meeting, SEEM. Istanbul Turkey. Conference Publication: (var.pagings). 9(6) (pp 603), 2010. Date of Publication: September 2010.

[Conference Abstract]

AN: 70472006

Introduction & Objectives: Ureteroscopy has improved from the first use of ureterscope in the 1970's. Although the success rate increased in the last years, new treatment techniques are being developed for impacted and large proximal ureter stones. Pneumatic lithotripsy has high efficiency with low complication rates. However, in case of steinstrasse and large (>1 cm) ureter stones, fragmented small stones may obstruct insertion of a ureterscope after initial lithotripsy. In order to triumph over this issue, multiple ureteroscopic passages and manipulations needed for extraction of these small stones by forceps or basket catheters. The overall incidence of stricture was found upto 14. 2% when the fragments were removed with a grasping forceps or a basket. We present our technique to disperse small fragmented stones in order to contact non-fragmented rest stone.

Material(s) and Method(s): Ureteral lithotripsy was performed with an 8-9. 8 F semirigid ureterscope using a pneumatic lithotripter (Swiss LithoClast, EMS, Nyon, Switzerland). The stone was fragmented into small pieces as small as 2-3 mm. by pneumatic lithotripter. Eventually, these fragmented stones interfered with vision and the lithotripter to get in touch with the rest stone. After fragmenting distal part of the large stone, the ureterscope was pulled back out of

ureter. While pulling back, the operating channel was closed and irrigation fluid was flowing in order not to decrease pressure behind the stones. Simultaneously, a person tilted the operating table to about 30° in reverse Trendelenburg position. When the ureteroscope was out of ureteral orifice, the operating channel was opened and irrigation fluid was stopped.

Result(s): This maneuver aided decreasing pressure in the bladder more rapidly in addition to feeding tube. Stone dust and antegrade fluid flow were easily seen out of the ureteral orifice. Ureteroscope was re-inserted after 30-60 seconds. While reaching the rest of the stone, small stone dust was seen at first. Bigger stones were approximately 3-5 cm distal to the original place of the stone. When the non-fragmented rest stone appeared, there were no blocking fragmented stones. Insertion of the ureteroscope was easy and we could go on with the lithotripsy procedure. Conclusion(s): In comparison to standard position, tilting and rapid decrease in pressure by pulling back the ureteroscope made gravity and negative pressure more effective.

Status

CONFERENCE ABSTRACT

Institution

(Canguven, Boz, Kafkasli, Demirel, Albayrak) Kartal Teaching and Research Hospital, Dept. of Urology, Istanbul, Turkey (Bulbul) Aksaray State Hospital, Dept. of Urology, Aksaray, Turkey

Publisher

Elsevier

Year of Publication

2010

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826.

Flexible ureterorenoscopic laser (FURLAS) treatment of upper urethral stones.

Tokatli Z., Saglam R.

Embase

European Urology, Supplements. Conference: EAU 6th South Eastern European Meeting, SEEM. Istanbul Turkey. Conference Publication: (var.pagings). 9(6) (pp 580), 2010. Date of Publication: September 2010.

[Conference Abstract]

AN: 70471912

Introduction & Objectives: It is now common that upper urethral stones that could not be broken by ESWL are treated with retrograde ureterorenoscopic laser lithotripsy. The stones that escape into the kidney during these treatments are treated by a method called Flexible Urethra Renoscopic Laser lithotripsy. The recently developed endoscopy and laser devices have increased the effectiveness of this method, and widened the indications. This study focuses on the effectiveness of FURLAS for upper urethral stones.

Material(s) and Method(s): Between January 2008-October 2009 76 patients with ureter stones were treated with ureteroscopy. In 28 patients the stones were in the upper part of the urether. The ages of the patients ranged between 21- 65, and the number of stones were 1 in 26 patients and 2 of the patients had 2 stones. The size of the Stones ranged between 4-15mm. Five of the patients had an unsuccessful ESWL treatment. The stones were broken in 12 patients by pneumatic lithotripter (Vibrolith-Elmed-Turkey) and in 9 patients with holmium laser (AurigaXL-Starmedtech-Germany). In 7 of them the stones escaped to the kidney. In 2 of them the stones were caught by a basket catheter in the kidney. In 2 patients during the same operation FURLAS was performed. In 3 patients after rigid URS DJ kateter was placed and the stones were broken in the second session. In all of them 12F-35cm access sheath was placed. In all patients the operation was performed under fluoroscopic control. 273 micron Laser probe was used through the Storz Flex-x ureterorenoscope.

Result(s): After the operation in 11 patients DJ catheter was used. In patients who were successful in post operatuar DUSG it was seen that stones were completely fragmented and the biggest fragman was 1mm int the lower calix. The check ups one month after the operation showed in two patients 1mm fragments were found, 26 patients did not have any stones.

Conclusion(s): FURLAS proved to be an effective treatment method of upper urethral stones. While the stones may move into the kidney during the the treatment of upper urethral stones, the treatment should be done under floroscopy, flexible ureterorenoscope and laser should be ready in the theatre.

Status

CONFERENCE ABSTRACT

Institution

(Tokatli, Saglam) Yuzuncu Yil Hospital, Dept. of Urology, Ankara, Turkey

Publisher

Elsevier

Year of Publication
2010

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Link to the External Link Resolver:
[SFX](#)

827.

The comparison of stone retrieval devices used during ureteroscopic management of ureter calculi in terms of efficiency, safety, and cost affectivity.

Tepeler A., Binbay M., Akman T., Muslumanotlu A.Y.

Embase

European Urology, Supplements. Conference: EAU 6th South Eastern European Meeting, SEEM. Istanbul Turkey. Conference Publication: (var.pagings). 9(6) (pp 579), 2010. Date of Publication: September 2010.

[Conference Abstract]

AN: 70471907

Introduction & Objectives: With the advances in endourology, ureterorenoscopy (URS) has been commonly performed treatment option for the management of ureter calculi in secondary and tertian health centers. As well as the other endoscopic procedures, URS requires many surgical instruments in different steps of the procedure. Stone extraction represents the most decisive step in ureteroscopic stone treatment and distinctly influences its procedural time, effectiveness and safety. For this purpose many retrieval instruments are improved. Baskets in different size, material, configuration and wires and graspers with two or threeprong are recognized. Although there is a paper comparing these device's retrieval capabilities in ex vivo models, we retrospectively compared the graspers and baskets used by same surgeon in different health centers in terms of effectiveness, and cost effectiveness.

Material(s) and Method(s): Between 2008 and 2010, 126 patients with ureter calculi were treated with URS by the same surgeon (AT). Basket catheter was used for stone retrieval in 48 patients (Group-1) in a tertian teaching and research hospital. The other patients (n: 78, Group-2) were

treated in a state hospital and a two-prong re-usable grasper was used for stone retrieval. For stone fragmentation, Ho-YAG laser was used for Group-1 and pneumatic lithotripter was used for Group-2. Operative and postoperative findings as well as operation time, complication rate, stone size and location, and cost effectiveness of the stone retrieval were retrospectively compared.

Result(s): The stone sizes in both groups were similar (1. 4 $\pm$ 0. 4, 1. 3 $\pm$ 0. 4, respectively) ($p < 0. 05$). In Group-1 mean operation time was shorter than the time in Group-2, but it was not statistically significant (38. 6 $\pm$ 10. 7, 39. 4 $\pm$ 10. 2, respectively) ($p: 0. 6$). The stone retrieval time was found to be significantly shorter in Group-2 ($p < 0. 05$). No major complication was observed perioperatively. Entrapped basket was observed in Group-1 and managed with Ho-YAG laser successfully. Stone up migration to kidney was only noted in Group-2. And it was effectively managed with ESWL afterwards. The URS procedure was significantly cost effective in Group-2. While the cost of stone extraction per a case was 100\$ in Group-1, it was 15\$ in Group-2 ($p < 0. 0001$). During a 6 months follow-up no major or minor complication was observed.

Conclusion(s): The choice of stone extraction devices can greatly influence the efficacy, safety, length, and also cost effectiveness of the procedure. In the era of minimal invasive surgery, urologists should be informed about the functions, features and also the cost of the instruments.

Status

CONFERENCE ABSTRACT

Institution

(Tepeler) Yusuf Azizotlu State Hospital, Dept. of Urology, Diyarbakir, Turkey (Binbay, Akman, Muslumanotlu) Haseki Teaching and Research Hospital, Dept. of Urology, Istanbul, Turkey

Publisher

Elsevier

Year of Publication

2010

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The PolyScope: A novel, flexible, semi-disposable ureteroscope system.

Bader M.J., Walther S., Gratzke C., Schlenker B., Hocaoglu Y., Sroka R., Stief C.G., Reich O.

Embase

Urologe - Ausgabe A. Conference: 62. Kongresses der Deutschen Gesellschaft für Urologie.

Dusseldorf Germany. Conference Publication: (var.pagings). 49(SUPPL. 1) (pp 125), 2010. Date of Publication: September 2010.

[Conference Abstract]

AN: 70454482

Einleitung: To characterize the mechanical and optical properties of the PolyScope endoscope system and to examine clinical outcome in patients undergoing ureteronephroscopy. Material und Methoden: Mechanical assessment involved measurement of the deflection angle and irrigation flow rate. Optical resolution and distortion, field and angle of view, and light transmission and output formed the optical assessment. Clinical assessment was made in a series of consecutive ureteronephroscopy procedures. The optical chord was disconnected after each procedure and the image fiber assessed for damage. Ergebnisse: The mean value for the angle of maximum active tip deflection with an empty working channel was 265degree (261-275degree). Deflection was impaired most with insertion of the 3.0 Fr basket (10% decrease) and least with an indwelling 220 µm laser fiber (2% decrease). Irrigation flow rate was 57 mL /min with an empty working channel. Flow was reduced by 50% and 68%, with the insertion of a 200 µm or 365 µm laser probe, respectively, and by 92.5% with a 3.2 Fr basket. No damage to the image fiber occurred. PolyScope optics system could identify a target of about 0.125 mm at a distance of 2-4 mm, based on 3 L P/mm needed for clear identification. Lithotripsy of renal calculi was performed for 40 stone burdens in 32 patients; the resulting stone-free rate was 87.5%. Schlussfolgerung: The PolyScope has shown to have equivalent properties to the reusable endoscopes and overcomes the inherent fragility of such devices so reducing the need for repairs and down time.

Status

CONFERENCE ABSTRACT

Institution

(Bader, Walther, Gratzke, Schlenker, Hocaoglu, Stief, Reich) LMU Munchen, Urologische Klinik und Poliklinik, Munchen, Germany (Sroka) LMU Munchen, Insitut für Laserforschung, Munchen, Germany

Publisher

Springer Verlag

Year of Publication

2010

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829.

Ex vivo ureteroscopy in live donor nephrectomies.

Schade G.R., Wolf J.S., Faerber G.J.

Embase

Journal of Endourology. Conference: 28th World Congress of Endourology and SWL. Chicago, IL United States. Conference Publication: (var.pagings). 24(SUPPL. 1) (pp A319), 2010. Date of Publication: September 2010.

[Conference Abstract]

AN: 70295946

Introduction: Potential transplant renal allograft recipients exceed the number of donors. To increase the donor pool, we developed ex vivo ureteroscopy (ExURS) for potential donors with small unilateral nonobstructing renal calculi at the time of live-donor nephrectomy.

Purpose(s): We examine the safety and efficacy of ExURS in our experience.

Material(s) and Method(s): After confirming lack of significant metabolic defects on 24-hour urinalysis, a total of 22 patients with suspected small non-obstructing unilateral nephrolithiasis detected on preoperative imaging underwent donor nephrectomy. Immediately after cold perfusion ExURS was performed with ice cold saline irrigation. Retrospective review was performed.

Result(s): Pyeloscopy was successfully performed in all 22 cases. A total of 27 calculi, mean largest diameter 3.8mm (range 3-10), were visualized in 19 kidneys. Basket extraction and holmium laser lithotripsy was performed in 11 and 6 kidneys, respectively. Excluding intrapapillary calcifications left in situ, 21/23 visualized stones were successfully treated rendering 17/19 kidneys stone free. Mean treatment time was 6.2 minutes (3-10). At the discretion of the transplant team, ureteral stents were left in 13/22 kidneys for a mean of 40.1 days (16-75). There were no intraoperative complications. Mean serum creatinine of recipients at 1 month and 1 year

were 1.9 mg/dl (0.4-7.8) and 1.4 mg/dl (0.4-2.9) respectively. At mean follow-up of 58.5 months (1-144) there were no recurrences among recipients.

Conclusion(s): ExURS safely renders live donor kidney allografts stone free with low risk of recurrence. When used appropriately ExURS could safely increase the number of potential kidney donors.

Status

CONFERENCE ABSTRACT

Institution

(Schade, Wolf, Faerber) Department of Urology, University of Michigan, Ann Arbor, MI, United States

Publisher

Mary Ann Liebert Inc.

Year of Publication

2010

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830.

Retrograde intrarenal surgery for single intrarenal stones 2 cm or greater: An alternative to percutaneous nephrolithotomy.

Resorlu B., Bozkurt O.F., Oguz U., Unsal A.

Embase

Journal of Endourology. Conference: 28th World Congress of Endourology and SWL. Chicago, IL United States. Conference Publication: (var.pagings). 24(SUPPL. 1) (pp A227), 2010. Date of Publication: September 2010.

[Conference Abstract]

AN: 70295692

Introduction: Percutaneous nephrolithotomy (PCNL) is currently the gold standard for management of renal calculi larger than 2 cm. However, modern flexible ureteroscopes and accessories using the holmium laser lithotripsy can treat large renal stones with the potential to decrease morbidity.

Purpose(s): We present our experience with retrograde intrarenal surgery (RIRS) to manage renal stones larger than 2 cm in a selected group of patients who were not ideal candidates for PCNL because of extenuating health factors.

Material(s) and Method(s): A total of 19 patients with a single intrarenal calculi 2 cm or greater in maximum diameter who underwent RIRS were identified. A 7.5 F flexible ureteroscope, holmium laser lithotripsy, nitinol baskets and graspers were used in all patients. Success was defined as total fragmentation of the stone to <3mm in diameter and/or clear on renal imaging within the 3-month follow-up.

Result(s): Average stone size was 2.4 cm (2-3 cm) with seven located primarily in the renal pelvis, eight in lower pole, two in upper pole, and two in middle pole segments. The mean operative time was 73.2 min (55-140). The stone-free rates after one and two procedures were 68.4% and 89.5%, respectively. There were only two minor complications, including a case of hematuria that persisted for 2 days and a patient with high-grade fever, all treated conservatively.

Conclusion(s): RIRS is a safe and effective management option for select patients with renal stones larger than 2 cm, and may represent an alternative therapy to PCNL.

Status

CONFERENCE ABSTRACT

Institution

(Resorlu, Bozkurt, Oguz, Unsal) Urology, Kecioren Training and Research Hospital, Ankara, Turkey

Publisher

Mary Ann Liebert Inc.

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2010

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831.

Complications of stone baskets: 14 Years reviewed from the maude database.

Chotikawanich E., Korman E., Monga M.

Embase

Journal of Endourology. Conference: 28th World Congress of Endourology and SWL. Chicago, IL United States. Conference Publication: (var.pagings). 24(SUPPL. 1) (pp A219), 2010. Date of Publication: September 2010.

[Conference Abstract]

AN: 70295670

Introduction: Technical advances in ureteroscopes and stone retrieval devices have lead to widespread acceptance of the endoscopic management of upper urinary tract calculi. Despite the evolution of instruments and techniques, the overall complication rate for ureteroscopy has been reported as 7%.

Purpose(s): To categorize trends in failure of the stone baskets as reported in the U.S. Food and Drug Administration's Manufacturer and User Facility Device Experience database (MAUDE).

Material(s) and Method(s): We queried the MAUDE online database using the code for stone baskets (FFL) from January 1996 to December 2009. Variables extracted included type of basket, type of malfunction, type of treatment, and patient outcome.

Result(s): 556 adverse events related to stone baskets were identified. Device configurations consisted of tipped (48%), tipless (36%), forceps (8%), and Stone-Cone (8%). Type of malfunction included detachment of a portion of the basket (49%), breakage without detachment (39%) and inability to withdraw the basket (12%). Compared to the early time period studied (1996-2004) there was a 3x increase in adverse events from 2005-2007 and a 6x increase in adverse events from 2008-2009. The majority of adverse events were managed with endoscopy (79%) and open surgery (11%). 42 patients experienced serious complications, with major surgeries including ureteral reconstruction (7), reimplantation (4) and nephrectomy (7).

Conclusion(s): With increased utilization of stone baskets in the upper collecting system, the number of adverse events has increased. Urologists should remain vigilant in the prevention, recognition and management of these events.

Status

CONFERENCE ABSTRACT

Institution

(Chotikawanich, Monga) Department of Urologic Surgery, University of Minnesota, Minneapolis, MN, United States (Korman) Urologic Surgery, University of Minnesota, Minneapolis, MN, United States

Publisher

Mary Ann Liebert Inc.

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2010

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832.

Next-generation nitinol stone baskets: Radial dilation force and dynamics of opening.

Korman E., Hendlin K., Monga M.

Embase

Journal of Endourology. Conference: 28th World Congress of Endourology and SWL. Chicago, IL United States. Conference Publication: (var.pagings). 24(SUPPL. 1) (pp A218-A219), 2010. Date of Publication: September 2010.

[Conference Abstract]

AN: 70295668

Introduction: Ureteroscopic stone extraction is commonly performed for calculi in the kidney and ureter.

Purpose(s): To evaluate the radial dilation force and basket opening dynamics of three small (≤ 1.5 Fr) stone baskets.

Material(s) and Method(s): Boston Scientific Optiflex TM (1.3 Fr), Cook N-Circle Nitinol Tipless Stone Extractor (1.5 Fr), and Sacred Heart Medical Halo (1.5 Fr) baskets were tested for radial dilation force (10 repetitions) using a Teflon block atop a digital scale that measured downward force as the baskets were deployed within a cylindrical opening. These same baskets were tested in triplicate for basket width in 0.5 to 2-mm length increments using a mechanical caliper under

optical light microscope visualization in order to evaluate the linearity of basket opening and length at which target basket width (5mm) was reached.

Result(s): The Sacred Heart Medical Halo had the best radial dilation (2.97+/-0.22 g), compared to the Cook N-Circle (1.29+/- 0.04 g), and Boston Scientific Optiflex (1.19+/-0.12 g). Each basket demonstrated unique opening dynamics; linear (N-Circle), polynomial (Optiflex) and exponential (Halo). From these curve equations, the target basket width (5 mm) was calculated. The Halo took longer to reach the target basket width at a basket length of 11.5 mm, compared to the N-Circle (9.4 mm) and Optiflex (9.6 mm).

Conclusion(s): The baskets differ in characteristics that may impact basket opening in the face of ureteral edema (radial dilation force), control of deployment (linear vs. exponential), and maintenance of the basket within the field of view (length to reach target basket width).

Status

CONFERENCE ABSTRACT

Institution

(Korman) Urologic Surgery, University of Minnesota, Minneapolis, MN, United States (Hendlin, Monga) Department of Urologic Surgery, University of Minnesota, Minneapolis, MN, United States

Publisher

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Year of Publication

2010

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833.

Management of symptomatic ureteral stone in pregnant women.

Haghighi R., Etemedian M., Shadpour P.

Embase

Journal of Endourology. Conference: 28th World Congress of Endourology and SWL. Chicago, IL United States. Conference Publication: (var.pagings). 24(SUPPL. 1) (pp A206), 2010. Date of Publication: September 2010.

[Conference Abstract]

AN: 70295629

Introduction: Although ureteral stone is an infrequent in pregnancy, its occurrence presents danger for both mother and fetus.

Purpose(s): Because of risks to the mother and fetus treatment of obstructing ureteral stones during pregnancy is a challenge. We report our experience in managing pregnant patient presenting with symptomatic ureteral calculi.

Material(s) and Method(s): During a retrospective study we assessed results of 26 pregnant women presenting with symptomatic ureteral stones between 2005-2009. Mean ages of patients was 26 years (18-34). Mean age of gestational age was 23.5 weeks (10- 35). Typical renal colic was the main symptom in 16 patients, 6 and 3 patients present with nonspecific abdominal pain, and lower urinary tract symptoms respectively. In 69% of patients (18) stones was located in lower ureter. 6 stones in mid and 1 stone was located in upper ureter. 9.8 F semirigid ureteroscopy with or without pneumatic lithoclast was done in all patients.

Result(s): Obstruction was eliminated in all patients after procedure. No complication related to procedured were observed. All women had full term pregnancy. Stone free rate was achieved in about 54% of patients after procedure. Pneumatic lithotripsy with ureteral catheter was done in 10 patients. Stone was removed with grasper or basket with left ureteral catheter in 4 patients. DJ insertion was the only procedure in remaining patients, removed under local anesthesia 45 days later without any further procedure.

Conclusion(s): If intervention was indicated in pregnant women with ureteral stone, based on our result, semirigid ureteroscopy with ureteral stent insertion with or without pneumatic lithotripsy is the safe and definite treatment modality.

Status

CONFERENCE ABSTRACT

Institution

(Haghighi, Etemedian, Shadpour) Endourology, Hasheminejad Kidney Center, Tehran, Iran, Islamic Republic of

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2010

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834.

Post-operative antibiotics are not necessary after ureteroscopic stone treatment.

Eisner B.H., Kurtz M.P., Gershman B., Arsovska O., Patterson R.F., Chew B.H.

Embase

Journal of Endourology. Conference: 28th World Congress of Endourology and SWL. Chicago, IL United States. Conference Publication: (var.pagings). 24(SUPPL. 1) (pp A165), 2010. Date of Publication: September 2010.

[Conference Abstract]

AN: 70295510

Introduction: Urinary tract infections after ureteroscopic stone treatment are reported to occur in 2-25% of cases.

Purpose(s): The purpose of this study was to evaluate the rate of urinary tract infection after ureteroscopic stone treatment for which post-operative antibiotics were not administered.

Material(s) and Method(s): A retrospective review was performed of consecutive patients at two institutions. All patients were given a single dose of antibiotics prior to ureteroscopic stone treatment (cefazolin, vancomycin, or fluroquinolone). Patients were excluded if they had an indwelling stent at the time of ureteroscopy or if they were treated for a urinary tract infection within the 3 months prior to ureteroscopy.

Result(s): Fifty-five patients (male:female ratio of 17:38) were included in the study. Two (3.6%) of patients developed urinary tract infections in the post-operative period, which were both treated successfully with antibiotics. Urine cultures were positive for mixed bacteria and enterococcus respectively. Mean stone diameter was 7.1mm (SD 3.5). Laser lithotripsy was performed in 84% of cases, while basket extraction alone was performed in 16% of cases. Ureteral access sheath was used in 36% of cases, and ureteral stent was placed in 89% of cases. Stone analysis was available in 56% of cases, and all were calcareous stones. Mean time to follow up was 23 days (SD 29).

Conclusion(s): The post-operative urinary tract infection rate in this study was consistent with what is reported in the literature for ureteroscopic stone treatment. Our data suggests that post-operative antibiotics may not improve infection rates after ureteroscopic stone treatment.

Status

CONFERENCE ABSTRACT

Institution

(Eisner, Kurtz, Gershman) Urology, Massachusetts General Hospital, Boston, MA, United States

(Arsovska) Urology, Vancouver General Hospital, Vancouver, BC, Canada

(Patterson) Urology, University of British Columbia, Vancouver, BC, Canada

(Chew) Department of Urologic Sciences, University of British Columbia, Vancouver, BC, Canada

Publisher

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2010

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835.

Efficacy of transurethral pyelolithotripsy in the treatment of large kidney stones.

Merinov D.S., Fatikhov R.R., Gurbanov S.S.

Embase

Journal of Endourology. Conference: 28th World Congress of Endourology and SWL. Chicago, IL United States. Conference Publication: (var.pagings). 24(SUPPL. 1) (pp A163-A164), 2010. Date of Publication: September 2010.

[Conference Abstract]

AN: 70295505

Introduction: Minimally invasive treatment of large kidney stones (>2,0 cm) extended substantially last years due to development of laser energy sources, flexible and mini endoscopic

instruments and transurethral access sheaths. Transurethral pyelolithotripsy has gained expending popularity in such patients treatment.

Purpose(s): The aim of the study was to analyze our clinical experience in implication of this treatment option.

Material(s) and Method(s): We evaluated the series of 18 (12 females and 6 males) consecutive patients with kidney stones larger than 2,0 cm operated in our clinic by means of transurethral pyelocalicolithotripsy during last year. There were 14 cases of single stones and 4 cases of combined pelvic and caliceal stones. The mean stones size was 3,5 cm (min 2,0 cm, max 5,5 cm). Transurethral access sheaths 14/16 Fr, 35 cm long had been placed in all cases. Lithotripsy was performed with 8 Fr semirigid ureteroscope, 7,5 Fr flexible ureteropyeloscope, 50 watts holmium laser. Lithoextraction was done using 1,7 a 2.2 Fr nitinol baskets. Internal urethral JJ - stent was placed to all patients for 1 month period.

Result(s): KUB and kidney US done 1 month after the operation revealed in 14 (77%) patients (11 females and 3 males) no significant residual fragments. In 4 patients (22%) 6 ESWL sessions because of residual fragments was performed. In 2 cases of ineffective ESWL reURS and lithoextraction required. Inability to place access sheaths encountered in 2 cases of man patients. This obstacle had been overcome by 1 week JJ a stent placement for dilation of ureter and further unhindered sheaths passage. In 3 cases (16%) unsatisfying efficacy of procedure was due to failure to place the end of sheaths proximally to UPJ and consequent difficulties in stone extraction. There were no perforations of ureter and renal collecting system during procedures. The most serious complication encountered was acute pyelonephritis in 3 (16%) patients. The mean operative time was 80 minutes.

Conclusion(s): Transurethral laser pyelocalicolithotripsy utilizing ureteral access sheaths appears to be highly effective and safe option for large kidney stones treatment. Based on our experience the efficacy can estimated as high as 77%. Low complication rate makes it reasonable alternative for convenient PCNL in such group of patients.

Status

CONFERENCE ABSTRACT

Institution

(Merinov, Fatikhov) Endourology, R and D Institute of Urology, Moscow, Russian Federation

(Gurbanov) Laparoscopy, R and D Institute of Urology, Moscow, Russian Federation

Publisher

Mary Ann Liebert Inc.

Year of Publication

2010

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836.

Shockwave lithotripsy versus retrograde intrarenal surgery for lower pole renal calculi smaller than one centimeter.

Unsal A., Resorlu B., Tokatli Z., Bayindir M., Saglam R.

Embase

Journal of Endourology. Conference: 28th World Congress of Endourology and SWL. Chicago, IL United States. Conference Publication: (var.pagings). 24(SUPPL. 1) (pp A109-A110), 2010. Date of Publication: September 2010.

[Conference Abstract]

AN: 70295354

Introduction: Lower pole stones smaller than 1 cm in diameter can be managed with observation, shock wave lithotripsy (SWL) or retrograde intrarenal surgery (RIRS).

Purpose(s): To compare the outcomes of RIRS and SWL for small sized lower pole renal calculi by evaluating stone-free rates and associated complications.

Material(s) and Method(s): The records of 60 patients who underwent either SWL (n=40) or RIRS (n=20) by standard techniques over an 1-year period for lower pole renal stones smaller than 1 cm in diameter were reviewed retrospectively. A 7.5F flexible ureteroscope, holmium laser lithotripsy, nitinol baskets and graspers were used in RIRS procedure.

Result(s): After a single RIRS procedure, 18 of 20 patients (90%) were completely stone-free. One patient underwent an additional rigid ureterorenoscopy procedure which was successful, and a patient had residual fragment 6mm in size that was expected to pass spontaneously in follow-up. The stone-free rates were 42%, 65%, and 70% after first, second, and third SWL session, respectively. Complications comprised two patients with renal colic, and two with cystitis without fever after SWL; a patient with highgrade fever and a patient with hematuria after RIRS; all were treated conservatively.

Conclusion(s): In comparison to endoscopic stone removal, SWL is noninvasive, anesthesia-free and can be performed in an outpatient setup. However, RIRS is more effective than SWL and is emerging as a first-line procedure for lower pole stones smaller than 1 cm.

Status

CONFERENCE ABSTRACT

Institution

(Unsal, Resorlu, Tokatli, Bayindir, Saglam) Urology, Kecioren Training and Research Hospital, Ankara, Turkey

Publisher

Mary Ann Liebert Inc.

Year of Publication

2010

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Link to the External Link Resolver:

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837.

Irrigant flow and intrarenal pressure during flexible ureteroscopy: The effect of different access sheaths, working channel instruments and hydrostatic pressure.

Somani B.K., Ng Y., Dennison A., Brown S., Kata S.G.

Embase

Journal of Endourology. Conference: 28th World Congress of Endourology and SWL. Chicago, IL United States. Conference Publication: (var.pagings). 24(SUPPL. 1) (pp A4-A5), 2010. Date of Publication: September 2010.

[Conference Abstract]

AN: 70295060

Introduction: Ureteric access sheaths reduces the intrarenal pressure, improves irrigant flow, decreases operative time and costs.

Purpose(s): To determine the optimal size of access sheath for ureteroscopy and stone lasertripsy to achieve good irrigant flow whilst maintaining lowest possible intrarenal pressure.

Material(s) and Method(s): Pressure transducer was incorporated into in-vitro anatomical model. 10F,12F,14F,16F single lumen and a 14F dual lumen sheath were tested. Irrigant flow and intrarenal pressure was measured with an empty channel, and with 1.4F or 2.4F basket within the working channel with a hydrostatic pressure of 1m and 2m respectively. For dual lumen sheath, the irrigation was connected to the scope or second channel of access sheath. Two other configurations were tested, 4F ureteric catheter placed alongside a 10F sheath (configuration 1) or a 5F ureteric catheter within a 16F access sheath (configuration 2).

Result(s): In empty working channel, irrigant flow increased with sheath diameter. However the presence of 1.4F or 2.4F basket reduced flow upto 65% and 90% respectively. Increasing the hydrostatic(Figer presente) column to 2m height improved the irrigant flow but with predisposition to higher intrarenal pressure. Using configuration 1 and 2, the flow rates improved by 250% and 700% respectively with a 2.4F basket in the working channel, and could also be used with 2m hydrostatic column without increasing intrarenal pressure.

Conclusion(s): Increased access sheath diameter did not improve flow with occupied working channel. Our proposed configuration of ureteric access catheter placed inside or alongside the access sheath provides by far the highest flow rates without a rise in the intrarenal pressure.

Status

CONFERENCE ABSTRACT

Institution

(Somani, Ng, Kata) Urology, Ninewells Hospital, Dundee, United Kingdom (Dennison, Brown)
University of Dundee, Institute of Medical Science and Technology, Dundee, United Kingdom

Publisher

Mary Ann Liebert Inc.

Year of Publication

2010

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838.

Stubborn small lower ureter stones experience in a private community hospital.

Lin S.-M.

Embase

International Journal of Urology. Conference: 10th Asian Congress of Urology of the Urological Association of Asia. Taipei Taiwan (Republic of China). Conference Publication: (var.pagings). 17(SUPPL. 1) (pp A220-A222), 2010. Date of Publication: August 2010.

[Conference Abstract]

AN: 70276659

Purpose: Small lower ureter stones usually have rather good chance to spontaneously pass out if given a fair period of time of watchful waiting. However, there are a certain percentages of small stones that just won't come out after every means of conservative treatment for more than a month or two. Some lower ureter stones might still persist even after the application of ESWL. We would like to discuss what are the reasons why those "stubborn" stones would not or could not go beyond the physiological narrowing of ureterovesical junction to reach the urinary bladder in our hospital for the past few years.

Material(s) and Method(s): From July 2002 to Jan.2010, 126 patients with small lower ureter stone underwent URSL. Almost all of them received every means of conservative treatment for more than a month or two, and for those who received ESWL, the stones still didn't come out. So they could not help but receive URSL treatment. Patients' age range from 27 to 71, mean 46.8 years old, M:F=86:40. Almost all of them received pre-op parenteral antibiotics and then under spinal anesthesia routine urethrocystoscopy would be surveyed first. The orifice of the inflicted ureter would be located and examined. If the stone is inside the ureterocele which is usually apparent before the operation on I.V.P., then unroofing of the ureterocele is the way of choice to deal with the problems of both stone and ureterocele. If the stone is "crowning" at the orifice, and a portion of the stone has already come to the urinary bladder. We would try to grab the stone with the stone forceps and see if we can remove the stone as a whole after some shaking or turning movements of the forceps on the stone. If the stone was so impacted that it might be broken, we would use the EMS probe to hit the portion of the stone inside the orifice. To those partially "crowning stone" we would use EMS probe and hit all the way into the ureter. If the stone was barely seen in the orifice or not at all, we would then decide if it is necessary to use balloon catheter or metal ureter bougie for ureter orifice dilatation to let the ureteroscope go in to finish the job? We used 6.5 or 8.5Fr Storz ureterorenoscope and EMS lithotripter. The accessories like 0.35mm flexible tip guide wire, 50 c.c. syringe with N/S as a compressor and retractable basket for stone retrieval etc. were used when in need. Sometimes the stone has been impacted at

U.V.J. for such a long time that it has incited serious bullous mucosa reaction around the orifice that it looked like that the orifice was hidden in a cluster of grapes and we could not locate the orifice clearly. We then have to meticulously search the whole bullous area millimeter by millimeter and take special care of the yellowish or dark brown color spot that reflects the location of the stone and the orifice. In these cases the utmost patience is crucial. Sometimes the orifice looks fine somehow the 0.35mm flexible tip guide wire scouting for the balloon catheter to dilate the orifice just could not be inserted upward. We then have to use the metal bougie to dilate the orifice so that the ureteroscope could later be inserted. Sometimes everything is normal we smoothly had the ureteroscope inserted into the ureter and saw the stone wandering and whirling in the ureter, and there is nothing wrong whatsoever. Maybe the time is not right yet, so the stone just wants to stay there. On very few occasions, that we found the stone wandering in the trigon area with erythematous and edematous orifice so the stone probably has just come out after the pre-op KUB, and probably the relaxation brought by the spinal anesthesia might have been a booster kick to push the stone out of the orifice.

Result(s): Discussions: In this fast changing modern world, people demand "once and for all, quick and rapid" solution to their problem. How long should we advise the patient to take "watchful waiting"? One month? Two months? or even longer, shorter, or individually evaluated? There are about 25% (30 out of 126) of patients that we had found nothing wrong whatsoever around U.V.J. area, in other words given a longer period of time most of the stones would surely pass out spontaneously. Yes, but for how much longer should we wait? Patient decides it? Or we urologist should decide it for him?

Conclusion(s): Though once the small ureter stone reaches the lower segment of the ureter, it has a fair good chance to come out spontaneously. If it doesn't, there must be something wrong with the U-V-J area. E.g. ureterocele, tiny orifice, impacted stone, severe bullous reaction of mucosa around orifice area, U-V-J stenosis or tortuous ., etc. We should not take for granted that to deal with lower ureter small stone is like a simple task. Beware of the tricks or traps that set by those "stubborn" small lower ureter stones. The lower ureter stones sometimes were too close to be manipulated.

Status

CONFERENCE ABSTRACT

Institution

(Lin) Division of Urology, Department of Surgery, Taipei West Garden Hospital, Taiwan (Republic of China)

Publisher

Blackwell Publishing

Year of Publication

2010

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839.

Efficacy of retrograde ureteropyeloscopic holmium laser lithotripsy for intrarenal calculi >2 cm.

Bader M.J., Gratzke C., Walther S., Weidlich P., Staehler M., Seitz M., Sroka R., Reich O., Stief C.G., Schlenker B.

Embase

Urological Research. 38(5) (pp 397-402), 2010. Date of Publication: October 2010.

[Article]

AN: 50824374

The objectives of this study are to assess the efficacy and safety of retrograde ureteroscopic holmium laser lithotripsy for intrarenal calculi greater than 2 cm in diameter. A total of 24 patients with a stone burden >2 cm were treated with retrograde ureteroscopic laser lithotripsy. Primary study endpoints were number of treatments until the patient was stone free and perioperative complications with a follow-up of at least 3 months after intervention. In 24 patients (11 women and 13 men, 20-78 years of age), a total of 40 intrarenal calculi were treated with retrograde endoscopic procedures. At the time of the initial procedure, calculi had an average total linear diameter of 29.75 +/- 1.57 mm and an average stone volume of 739.52 +/- 82.12 mm³. The mean number of procedures per patient was 1.7 +/- 0.8 (range 1-3 procedures). The overall stone-free rate was 92%. After 1, 2 and 3 procedures 54, 79 and 92% of patients were stone free, respectively. There were no major complications. Minor postoperative complications included pyelonephritis in three cases (7.5%), of whom all responded immediately to parenteral antibiotics. In one patient the development of steinstrasse in the distal ureter required ureteroscopic fragment disruption and basketing. Ureteroscopy with holmium laser lithotripsy represents an efficient treatment option and allows the treatment of large intrarenal calculi of all compositions and throughout the whole collecting system even for patients with a stone burden of more than 2 cm size. © 2010 Springer-Verlag.

PMC Identifier

20204341 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=20204341>]

Status

Embase

Institution

(Bader, Gratzke, Walther, Weidlich, Staehler, Seitz, Reich, Stief, Schlenker) Department of Urology, University Hospital Grohadern, Ludwig-Maximilians-University Munich, Marchioninstr. 15, Munich 81377, Germany (Bader, Sroka) Laser Research Laboratory, LIFE Center, Ludwig-Maximilians-University Munich, Munich, Germany

Publisher

Springer Verlag (Tiergartenstrasse 17, Heidelberg D-69121, Germany)

Year of Publication

2010

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840.

Urolithiasis in Nairobi, Kenya.

Ngugi P.M., Magoha G.A., Kiptoon D.

Embase

East African medical journal. 87(10) (pp 395-399), 2010. Date of Publication: Oct 2010.

[Article]

AN: 366363912

Urolithiasis is an emerging problem in Kenya previously thought to be very rare and in which the use of modern methods of treatment has not been widely practiced To review the presentation and management of patients presenting with urolithiasis in Nairobi, Kenya A retrospective study The Nairobi hospital and Upper Hill Medical Centre a day care facility next to the Nairobi hospital One hundred and twenty five males and fifty three females aged 9 to 75 years One hundred and

seventy eight patients were treated for urolithiasis over a five-and- half year period. Their mean age was 44.8 years, and the median was 45 years The 178 patients required 262 procedures to achieve stone clearance. One hundred and two patients had ESWL, with an overall stone clearance rate of 95%. Twenty-three patients had PCNL; 18 as the first procedure and 5 after failed ESWL. Fifty-one patients had ureteroscopic management. Forty seven had laser or pneumatic lithotripsy while four had stone removal by Dormia basket. Seven patients had bladder calculi managed by either cystolitholapaxy or forceps retrieval. This study demonstrates a higher annual incidence of urolithiasis in Nairobi than earlier literature. Study demonstrates that ESWL and ureteroscopic methods are highly effective in the treatment of renal and ureteral calculi as day care procedures.

PMC Identifier

23057272 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=23057272>]

Institution

(Ngugi) Department of Surgery, College of Health Sciences, University of Nairobi, P.O. Box 19676 - 00202, Nairobi, Kenya.

Year of Publication

2010

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Link to the External Link Resolver:

[SFX](#)

841.

The polyScope: A modular design, semidisposable flexible ureterorenoscope system.

Bader M.J., Gratzke C., Walther S., Schlenker B., Tilki D., Hocaoglu Y., Sroka R., Stief C.G., Reich O.

Embase

Journal of Endourology. 24(7) (pp 1061-1066), 2010. Date of Publication: 01 Jul 2010.

[Article]

AN: 359236350

Purpose: To characterize the mechanical and optical properties of the PolyScope endoscope system and to examine the clinical outcome in patients who were undergoing ureteronephroscopy.

Material(s) and Method(s): Mechanical assessment involved measurement of the deflection angle and irrigation flow rate. Optical resolution and distortion, field and angle of view, and light transmission and output formed the optical assessment. Clinical assessment was made in a series of consecutive ureteronephroscopy procedures. The optical cord was disconnected after each procedure, and the image fiber was assessed for damage.

Result(s): The mean value for the angle of maximum active tip deflection with an empty working channel was 265 degrees (261-275 degrees). Deflection was impaired most with insertion of the 3.0F basket (10% decrease) and least with an indwelling 220 μ m laser fiber (2% decrease). Irrigation flow rate was 57 μ L/min with an empty working channel. Flow was reduced by 50% and 68%, with the insertion of a 200 μ m or 365 μ m laser probe, respectively, and by 92.5% with a 3.2F basket. No damage to the image fiber occurred. The PolyScope optics system could identify a target of about 0.125 μ m at a distance of 2 to 4 μ m, based on 3 line-pairs/mm needed for clear identification. Lithotripsy of renal calculi was performed for 40 stone burdens in 32 patients; the resulting stone-free rate was 87.5%.

Conclusion(s): The novel semidisposable ureteroscope system PolyScope was simple to use, effective, and reliable in this preliminary clinical evaluation. It overcomes the inherent fragility of comparable devices, which renders the need for maintenance unnecessary. © 2010, Mary Ann Liebert, Inc.

PMC Identifier

20575699 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=20575699>]

Status

Embase

Institution

(Bader, Gratzke, Walther, Schlenker, Tilki, Hocaoglu, Stief, Reich) Department of Urology, University Hospital Grosshadern, Ludwig-Maximilians-University Munich, Marchioninistrasse 15, 81377 Munich, Germany (Bader, Sroka) Laser Research Laboratory, LIFE Center, Ludwig-Maximilians-University Munich, Munich, Germany

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2010

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842.

Endourological lithotripsy for stone removal: Accidental fragmentation of dormia basket and guidewire - A brief overview. Endourologische Steinlithotripsie: Akzidentielle Zerstörung von Dormiakorbchen und Guidewire - eine Kurzübersicht <Endourologische Steinlithotripsie: Akzidentielle Zerstörung von Dormiakorbchen und Guidewire - eine Kurzübersicht.>

Cordes J., Jocham D., Kausch I.

Embase

Urologe - Ausgabe A. 49(11) (pp 1365-1367), 2010. Date of Publication: November 2010.

[Review]

AN: 51062143

Endoscopic lithotripsy of stones is one of the most frequently performed procedures in urology. Sometimes dormia baskets and guidewire will be fragmented accidentally by the laser (Hol:YAG), by ultrasound, or by mechanical lithotripsy (electromechanical or pneumatic). A search for articles on this subject was performed. The aim of this article is to provide a review about the literature on this subject and how this subject can be managed. In this article we describe the energy needed for destroying specific foreign bodies and what currently and in the future will be the best way to avoid this problem. © 2010 Springer-Verlag.

PMC Identifier

20824266 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=20824266>]

Status

Embase

Institution

(Cordes, Jocham, Kausch) Klinik für Urologie, Campus Lubeck, Universitätsklinikum Schleswig-Holstein, Ratzeburger Allee 160, Lubeck, Germany

Publisher

Springer Verlag (Tiergartenstrasse 17, Heidelberg D-69121, Germany)

Year of Publication

2010

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843.

Irrigant flow and intrarenal pressure during flexible ureteroscopy: The effect of different access sheaths, working channel instruments, and hydrostatic pressure.

Ng Y.H., Somani B.K., Dennison A., Kata S.G., Nabi G., Brown S.

Embase

Journal of Endourology. 24(12) (pp 1915-1920), 2010. Date of Publication: 01 Dec 2010.

[Article]

AN: 360175699

Purpose: Our aim was to determine the optimal size of access sheath for ureteroscopy and stone lasertripsy to achieve good irrigant flow while maintaining the lowest possible intrarenal pressure.

Material(s) and Method(s): We used an in vitro anatomic model into which a pressure transducer was incorporated. Cook Peel-Away 10F, Flexor 12F, 14F, 16F single lumen, and a new 14F Flexor dual-lumen sheath were tested. Irrigant flow and intrarenal pressure were measured with an empty ureteroscope working channel and with a 1.4F or 2.4F basket within the working channel with a hydrostatic pressure of 1m and 2m, respectively. For the dual-lumen sheath, the irrigation was either connected to the scope or the second channel of the access sheath. Two other configurations were tested: 4F ureteral catheter placed alongside a 10F sheath (configuration 1) or a 5F ureteral catheter within a 16F access sheath (configuration 2).

Result(s): With an empty working channel, irrigant flow increased with sheath diameter. The presence of a 1.4F or 2.4F basket, however, reduced flow up to 65% and 90%, respectively. Increasing the hydrostatic column to 2m height improved the irrigant flow but with a predisposition to a higher intrarenal pressure. Using configurations 1 and 2, the flow rates improved by 250% and 700%, respectively, with a 2.4F basket in the working channel, and could also be used with a 2m hydrostatic column without raising the intrarenal pressure.

Conclusion(s): Increased access sheath diameter does not improve flow when the working channel of a flexible ureteroscope is occupied. Our proposed configuration of a ureteral access catheter placed inside or alongside the access sheath provides by far the highest flow rates without a rise in the intrarenal pressure. Copyright © 2010, Mary Ann Liebert, Inc.

PMC Identifier

21067276 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=21067276>]

Status

Embase

Institution

(Ng, Somani, Kata, Nabi) Department of Urology, Ninewells Hospital, Dundee DD1 9SY, United Kingdom (Dennison, Brown) Institute for Medical Science and Technology, University of Dundee, Dundee, United Kingdom

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2010

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844.

A review and illustration of contemporary percutaneous nephrolithotomy practice using intracorporeal techniques through single punctures for complex stone burden in a UK tertiary referral centre.

Heer R., Veeratterapillay R., Haslam P., Hasan S.T.

Embase

British Journal of Medical and Surgical Urology. 3(4) (pp 144-150), 2010. Date of Publication: July 2010.

[Article]

AN: 50804226

Objective: The treatment of complex renal stones remains challenging for surgeons using percutaneous nephrolithotomy (PCNL). A number of contemporary accessory techniques can help improve stone clearance allowing a reduction of multiple punctures and morbidity. We report our experience using a single puncture for complex stone cases.

Patients and Methods: We reviewed the practice of single puncture for complex stones (partial staghorns involving multiple calyces and complete staghorns) in our Institute from 2004 to 2007. These cases included paediatric patients who would otherwise typically endure open nephrolithotomy. Stone clearance, by intra-operative renoscopy and post-operative KUB, and requirement for ancillary procedures was assessed.

Result(s): In total 35 complex stone cases were identified that matched the inclusion criteria (4 children). All patients were treated with a solitary puncture and two cases were abandoned due to excessive bleeding at the time of percutaneous access. Of the 33/35 cases that progressed fluoroscopic stone clearance was achieved. Case-based illustrations are presented showing accessory techniques such as intracorporeal catheters, flexible cystoscopy, basketing, lasering and percutaneous needle manipulations that facilitated these results.

Conclusion(s): In cases of complex renal stone disease, the use of contemporary PCNL techniques can allow significant stone clearance through a single puncture in most cases. A team approach with intervention radiologists is emphasized. © 2010 British Association of Urological Surgeons.

Status

Embase

Institution

(Heer, Veeratterapillay, Haslam, Hasan) Departments of Urology and Radiology, Freeman Hospital, Freeman Road, High Heaton, Newcastle upon Tyne, NE7 7DN, United Kingdom

Publisher

Elsevier Ltd (Langford Lane, Kidlington, Oxford OX5 1GB, United Kingdom)

Year of Publication

2010

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845.

Validation of a High Fidelity Adult Ureteroscopy and Renoscopy Simulator.

White M.A., DeHaan A.P., Stephens D.D., Maes A.A., Maatman T.J.

Embase

Journal of Urology. 183(2) (pp 673-677), 2010. Date of Publication: February 2010.

[Article]

AN: 50737539

Purpose: Surgical simulation technology may efficiently train and accurately assess the acquisition of many skills. Surgical simulators often lack realism and can be expensive at \$3,000 to more than \$60,000. We assessed the face, content and construct validity of a newly developed, anatomically accurate, reasonably priced high fidelity ureteroscopy and renoscopy trainer.

Material(s) and Method(s): A total of 46 participants, including attending urologists, urology residents, medical students and industry representatives, assessed the face and content validity of the simulator using a standard questionnaire. Ten experienced ureteroscopists with greater than 30 procedures per year and 10 novice ureteroscopists with 0 were assessed on the ability to perform flexible ureteroscopy, renoscopy and intrarenal basket extraction of a lower pole calculus using the adult ureteroscopy trainer (Ideal Anatomic Modeling, Holt, Michigan). Subject performance was assessed by an experienced ureteroscopist using a checklist, global rating scale and time to task completion.

Result(s): Of participants 100% rated the trainer as realistic and easy to use, and thought it was a good training tool, 98% thought that it would serve as a good training format and 96% would recommend it to urology trainees. All participants recommended it for use in residency programs and 96% would or would have used it during residency. Only 37.5% vs 100% of experienced vs novice ureteroscopists would use it to practice. Of participants 9% foresaw a problem with the trainer. On the trainer experienced ureteroscopists scored significantly higher on the global rating scale (mean +/- SD 33.1 +/- 1.3 vs 15.0 +/- 2.7, $p < 0.0001$) and checklist (4.1 +/- 1.0 vs 2.4 +/- 1.1, $p = 0.004$), and required less time to complete the task (141.2 +/- 40.1 vs 447.2 +/- 301.7 seconds, $p = 0.01$).

Conclusion(s): Our preliminary study suggests the face, content and construct validity of the adult ureteroscopy trainer as a high fidelity ureteroscopy and renoscopy trainer. © 2010 American Urological Association.

PMC Identifier

20022047 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=20022047>]

Status

Embase

Institution

(White, DeHaan, Stephens, Maes, Maatman) Michigan State University College of Osteopathic Medicine Urologic Consortium, Metro Health Hospital, Wyoming and Michigan Urological Clinic (TJM), Grand Rapids, MI, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

2010

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846.

Treatment of ureteral calculi with semirigid ureteroscopy: Where should we stop?.

Yencilek F., Sarica K., Erturhan S., Yagci F., Erbagci A.

Embase

Urologia Internationalis. 84(3) (pp 260-264), 2010. Date of Publication: April 2010.

[Article]

AN: 358662868

Objectives: To evaluate the efficacy of semirigid ureteroscopy in the management of ureteral stones located in different parts of the ureter.

Method(s): 1,503 patients were treated with semirigid ureteroscopy. All ureteral stones were either removed only by a basket catheter or disintegrated by pneumatic lithotripsy. Success rates, auxiliary procedures, complication rates and operation time were comparatively evaluated according to stone location.

Result(s): Overall, mean stone size and age were 12.1 +/- 3.7 mm and 43.2 +/- 9.72 years, respectively. While 1,416 patients (94.2%) were completely stone-free, the procedure was unsuccessful in 87 cases (5.8%). The success rate was relatively low in the proximal ureter (71.7%) when compared with the mid (94.8%) and distal ureter (98.9%) ($p = 0.021$). Mean operation time was 25.4 +/- 11.7 min. Longer duration of operation and higher complication rate were found in proximal ureteral calculi. Stone migration to the kidney and hematuria were the main reasons of failure in the proximal ureter and ureteral stenting was needed for 56.4% of patients with upper ureteral stone.

Conclusion(s): Semirigid ureteroscopy can be the treatment of choice in lower and midureteral stones. However, it is an invasive and less successful treatment modality for proximal ureteral stones with relatively high complication rates. © 2010 S. Karger AG, Basel.

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20389152 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=20389152>]

Status

Embase

Institution

(Yencilek, Sarica) Department of Urology, Yeditepe University, Medical Faculty, Istanbul, Turkey

(Erturhan, Yagci, Erbagci) Department of Urology, Gaziantep University, Medical Faculty, Gaziantep, Turkey

Publisher

S. Karger AG (Allschwilerstrasse 10, P.O. Box, Basel CH-4009, Switzerland)

Year of Publication

2010

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847.

Is a safety wire necessary during routine flexible ureteroscopy?.

Dickstein R.J., Kreshover J.E., Babayan R.K., Wang D.S.

Embase

Journal of Endourology. 24(10) (pp 1589-1592), 2010. Date of Publication: 01 Oct 2010.

[Article]

AN: 359776699

Background and Purpose: The use of flexible ureteroscopy (URS) for nephrolithiasis has been rapidly expanding. Initially, safety guidewires were maintained alongside the ureteroscope during stone manipulation to prevent loss of access and allow stent insertion in the event of perforation. We intend to determine the safety of flexible URS without a separate safety guidewire in a large series of patients.

Method(s): A retrospective chart review was performed on all cases of flexible URS with laser lithotripsy performed by a single surgeon from August 2003 to May 2008. Preoperative patient characteristics, radiographic stone sizes, operative findings, and postoperative outcomes were recorded. Patients with renal or ureteropelvic junction (UPJ) stones were isolated for a qualitative data analysis.

Result(s): Flexible URS was performed on 305 kidneys in 246 consecutive patients, of which 59 cases were bilateral. Cases were subdivided into complicated and uncomplicated. Two hundred seventy cases were uncomplicated and performed without a safety guidewire. No intraoperative complications resulted from the lack of a safety guidewire, including no cases of lost access, ureteral perforation/avulsion, or need for percutaneous nephrostomy tube. Thirty-five cases were complicated, necessitating a safety guidewire. Of these, 16 had concomitant obstructing ureteral stones, 5 had encrusted ureteral stents, and 14 had difficult access because of large stone burden or aberrant anatomy.

Conclusion(s): This study demonstrates that, in a large series of patients, a safety guidewire was not necessary for routine cases of flexible URS with laser lithotripsy on renal or UPJ stones.

Particular cases with complicated anatomy, difficult access, concomitant ureteral stones, simultaneous stone basketing, or bulky stone burden still necessitate use of a safety guidewire because of increased risk of adverse outcomes. © Copyright 2010, Mary Ann Liebert, Inc.

PMC Identifier

20836719 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=20836719>]

Status

Embase

Institution

(Dickstein, Kreshover, Babayan, Wang) Department of Urology, Boston University School of Medicine, 720 Harrison Ave., Boston, MA 02118, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2010

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848.

Changing trends in the use of ureteroscopic instruments from 1996 to 2008.

Leone N.T., Garcia-Roig M., Bagley D.H.

Embase

Journal of Endourology. 24(3) (pp 361-365), 2010. Date of Publication: 01 Mar 2010.

[Article]

AN: 358534779

Purpose: Despite ongoing advances in the field of endourology, there are few reports describing specific changes adopted by urologists that have come as a result. We investigated the progression of single surgeon's clinical practice over a 12-year period, noting differences in ureteroscopes, ancillary equipment, and indications for surgery over that time.

Method(s): The records of 1181 patients undergoing ureteroscopy by a single surgeon were reviewed. Consecutive patients from the years 1996 (n=200), 1998 (n=179), 2000 (n=198), 2002 (n=127), 2004 (n=137), 2006 (n=200), and 2008 (n=140) were included in the study. Patients remained grouped by the year of their procedure for comparison. Compared variables included the indication for surgery, type of anesthesia, method of ureteral dilation and stabilization, specific ureteroscopes used, type and number of working instruments employed, and the method of postprocedure ureteral drainage.

Result(s): A change favoring smaller, more flexible ureteroscopes was seen. An increase in the percentage of surgeries performed for upper tract tumors paralleled decreasing trends in urolithiasis and ureteropelvic junction obstruction surgery. A divergence in the devices used for calculi and upper tract tumors was seen.

Conclusion(s): Over the past 12 years, technological advancements in the field of endourologic surgery have resulted in shifting clinical practice for endourologists, with trends favoring smaller, actively flexible ureteroscopes, intrarenal surgery, and nitinol basket use. © 2010, Mary Ann Liebert, Inc.

PMC Identifier

19852723 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=19852723>]

Status

Embase

Institution

(Leone, Garcia-Roig, Bagley) Department of Urology, Jefferson Medical College, 1025 Walnut St., Philadelphia, PA 19107, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2010

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849.

Irrigant flow and flexible ureteroscopy: Does access sheath size matter and are two channels better than one?.

Ng Y.H., Kata S.G., Brown S.

Embase

European Urology, Supplements. Conference: 24th Annual Congress of the European Association of Urology, EAU. Stockholm Sweden. Conference Publication: (var.pagings). 8(4) (pp 291), 2009. Date of Publication: March 2009.

[Conference Abstract]

AN: 70149846

Introduction & Objectives: Accurate visualisation of the pelvicalyceal system is crucial for success in flexible ureteroscopy and stone lasertripsy. With lasertripsy, the accumulation of calculus debris around the instrument compromises the visual field and is particularly problematic when an instrument occupies the working channel of the scope. This undesired effect can be minimised by optimising irrigant flow around the tip of the instrument. A new dual lumen access sheath with a second channel for irrigation (Cook Flexor DL) is claimed to improve flow. We investigated the effect of both ureteric access sheath diameter as well as a dual lumen on irrigant flow.

Material(s) and Method(s): An in vitro anatomical model of a kidney and upper ureter was created into which a pressure transducer was incorporated. Cook Peelaway 10F, Flexor 12F, 14F, 16F single lumen and a new 14F Flexor dual lumen sheath were tested. The ureteric access sheath was secured to the model and a Storz Flex X flexible ureteroscope introduced to the kidney. With a one metre hydrostatic head, flow through the system and intrarenal pressure were measured with an empty working channel, a 1.5F and 3.0F basket. Finally measurements were taken with irrigation connected to a 4F and 5F open access catheter alongside a single lumen access sheath.

Result(s): With an empty working channel, flow increased with sheath diameter particularly from the Flexor 12F to 14F. However the presence of a 1.5F or 3.0F basket reduced flow by 33.3-64.8% and 58.9-89.9% respectively. The use of larger diameter access sheaths did not improve flow with a basket in the working channel though the 12F Flexor was associated with lower flow (reduction of 44% v mean) and higher intrarenal pressures (rise of 40mmHg v mean) than other sheaths. The 14F dual lumen sheath did not show improved flow versus a 14F single lumen sheath and was associated with higher intrarenal pressures (22mmHg v mean). However the use of a 5F open ended ureteric catheter for irrigation within the 16F sheath or a 4F catheter alongside a 10F sheath provided flow 6.78 and 2.44 times greater than with the irrigation connected to the scope with a basket in situ.

Conclusion(s): Increased access sheath diameter does not improve flow when the working channel of a flexible ureteroscope is occupied. The presence of a second channel in an access sheath to which irrigation is connected can markedly improve flow but the current design of Cook dual lumen access sheath does not achieve this.

Status

CONFERENCE ABSTRACT

Institution

(Ng, Kata) Ninewells Hospital, Dept. of Urology, Dundee, United Kingdom (Brown) Dundee University, Institute of Medical and Surgical Applied Technology, Dundee, United Kingdom

Publisher

Elsevier

Year of Publication

2009

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850.

Flexible ureteroscopy for large renal calculi.

Ng Y.H., Reid S., Kata S.G.

Embase

European Urology, Supplements. Conference: 24th Annual Congress of the European Association of Urology, EAU. Stockholm Sweden. Conference Publication: (var.pagings). 8(4) (pp 290), 2009. Date of Publication: March 2009.

[Conference Abstract]

AN: 70149844

Introduction & Objectives: The treatment indications for flexible ureteroscopy and lasertripsy (FURSL) for urolithiasis have yet to be definitively defined. Currently, the EAU recommends renal calculi <20mm are treated with extracorporeal shockwave lithotripsy (ESWL). However evidence suggests that success rates are significantly affected by stone position (lower calyx), renal anatomy and stone size. This is acknowledged in current EAU guidelines though this only goes as far as suggesting ureteroscopy is carried out where ESWL is contraindicated. There is a lack of data for FURSL and we present a large case series of larger and multiple renal calculi treated with FURSL.

Material(s) and Method(s): We retrospectively analysed and completed follow up on 88 consecutive patients with single or multiple renal calculi at least 1cm in diameter treated with FURSL between January 2006 and March 2008. One patient had prior treatment in the form of PCNL. Stone free rates status was defined as fragments less than 3mm on follow up imaging in the form of ultrasound, KUB or CT. Flexible ureteroscopy was carried out under prophylactic antibiotic cover (intravenous gentamicin or cefuroxime depending on renal function). A ureteric access sheath (10F Peelaway Cook) was routinely inserted over a guidewire prior to

ureteroscopy. The flexible ureteroscope utilised was either a Storz Flex-X or an Olympus URF-P4 or 5. Lower calyceal stones were disrupted in situ if possible or basketed to the renal pelvis or upper calyx prior to lasertripsy. A 100W Trimedyn and latterly a Lumenis 100w device were utilised for lasertripsy through a 365um fibre where possible. A 6F open ended ureteric access catheter or a 6F multilength stent were left postoperatively and remove the following day or 2 weeks later respectively.

Result(s): 76 of 88 patients were stone free (sf 86.4%) with a mean follow up of 15 months. The mean number of treated stones per case was 2.76. The mean stone burden was 19.3mm (range 10-53mm). 56 cases were carried out on multiple calculi with 46 rendered stone free (sf 82.1%), 18 bilateral ureteroscopies were performed with success in 17 (sf 94.4%). Stone burdens of greater than 20mm were associated with a 27/30 success (sf 90.0%). Lower calyceal stones were successfully cleared in 22 of 30 cases (sf 73.3%). 7 repeat ureteroscopies were carried out with subsequent stone free status in all but one case. The calculated overall efficiency quotient was 0.81. There were 2 significant septic episodes both of whom made a full recovery.

Conclusion(s): Flexible ureteroscopy and lasertripsy for the treatment of single, multiple and bilateral renal calculi greater than 1cm in diameter is associated with high success rates. The presence of lower calyceal stones remains more difficult than in other anatomical positions but is still associated with a stone free rate of over 73%. We conclude that FURSL is at least as effective as ESWL for renal calculi greater than 1cm diameter.

Status

CONFERENCE ABSTRACT

Institution

(Ng, Reid, Kata) Ninewells Hospital, Dept. of Urology, Dundee, United Kingdom

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2009

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851.

Retrograde intrarenal surgery (RIRS) in the treatment of renal calculi: Is it a new frontier?.

Giusti G., Piccinelli A., Maugeri O., Taverna G., Benetti A., Pasini L., Seveso M., Zandegiacomo S., Corinti M., Graziotti P.

Embase

European Urology, Supplements. Conference: 24th Annual Congress of the European Association of Urology, EAU. Stockholm Sweden. Conference Publication: (var.pagings). 8(4) (pp 290), 2009. Date of Publication: March 2009.

[Conference Abstract]

AN: 70149843

Introduction & Objectives: According to EAU guidelines, the treatment for all renal stones that are too large to be subjected to SWL or are resistant to it, is percutaneous nephrolithotomy (PNL).

However, the progressive improvement in technique together with recent advancements in flexible ureteroscopes have been very impressive. As such, retrograde approach to renal calculi, considered till few years ago pure myth, is becoming a reasonable treatment option for the majority of renal stones. Herein we present the results of our series of RIRS for renal calculi.

Material(s) and Method(s): Since April 2006 a total of 152 patients (pts) affected with renal stones were treated with RIRS. All pts were divided in 3 groups on the base of stone dimensions: group 1 stones < 1 cm, group 2 stones between 1 and 2 cm and group 3 stones > 2 cm <4 cm.

Subsequently, group 1 and 2 were further divided into 3 subgroups: renal stone except lower pole (LP), LP stones treated in situ and LP stones treated after relocation into more accessible upper pole calyx. We utilized standard semirigid ureteroscope and in the first 40 cases GyrusACMI Dur-8 flexible scope. Since march 2007 we use the new Gyrus-ACMI DUR-D, a last generation digital technology flexible ureteroscope supported with distal image sensor. In case of LP stone, every effort is attempted to relocate the stone into more favorable upper pole calyx before lithotripsy. The day after procedure, KUB is obtained. In case of significant residual stone, patient is planned for 2nd look procedure before discharging. Otherwise, the patient is discharged home and planned for cystoscopic or self stent removal within 1 week.

Result(s): Results are reported in table 1. Of note, no significant decrease in haemoglobin level nor need for blood transfusions was experienced. 1 patient in group 3 required placement of nephrostomy and subsequently open mini-lumbotomy to drain a perirenal abscess due to important extravasation of irrigant solution. Then by means of triple procedure, patient has been rendered stone free even though has developed chronic lumbar neuralgia.

Conclusion(s): Based on our encouraging results, it is reasonable to consider RIRS the first choice treatment in case of SWL resistant renal stones up to 2 cm while it can be considered a

viable alternative to PNL in case of renal stones > 2 cm <4 cm. Preliminary relocation of stone into a more accessible calyx by means of basketing or grasping, yielded significant higher success rate especially when treating LP calculi 1 to 2 cm without significant difference in operative time and complication rate. Obviously, pts in group 2 and 3 have to be fully informed about quite lower stone free rate after single procedure and eventual need for further retreatments and anaesthesiae when are candidate to RIRS. At our Stone Center RIRS has already replaced PNL as gold standard in nearly 80% of major renal stones.

Status

CONFERENCE ABSTRACT

Institution

(Giusti, Piccinelli, Maugeri, Taverna, Benetti, Pasini, Seveso, Zandegiacomo, Corinti, Graziotti)
Istituto Clinico Humanitas, Dept. of Urology, Rozzano, Italy

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Elsevier

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852.

Sequential flexible percutaneous and ureteroscopic approach in Staghorn Calculi.

Cauni V., Multescu R., Mirciulescu V., Georgescu D., Geavlete B., Geavlete P.

Embase

Urology. Conference: 30th Congress of the Societe Internationale d'Urologie, SIU 2009.

Shanghai China. Sponsor: SIU . Conference Publication: (var.pagings). 74(4 SUPPL S) (pp S348), 2009. Date of Publication: October 2009.

[Conference Abstract]

AN: 70085644

Introduction and Objectives: Percutaneous approach of staghorn calculi may raise some challenges. The aim of our study was to determine the value of sequential flexible nephroscopic and ureteroscopic approach regarding the decrease in morbidity of percutaneous treatment in staghorn calculi.

Material(s) and Method(s): Between January 2003 and January 2009, the sequential flexible nephroscopic and ureteroscopic approach was applied in 7 cases with restant caliceal stone fragments after percutaneous nephrolithotomy with rigid nephroscopes of staghorn calculi. All cases presented restant stones in 2 caliceal groups. We used a 15F Storz flexible nephroscope, a 7.5F Storz flexible ureteroscope, an electrohydraulic lithotripter and various stone extractors (nitinol baskets and triradiate graspers).

Result(s): In 4 cases, the flexible ureteroscope was used due to a narrow infundibulum, which prevented the access of the much larger nephroscope. In the other 3 cases, the flexible retrograde approach was imposed by the impossible percutaneous approach due to an acute angle between the access traject and the calices containing stones. The combined access was successful in rendering the patients stonefree in 85.7% of cases (6/7 patients). In one case, an additional percutaneous access traject was necessary in order to remove a large middle caliceal stone fragment. No major complications were encountered.

Conclusion(s): Sequential flexible nephroscopic and retrograde ureteroscopic approach may be a safe and efficient method in treating restant stone fragments after rigid percutaneous nephrolithotomy for staghorn calculi. It may reduce the need for additional access trajects, thus decreasing the associated morbidity of percutaneous surgery.

Status

CONFERENCE ABSTRACT

Institution

(Cauni, Multescu, Mirciulescu, Georgescu, Geavlete, Geavlete) Department of Urology, Saint John Emergency Clinical Hospital, Bucharest, Romania

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853.

Why is rigid ureteroscopy still the treatment of choice for the management of ureteral stones in developing countries?.

Abbar M., Ammani A., Hajji F., Janane A., Ameer A., Ghadouane M.

Embase

Urology. Conference: 30th Congress of the Societe Internationale d'Urologie, SIU 2009.

Shanghai China. Sponsor: SIU . Conference Publication: (var.pagings). 74(4 SUPPL S) (pp S26), 2009. Date of Publication: October 2009.

[Conference Abstract]

AN: 70084683

Introduction and Objectives: Even in the area of flexible ureteroscopes and lasers, rigid ureteroscopy (RURS) remains the treatment of choice for the management of ureteral stones in many developing countries. We performed a retrospective critical analysis of our practice of RURS comparing to modern literature.

Material(s) and Method(s): From May 1998 to December 2008, 317 consecutive patients (241 males, 76 females) with an average age of 39 years (range: 17 to 68 years), underwent 334 RURS for ureterolithiasis. Records of patients were reviewed to assess stonefree and complication rates, and cost of procedure.

Result(s): Stone size varied from 5 to 16mm (mean 9.3mm). Calculi were located within lower ureter in 70.35%, middle ureter in 10.47% and upper ureter in 19.16%. The overall stone free rate was 93.11 %. Specific stone free rate was 98.29 % in lower ureter, 91.42% in middle ureter and 75 % in upper ureter. Failure was expressed in 23 cases, mostly in the upper ureter. Stones were fragmented with pneumatic lithotripsy 80.06 % and removed by forceps or basket catheter without fragmentation in the other cases. Patients were followed for a mean of 3.5 months (3 to 18 months) after RURS. The overall complication rate was 6.28%. Major complications (perforation or stricture) rate was 2.69%.The mean cost of a RURS session and associated investigations was 900 (range: 809 to 1500).

Conclusion(s): Although with high success and lower complication rates than RURS, flexible ureteroscopy and laser are still inaccessible to the majority of patients and urologists in developing countries. Thus, RURS even with supplementary PCNL or ESWL continues to offer the best costeffectiveness option for the treatment of ureteral calculi.

Status

CONFERENCE ABSTRACT

Institution

(Abbar, Ammani, Hajji, Janane, Ameer, Ghadouane) Mohammed V Military Hospital, Rabat, Morocco (Abbar, Janane, Ameer, Ghadouane) Faculty of Medicine and Pharmacy, University Mohammed V Souissi, Rabat, Morocco

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Year of Publication

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854.

Management of symptomatic ureteral calculi complicating pregnancy.

Ekinci M., Burak Hoscan M., Tunckiran A., Ozkardefli H., Xhafa A., Gokhan Doluotlu O.

Embase

Archivio Italiano di Urologia e Andrologia. Conference: 6th Eurolithiasis (eULIS) Society Symposium 14th European Symposium on Urolithiasis. Como Italy. Conference Publication: (var.pagings). 81(3) (pp 165), 2009. Date of Publication: September 2009.

[Conference Abstract]

AN: 70036923

Objectives: To review our experiences with management of symptomatic ureteral calculi complicating pregnancy.

Material(s) and Method(s): Between January 2001 and December 2007, 48 pregnant women were treated for symptomatic ureteral stone. The medical records of these patients were retrospectively reviewed.

Result(s): The mean patient age was 23 (range 17-37) years and gestational age at presentation was 21 weeks (12-38). Most ureterolithiasis cases during pregnancy (60%) occurred in the third

trimester. Flank pain was the common presenting symptom (90%), 10 percent had associated fever and 20 percent had irritative voiding symptoms. Ultrasonography was the initial test confirming the diagnosis. By conservative management with analgesics and hydration, spontaneous passing of stones was noted in 13 cases (27%). In ten patients (20.8%) symptomatic relief occurred without spontaneous passing of stones until the end of pregnancy with no complication. Definitive treatment performed after birth in these cases. Invasive management required during pregnancy in 25 patients (52%) due to persistent pain and/or ureteral obstruction. Of these, in twenty patients; ureteral calculi were treated successfully by ureteroscopy. Stones were extracted by pneumatic lithotripsy and/or basket catheter or forceps. In five patients; only double-J stent was inserted during ureteroscopy due to unreached or migrated stone. Majority of the patients (62%) had lower ureteric calculi. The mean size of the stones retrieved was 7 mm (4-13mm). No obstetric or urologic complications were noted. Conclusion(s): When conservative treatment fails, ureteroscopy is an effective and safe therapeutic option in symptomatic ureteral calculi complicating pregnancy.

Status

CONFERENCE ABSTRACT

Institution

(Ekinci, Burak Hoscan, Tunckiran) Alanya Research, Department of Urology, Practice Center, Alanya, Turkey (Ozkardefli) Bafkent University, Faculty of Medicine, Department of Urology, Ankara, Turkey

(Xhafa, Gokhan Doluotlu, Xhafa, Gokhan Doluotlu) Gulhane Military Medical Academy, Department of Urology, Ankara, Turkey

Publisher

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855.

RIRS - Retrograde intra renal surgery - Simultaneous treatment of renal and ureteral stones with severe stone burden.

Micali S., De Carne C., Pini G., Beato A., Ferrari N., Sighinolfi M.C., De Stefani S., Bianchi G.

Embase

Archivio Italiano di Urologia e Andrologia. Conference: 6th Eurolithiasis (eULIS) Society Symposium 14th European Symposium on Urolithiasis. Como Italy. Conference Publication: (var.pagings). 81(3) (pp 146), 2009. Date of Publication: September 2009.

[Conference Abstract]

AN: 70036870

Objectives: Laser retrograde intrarenal surgery (RIRS) allows the treatment of renal stones, especially lower caliceal location, with definite advantages in terms of reduced morbidity. We report a case of simultaneous treatment of reno-ureteral stones with RIRS approach.

Material(s) and Method(s): A 39 years-old man was admitted to our Department for relapsing renal colic due to a staghorn pelic stone (30 mm) detected with helical CT scan. Stone radiodensity was HU 300-500, with associated hydronephrosis. Renal function (recorded as creatinine value) was within the range; however, the serum exam revealed a severe hyperuricemia. A medical therapy with allopurinolo and urine alkalinization was promptly recommended; however, the patient refused any minimally invasive approach, such as percutaneous lithotripsy (PCNL) or RIRS. Thus, we decided to manage the patient with one session of extracorporeal shock wave lithotripsy (ESWL). After a few days, a nephrostomic tube was positioned for the onset of steinstrasse with hydronephrosis and urosepsis. A retrograde approach was finally performed: firstly, a rigid ureteroscopy with ballistic lithotripsy and retrieval of fragments by means of a basket; afterward, the treatment was completed with flexible ureteroscopy and Holmium laser lithotripsy of residual caliceal stones. A double J ureteral stent was finally positioned with removal of the nephrostomic tube.

Result(s): The patient was discharged 2 days after the endoscopic procedure and ureteral stent was successfully removed 20 days later. Physical examination of the stone revealed a main uric acid composition, with associated calcium oxalate. A minor caliceal fragment 6 mm in size was detected at the follow up ultrasound, and successfully treated with ESWL.

Conclusion(s): The widespread introduction of upgraded flexible ureteroscopes, laser energies and baskets, allows the treatment of stones everywhere located along the excretory way. RIRS has been recently introduced as an alternative to PCNL, with less invasiveness, better esthetical result and faster discharge; our clinical case confirms its emerging role for the simultaneous treatment of renal (caliceal) and ureteral stones.

Status

CONFERENCE ABSTRACT

Institution

(Micali, De Carne, Pini, Beato, Ferrari, Sighinolfi, De Stefani, Bianchi) Cattedra di Urologia,
Universita de Modena, Reggio Emilia, Italy

Publisher

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Year of Publication

2009

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856.

The new generation invisio DUR-D urethrosopes - Evaluation of changes in physical properties over time.

El-Husseiny T., Masood J., Moraitis K., Maan Z., Birch M., Buchholz N.

Embase

Archivio Italiano di Urologia e Andrologia. Conference: 6th Eurolithiasis (eULIS) Society Symposium 14th European Symposium on Urolithiasis. Como Italy. Conference Publication: (var.pagings). 81(3) (pp 145), 2009. Date of Publication: September 2009.

[Conference Abstract]

AN: 70036868

Background and Purpose: Flexible ureteroscopes have become an essential tool in endourological practice. Recently, a new generation of digital flexible ureteroscopes has been marketed (Invisio DUR-D, ACMI, USA) with which a new optical technology was introduced. The tip houses dual Light Emitting Diodes (LED) driven light carriers. A 1mm digital camera at the tip eliminates the need for fragile low-resolution fibre-optics and provides superior resolution. In addition, the image quality is digitally enhanced. It was claimed that not only should this markedly increase the image quality, but also make the instrument more durable in the whole. We have

therefore compared both, light intensity and deflection angles with and without indwelling instruments between identical scopes after different number of uses.

Material(s) and Method(s): On three identical Invisio DUR-D digital flexible ureteroscopes of different usages we measured and compared the light intensity at a given setting of the light source using an Ocean Optics optical spectrometer at 20mm distance from the tip.

Measurements were taken three times each with the ureteroscopes in straight position and upwards/downwards deflection, respectively. The first scope was brand new; the second had been used 30 times while the third had been used 44 times. We also measured and compared the deflection angles without and with instruments - a 0.035" Cook guidewire, a 200 mum laser fibre and a 3F zero-tip nitinol basket - inside the working channel in four identical scopes after 0, 10, 30, and 44 uses, respectively.

Result(s): Light intensity for each scope showed slight differences in relation to deflection angles, which is within the experimental error and did not significantly differ. Light output remained stable after many uses (Table 1). (Table Presented) In contrast, the deflection angle is shown to deteriorate with instruments inside the working channel. This is relatively independent of the type of micro-instrument used, but the decrease is directly proportional with advanced age of the scope (Table 2). (Table Presented)

Conclusion(s): As an advantage over earlier generation scopes, light output remains constant due to the avoidance of the fragile low-resolution fibre-optics, further helped by digital enhancement. Similarly to the earlier generation scopes, there remains a decrease in deflection capability over time with the new Invisio DUR-D digital flexible ureteroscopes.

Status

CONFERENCE ABSTRACT

Institution

(El-Husseiny, Masood, Moraitis, Maan, Buchholz) Endourology and Stone Services, Barts and London NHS Trust, London, United Kingdom (Birch) Dept. of Medical Physics, Barts and London NHS Trust, London, United Kingdom

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Year of Publication

2009

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857.

Ex vivo models for training in endourology.

Celia A., Zeccolini G., Breda G.

Embase

Journal of Endourology. Conference: 27th WCE 2009. Munich Germany. Conference Publication: (var.pagings). 23(SUPPL. 1) (pp A377), 2009. Date of Publication: October 2009.

[Conference Abstract]

AN: 70026725

Background: Simulators have gained wide acceptance as an important tool in the surgeon's learning process. Some types of simulators are currently available: plastic models, virtual digital models and animal models. Italian law forbids the use of living animals. Ex vivo-models are the closest ones to reality and therefore the most useful ones in the training of surgeons, to cover the gap between theoretical learning and real practice. We introduced porcine models in upper urinary tract endourological training, in order to improve learning curve of unskilled urologists.

Method(s): The video shows standard endourological procedures on the model. Rigid and flexible cystoscopy Retrograde Ureteropielography Introducing guide wire up to the kidney The use of ureteral access sheath Rigid and flexible ureterorenoscopy, explaining tricks to overcome stenosis or ureteral kinkings Operative procedures on caliceal, ureteral or bladder stones by baskets, ballistic lithotripsy or laser Percutaneous lithotripsy of a stone.

Result(s): The video shows the steps to create "ex-vivo model" by porcine urinary tract for endourological training: Ex-vivo porcine upper urinary tract is really close to human urinary tract and, therefore, is better than plastic models. It is also cheap to build and easy to use.

Conclusion(s): In conclusion, the video aims to offer to the training urologist the possibility to learn the steps of endourological procedures and to build by himself an easy ex-vivo porcine model to train on endourological techniques. Such a training will improve learning curve and will improve results during endourological procedures on human patients.

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858.

Upper urinary tract endourological training on ex-vivo porcine model.

Celia A., Zeccolini G., Breda G.

Embase

Journal of Endourology. Conference: 27th WCE 2009. Munich Germany. Conference Publication: (var.pagings). 23(SUPPL. 1) (pp A366), 2009. Date of Publication: October 2009.

[Conference Abstract]

AN: 70026688

Background: Simulators have gained wide acceptance as an important tool in the surgeon's learning process. Some types of simulators are currently available: plastic models, virtual digital models and animal models. Italian law forbids the use of living animals. Ex vivo-models are the closest ones to reality and therefore the most useful ones in the training of surgeons, to cover the gap between theoretical learning and real practice. We introduced porcine models in upper urinary tract endourological training, in order to improve learning curve of unskilled urologists.

Method(s): The video shows the steps to create "ex-vivo model" by porcine urinary tract for endourological training: Ex-vivo porcine upper urinary tract is really close to human urinary tract and, therefore, is better than plastic models. It is also cheap to build and easy to use.

Result(s): All the instruments required for diagnostic or operative endourological procedure, including disposable instruments, may be trained on such a model. The video shows standard endourological procedures on the model. Rigid and flexible cystoscopy Retrograde

Ureteropielography Introducing guide wire up to the kidney The use of ureteral access sheath

Rigid and flexible ureterorenoscopy, explaining tricks to overcome stenosis or ureteral kinkings

Operative procedures on caliceal, ureteral or bladder stones by baskets, ballistic lithotripsy or

laser Percutaneous lithotripsy of a stone.

Conclusion(s): In conclusion, the video aims to offer to the training urologist the possibility to learn the steps of endourological procedures and to build by himself an easy ex-vivo porcine model to train on endourological techniques. Such a training will improve learning curve and will improve results during endourological procedures on human patients.

Status

CONFERENCE ABSTRACT

Publisher

Mary Ann Liebert Inc.

Year of Publication

2009

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[SFX](#)

859.

Sequential flexible Percutaneous and ureteroscopic approach in staghorn calculi.

Multescu R., Geavlete B., Cauni V., Mirciulescu V., Georgescu D., Geavlete P.

Embase

Journal of Endourology. Conference: 27th WCE 2009. Munich Germany. Conference Publication: (var.pagings). 23(SUPPL. 1) (pp A328-A329), 2009. Date of Publication: October 2009.

[Conference Abstract]

AN: 70026562

Background: Percutaneous approach of staghorn calculi may raise some challenges. The aim of our study was to determine the value of sequential flexible nephroscopic and ureteroscopic approach regarding the decrease in morbidity of percutaneous treatment in staghorn calculi.

Method(s): Between January 2003 and January 2009, the sequential flexible nephroscopic and ureteroscopic approach was applied in 7 cases with restant caliceal stone fragments after percutaneous nephrolithotomy with rigid nephroscopes of staghorn calculi. All cases presented restant stones in 2 caliceal groups. We used a 15 F Storz flexible nephroscope, a 7.5 F Storz

flexible ureteroscope, an electrohydraulic lithotripter and various stone extractors (nitinol baskets and triradiate graspers).

Result(s): In 4 cases, the flexible ureteroscope was used due to a narrow infundibulum, which prevented the access of the much larger nephroscope. In the other 3 cases, the flexible retrograde approach was imposed by the impossible percutaneous approach due to an acute angle between the access tract and the calices containing stones. The combined access was successful in rendering the patients stone-free in 85.7% of cases (6/7 patients). In one case, an additional percutaneous access tract was necessary in order to remove a large middle caliceal stone fragment. No major complications were encountered.

Conclusion(s): Sequential flexible nephroscopic and retrograde ureteroscopic approach may be a safe and efficient method in treating restant stone fragments after rigid percutaneous nephrolithotomy for staghorn calculi. It may reduce the need for additional access tracts, thus decreasing the associated morbidity of percutaneous surgery.

Status

CONFERENCE ABSTRACT

Institution

(Multescu, Geavlete, Cauni, Mirciulescu, Georgescu, Geavlete) Romania

Publisher

Mary Ann Liebert Inc.

Year of Publication

2009

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860.

Stone cone versus nitinol tipless dormia basket to avoid proximal stone migration.

Tawfik E.E.R.

Embase

Journal of Endourology. Conference: 27th WCE 2009. Munich Germany. Conference Publication: (var.pagings). 23(SUPPL. 1) (pp A287), 2009. Date of Publication: October 2009.

[Conference Abstract]

AN: 70026429

Background: Stone migration is always a challenge during ur-eteroscopy. In this study we compare the efficacy and safety of stone cone versus nitinol tipless dormia to avoid proximal stone migration during ureteroscopy using the lithoclast.

Method(s): This study included 133 patients with ureteral stones treated ureteroscopically (73 distal, 25 middle and 35 proximal) using semirigid ureteroscope and lithoclast. Stone cone was used in 64 cases and nitinol tipless dormia basket in 69 cases to avoid stone migration.

Result(s): Uretetoscopy was successful in all except 2 cases due to marked oedema and angulation below the stone. Both the stone cone and nitinol tipless dormia basket were effective in preventing stone migration and no significant gravels were left. In 16 patients with very hard stones we had to switch from stone cone to nitinol tipless dormia to avoid migration. Entrapment of the stone with dormia allowed successful fragmentation of hard stones.

Conclusion(s): Both the stone cone and nitinol tipless dormia basket are effective in preventing stone migration. Nitinol tipless dormia is superior for harder stones using the lithoclast but it needs more experience.

Status

CONFERENCE ABSTRACT

Publisher

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Year of Publication

2009

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Criteria to predict successful stone treatment utilizing a disposable flexible ureteroscope.

Lowry P.

Embase

Journal of Endourology. Conference: 27th WCE 2009. Munich Germany. Conference Publication: (var.pagings). 23(SUPPL. 1) (pp A251), 2009. Date of Publication: October 2009.

[Conference Abstract]

AN: 70026310

Background: The expensive cost of maintenance for flexible ur-eteroscopes leads to strategies which will decrease damage to flexible ureteroscopes. We have previously examined shown the effectiveness of a novel disposable flexible ureteroscope in certain situations. The goal of this study was develop criteria which would result in successful surgery using only the disposable flexible ureteroscope. By avoiding usage of traditional flexible ureteroscopes, we hope to prevent the resultant deterioration of the effective, yet expensive and fragile traditional flexible ureteroscopes.

Method(s): Seven patients were screened for surgery by the following criteria: 1) Solitary renal stone less than or equal to 7 mm in the upper or mid pole. 2) Solitary ureteral stone less than or equal to 7 mm in the upper or mid ureter, only if a rigid ureteroscope was unable to access the stone. 3) Less than 5 small renal stones (less than or equal to 5 mm) in the upper or mid pole. 4) Lower pole stones were excluded. 5) Anatomic variations that may cause prevent successful surgery were excluded, such as significant hydronephrosis, calyceal diverticulum, etc. All surgery were performed with the Semiflex ureteroscope made by Maxiflex LLC.

Result(s): One patient had a previously unknown pinpoint ureteral stricture, preventing ureteroscopy. The remaining 6 patients were successfully treated using only the disposable flexible ureteroscope and either laser lithotripsy and/or basket extraction. In 2 cases with 6-7 mm stones requiring laser lithotripsy, traditional flexible ureteroscopy was utilized to confirm that all stone fragments had been removed.

Conclusion(s): Using these criteria, patients may be successfully treated using only the disposable flexible ureteroscope. We believe that judicious usage of this ureteroscope may help decrease damage and deterioration of traditional flexible ureteroscopes, which may be reserved for more complex ureteroscopic cases. As our experience and comfort with the disposable flexible ureteroscope increases, inclusion criteria for usage of this scope may expand.

Status

CONFERENCE ABSTRACT

Institution

(Lowry) TX

Publisher

Mary Ann Liebert Inc.

Year of Publication
2009

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862.

Ureteroscopic management of the stone in Calyceal Diverticulum.

U E.B., Segui A.G., Fernandez I.G., Mir M.G.

Embase

Journal of Endourology. Conference: 27th WCE 2009. Munich Germany. Conference Publication:
(var.pagings). 23(SUPPL. 1) (pp A235), 2009. Date of Publication: October 2009.

[Conference Abstract]

AN: 70026253

Background: Calyceal Diverticulum (CD) is a congenital non-secretory cavity in the renal parenchyma lined with transitional cell epithelium. Stones are found concomitantly within the diverticulum in 9.5-39% of the cases. Percutaneous approach is the most established technique for this disorder. Retrograde management with the use of minimally invasive flexible devices has been used to treat this disorder in some selected cases. We present a case of CD harboring a stone (CDS) treated with flexible ureteroscope in combination with Holmium YAG laser.

Method(s): A 32-year-old woman presented elsewhere with left flank pain treated with SWL 7 times without resolution of the symptoms. Ultrasound showed a 2 cm left renal stone. An IVP and CT scan revealed a middle calyceal diverticulum harboring the stone. A retrograde approach via flexible 7.5 ureteroscope was done, identifying a pinpoint diverticulum neck. The Holmium YAG laser was used to incise the stenotic infundibulum and to treat the stone. The residual stone fragments inside the CD were removed by tipless stone basket, and a pig-tail catheter was inserted with the proximal tip inside the diverticulum.

Result(s): The OR time was 90 minutes, the hospitalization stay was 2 days, two weeks post-operative plain abdominal x-ray showed less than 4 mm fragment stones, and the patient was without pain during two months follow-up.

Conclusion(s): Ureteroscopic management CDS with the use of flexible devices in combination with Holmium YAG laser is a feasible and effective therapy in selected cases and avoids the potential complications and discomfort of percutaneous approach.

Status

CONFERENCE ABSTRACT

Institution

(U, Segui, Fernandez, Mir) Spain

Publisher

Mary Ann Liebert Inc.

Year of Publication

2009

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863.

Ureteroscopic management of renal calculi in special situations.

Xavier A., De Juan K., Brites R., Santos F.C.D., Figueiredo f Facs A.M., Paulo J.T.-S.

Embase

Journal of Endourology. Conference: 27th WCE 2009. Munich Germany. Conference Publication: (var.pagings). 23(SUPPL. 1) (pp A203), 2009. Date of Publication: October 2009.

[Conference Abstract]

AN: 70026152

Background: To review our experience in treating patients with renal calculi, in special anatomical situations, and to evaluate the efficacy of this approach.

Method(s): 12 patients with renal calculous in anomalous kidneys were identified. Ureteroscope size, litotribe used, duration of surgery, complications and stenting were the parameters evaluated.

Result(s): Our cohort consisted of 1 patient with uretero-uretero anastomosis, 6 patients with horseshoe kidney, and 5 patients with pelvic kidneys, (8 males, 4 females, mean age 48.2 years). Nitinol baskets, ho-yag laser, and 7.5 flexible ureteroscope were used in all patients. 9 patients had complete clearance of the stones in post op imaging. 2 patients (1 horseshoe kidney and 1 pelvic kidney) required additional surgical intervention.

Conclusion(s): Flexible ureteroscopy is considered a reasonable procedure and an alternative to shockwave lithotripsy in the management of this particular cases, and can also be considered an excellent option for select patients with stones in horseshoe kidneys and pelvic kidneys, before a percutaneous procedure.

Status

CONFERENCE ABSTRACT

Publisher

Mary Ann Liebert Inc.

Year of Publication

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864.

Changing trends in the use of ureteroscopic instruments from 1996 to 2008.

Bagley D., Leone N., Garcia-Roig M.

Embase

Journal of Endourology. Conference: 27th WCE 2009. Munich Germany. Conference Publication: (var.pagings). 23(SUPPL. 1) (pp A180), 2009. Date of Publication: October 2009.

[Conference Abstract]

AN: 70026076

Background: Despite ongoing advances in the field of endourology, there are few reports describing specific changes adopted by urologists that have come as a result. We investigated the progression of single surgeon's clinical practice over a 12 year period, noting differences in ureteroscopes, ancillary equipment, and indications for surgery over that time.

Method(s): The records of 1181 patients undergoing ureteroscopy by a single surgeon were reviewed. Consecutive patients from the years 1996 (n = 200), 1998 (n = 179), 2000 (n = 198), 2002 (n= 127), 2004 (n= 137), 2006 (n= 200), and 2008 (n = 140) were included in the study. Patients remained grouped by the year of their procedure for comparison. Compared variables included the indication for surgery, type of anesthesia, method of ureteral dilation and stabilization, specific ureteroscopes used, type and number of working instruments employed, and the method of postprocedure ureteral drainage.

Result(s): A change favoring smaller, more flexible ureteroscopes was seen. An increase in the percentage of surgeries performed for upper tract tumors paralleled decreasing trends in urolithiasis and UPJ obstruction surgery. A divergence in the devices used for calculi and upper tract tumors was seen.

Conclusion(s): Over the past 12 years, technological advancements in the field of endourologic surgery has resulted in shifting clinical practice for endourologists, with trends favoring smaller, actively flexible ureteroscopes, intrarenal surgery, and nitinol basket use.

Status

CONFERENCE ABSTRACT

Institution

(Bagley, Leone, Garcia-Roig) United States

Publisher

Mary Ann Liebert Inc.

Year of Publication

2009

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865.

The stone breaker lithotripter for stone fragmentation: Our preliminary results.

Cauda F.

Embase

Journal of Endourology. Conference: 27th WCE 2009. Munich Germany. Conference Publication: (var.pagings). 23(SUPPL. 1) (pp A83-A84), 2009. Date of Publication: October 2009.

[Conference Abstract]

AN: 70025762

Background: Aim of the study was to evaluate safety and effectiveness of a new device for stone fragmentation in clinical practice.

Method(s): The study lasted from March to June 2009 and involved 40 patients treated for urinary stones by the same surgeon, both with ureteroscopic both with percutaneous procedures. Stone fragmentation was exclusively performed with Stonebreaker (Cook Ireland Ltd), a pneumatic handheld, non-electric lithotripter which can be used via rigid or semi-rigid endoscope. We considered the following data: age, sex, side (right or left), location (ureter or pelvis/calyx) and size of stones. Type of procedure, number of shock waves (SW), stone free rate, complications and post-operative hospital stay were recorded too.

Result(s): Mean age was 51 years, 25 patients were male and 15 female. Left: Right side of the stone was 22:18. Mean stone size was 13 mm (5-40mm). Stone location was ureter in 15 cases and pyelocaliceal system in 25 cases. In 25 cases a supine PNL and in 15 cases an ureteroscopy was performed. Mean number of SW was 12 (2-25). No complications were recorded, in particular no perforation of ureter or bleeding were recorded, moreover no malfunctioning of the device was recorded. Stone free rate after the procedure (evaluated with RX KUB and/or abdominal US after 15 days from the procedure) was 97%. Mean post operative hospital stay was 2 days (1-4).

Conclusion(s): The results of our initial experience suggest that StoneBreaker is a safe and effective device for stone fragmentation. It allows a quick, ergonomic and easy fragmentation, reduces the "stone dust" that impair endoscopic vision during lithotripsy, and last but not least, it is atraumatic for the urinary mucosa.

Status

CONFERENCE ABSTRACT

Institution

(Cauda) Italy

Publisher

Mary Ann Liebert Inc.

Year of Publication

2009

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866.

Percutaneous renal surgery: Use of flexible nephroscopy and treatment of infundibular stenoses.

Walsh R.M., Kelly C.R., Gupta M.

Embase

Journal of Endourology. 23(10) (pp 1679-1685), 2009. Date of Publication: 10 Jan 2009.

[Review]

AN: 355563254

Percutaneous nephrolithotomy is now the gold standard for treatment of large renal stones. In this article, we describe the indications for use of antegrade flexible nephroscopy during percutaneous nephrolithotomy, as well as for treatment of infundibular stenosis. We also discuss various new technologies to help in these endeavors, including digital cystoscopes and ureteroscopes and our preferred baskets, as well as our particular techniques for improving stone-free rates. The treatment of infundibular stenosis through percutaneous access is also reviewed. © Mary Ann Liebert, Inc.

PMC Identifier

19630499 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=19630499>]

Status

Embase

Institution

(Walsh, Kelly, Gupta) Department of Urology, Columbia University, 161 Ft. Washington Ave. 11th Floor, New York, NY 10032, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2009

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867.

The efficacy of retrograde intrarenal surgery (RIRS) in the management of renal stone disease.

Kim J., Park J., Park H.

Embase

Korean Journal of Urology. 50(8) (pp 786-790), 2009. Date of Publication: August 2009.

[Article]

AN: 355189565

Purpose: With recent technological advances, the indications for retrograde intrarenal surgery (RIRS) have gradually increased. We evaluated the efficacy and treatment outcomes of RIRS for the treatment of renal stones.

Material(s) and Method(s): We retrospectively reviewed the medical records of 23 patients with renal stones (7 in the renal pelvis, 9 in the renal calyx, and 7 in the renal diverticulum) treated with RIRS from January 2001 to July 2008. Mean stone burden was 110 mm² (range, 9.42-428.6 mm²), and all operations were performed under general anesthesia using a semi-rigid ureteroscope in 9 cases, a flexible ureteroscope in 11 cases, and both types simultaneously in 3 cases. The holmium:yttrium-aluminum-garnet (Ho: YAG) laser and the nitinol basket were used for stone fragmentation and retrieval. The patients were followed up postoperatively with KUB (21 cases) or nonenhanced computed tomography (CT; 2 cases). Success was defined as no visible stones on KUB or nonenhanced CT.

Result(s): The mean operating time was 93 minutes (range, 30-205 minutes) and the mean hospital stay was 3.7 days (range, 1-9 days). Of 23 patients, 16 (70%) experienced complete elimination of the stone after only a single intervention. After ancillary extracorporeal shock wave

lithotripsy (ESWL), the success rate was increased to 74% (17/23). In the remaining 6 patients, residual stone findings were less than 3 mm and were followed up with X-ray.

Conclusion(s): RIRS is a feasible procedure for treating renal stone disease with minimal complications. The results of our study suggest that RIRS can be recommended as a primary modality in the management of renal stone disease in selected patients such as those with ESWL failure and renal diverticular stones. © The Korean Urological Association, 2009.

Status

Embase

Institution

(Kim, Park) Department of Urology, Asan Medical Center, University of Ulsan College of Medicine, 388-1, Pungnap2-dong, Songpa-gu, Seoul 138-736, South Korea (Park) Eulji University Hospital, Daejeon, South Korea

Publisher

Korean Urological Association (Room 419, 4F, Jungmyung Honeyville Plaza # 965, Kangnam-gu, Seoul 135-270, South Korea)

Year of Publication

2009

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868.

Pyelovenous fistula: A rare cause of hematuria.

Demir O., Ozdemir I., Bozkurt O., Secil M., Esen A.

Embase

Clinical Nephrology. 70(3) (pp 259-260), 2008. Date of Publication: September 2008.

[Article]

AN: 352385152

A 72-year-old female who was admitted to our urology clinic with painless intermittent macroscopic hematuria existing for 3 months with no other voiding symptom was diagnosed with left pyelovenous fistula. Although a rare condition, pyelovenous fistula should be kept in mind when the cause of macroscopic hematuria cannot be diagnosed with routine radiological examinations, and retrograde pyelography should be the method of choice for the diagnosis in this rare condition. ©2008 Dustri-Verlag Dr. K. Feistle.

PMC Identifier

18793570 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=18793570>]

Status

Embase

Institution

(Demir, Ozdemir, Bozkurt, Esen) Department of Urology, School of Medicine, Dokuz Eylul University, 35340 Inciralti/Izmir, Turkey (Secil) Department of Radiology, School of Medicine, Dokuz Eylul University, 35340 Inciralti/Izmir, Turkey

Publisher

Dustri-Verlag Dr. Karl Feistle

Year of Publication

2008

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869.

Antimigration devices during endoscopic lithotripsy with holmium:yag laser. Dispositivos antimigracion durante la litotricia endoscopica con laser de holmium:yag <Dispositivos antimigracion durante la litotricia endoscopica con laser de holmium:yag.>

Garrido Abad P., Fernandez Gonzalez I., Coloma Del Peso A., Jimenez Galvez M., Herranz Fernandez L.M., Mora Durban M., Bocardo Fajardo G., Serrano Pascual A., Herrero Torres L., Pereira Sanz I.

Embase

Archivos Espanoles de Urologia. 61(9) (pp 1115-1125), 2008. Date of Publication: November 2008.

[Review]

AN: 352834299

OBJECTIVES: Lithiasic pathology continues being very prevalent in our environment. There are multiple approaches and treatments to solve it in current urology. Lately, endourological techniques have suffered a spectacular advance which has permitted to increase their success rates, diminishing also their comorbidity very much. Nevertheless, despite all improvements we still face a series of complications that may reduce the success of the procedure. Among all of them, we emphasize stone retropulsion during endoscopic lithotripsy, because it appears in an important number of procedures and, it does not only diminish the range of stone free patients, but also is associated with a longer surgical time, and occasionally will make necessary the employment of additional procedures that increase cost and treatment morbidity. To reduce the incidence of this retropulsion classical manoeuvres have been employed: antitrendelenburg, decrease of the intensity of the irrigation flow, modification of laser parameters, or pneumatic balloons. Currently, we have other more effective mechanisms to combat it, among them: the devices that occlude the ureteral lumen, and nitinol baskets/forceps. Adequate selection of the stone extraction device may be definitive for completion of the ureterorenoscopic procedure with success, and in the programmed time. The election of an inadequate device may make the procedure impossible or cause iatrogenic damage to the urinary tract. For all it, specific instruments to entrap and extract stones (baskets and ureteral lumen occlusion devices) is an armamentarium that every endourologist should be familiar with.

PMC Identifier

19140595 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=19140595>]

Institution

(Garrido Abad, Fernandez Gonzalez, Coloma Del Peso, Mora Durban, Bocardo Fajardo, Herrero Torres, Pereira Sanz) Servicio de Urologia, Hospital Universitario de la Princesa, Madrid, Spain
(Jimenez Galvez, Herranz Fernandez) Servicio de Urologia, Hospital del Henares, Coslada.

Madrid, Spain

(Serrano Pascual) Servicio de Urologia, Hospital Universitario de Guadalajara, Guadalajara, Spain

(Garrido Abad) Servicio de Urologia, Hospital Universitario de la Princesa, Diego de Leon, 62, 28006 Madrid, Spain

Publisher

Inietares, S.A. (General Ampudia, 14-Bajo a, Madrid 28003, Spain)

Year of Publication

2008

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870.

Use of the Escape™ nitinol stone retrieval basket facilitates fragmentation and extraction of ureteral and renal calculi: A pilot study.

Kesler S.S., Pierre S.A., Brison D.I., Preminger G.M., Munver R.

Embase

Journal of Endourology. 22(6) (pp 1213-1217), 2008. Date of Publication: 01 Jun 2008.

[Article]

AN: 351913499

Background and Purpose: Advances in ureteroscope and stone basket design have catapulted ureteroscopy to the forefront of surgical stone management; however, persistent problems such as stone migration continue to challenge urologists. The Escape™ nitinol stone retrieval basket (Boston Scientific, Natick, MA) is a stone basket designed to capture calculi and facilitate simultaneous laser lithotripsy in situ. We report our initial experience with the Escape™ basket for the management of urinary calculi and compare the use of this device with other methods of optimizing ureteroscopic stone management.

Patients and Methods: A prospective evaluation of 23 patients undergoing ureteroscopic holmium:yttrium-aluminum-garnet laser lithotripsy of urinary calculi was performed at two institutions by two surgeons (R.M. and G.M.P). The Escape basket was used to prevent retrograde ureteral stone migration or to facilitate fragmentation and extraction of large renal calculi. Patient demographics and perioperative parameters were assessed.

Result(s): Twenty-three patients (16 men, 7 women), with a mean age of 55.5 years (range 33-74 yrs) were treated for renal (n = 9) or ureteral (n = 14) calculi. The mean stone diameter was 1.4 cm (range 0.4-2.5 cm), mean fragmentation time was 44.1 minutes (range 10-75 min), and mean energy used was 3.1 kJ (range 0.4-10.6 kJ). No complications were encountered. Eighty-seven

percent (20/23) of patients were rendered completely stone free after ureteroscopic laser lithotripsy using the Escape basket. Of the three patients with residual calculi, one patient with a 2.5-cm renal calculus had residual fragments larger than 3 mm, and two patients with large renal calculi had residual fragments smaller than 3 mm.

Conclusion(s): The Escape basket appears to be safe and effective in preventing stone migration and facilitating ureteroscopic laser lithotripsy and stone extraction. © Mary Ann Liebert, Inc. 2008.

PMC Identifier

18578653 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=18578653>]

Status

Embase

Institution

(Kesler, Munver) Department of Urology, Hackensack University Medical Center, Hackensack, NJ, United States (Pierre, Preminger) Division of Urology, Department of Surgery, Duke University Medical Center, Durham, NC, United States

(Brison, Munver) University of Medicine and Dentistry of New Jersey, New Jersey Medical School, Newark, NJ, United States

(Kesler) Department of Urology, Hackensack University Medical Center, 360 Essex Street, Hackensack, NJ 07601, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2008

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871.

Combined flexible and semirigid ureteroscopy with laser lithotripsy: Alternative to percutaneous nephrolithotomy of complex EWSL refractory nephrolithiasis. Kombinierte flexible und semirigide

ureterorenoskopie mit laserlithotripsie: Alternative zur perkutanen litholapaxie komplexer ESWL-refraktärer nephrolithiasis <Kombinierte flexible und semirigide ureterorenoskopie mit laserlithotripsie: Alternative zur perkutanen litholapaxie komplexer ESWL-refraktärer nephrolithiasis.>

Ebert A.K., Schafhauser W.

Embase

Urologe - Ausgabe A. 47(8) (pp 994-1000), 2008. Date of Publication: August 2008.

[Article]

AN: 50119427

Background. Flexible ureteroscopic laser lithotripsy of intrarenal calculi is technically demanding and challenging due to potential dislocation from the calyx and damage to the tissue or the fiber optic during in situ laser lithotripsy. Material and methods. In 12 consecutive patients ESWL resistant renal stones were collected with the flexible ureteroscope using the nitinol basket and repositioned into the renal pelvis. After removing the flexible ureteroscope from the ureter the stones were treated through an additionally inserted semirigid ureteroscope with frequency-doubled double-pulse Neodym:YAG (FREDDY) laser under direct vision. Results. Operating time was on average 110 min. During the complication-free 3 month follow-up, 8 patients had complete success, 3 partial success, 1 patient had residual fragments >3 mm and 88% of lower pole calyces were stone-free. Conclusions. As an alternative to percutaneous nephrolithotomy, repositioning of renal stones to the renal pelvis with the flexible instrument allows in selected cases safe laser fragmentation through a semirigid instrument. Access or exposition-related problems can be solved and repair costs of the instruments will be minimized. © 2008 Springer Medizin Verlag.

PMC Identifier

18408912 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=18408912>]

Status

Embase

Institution

(Ebert) Abteilung für Kinderurologie, Universität Regensburg, Klinik St. Hedwig, Regensburg, Germany (Schafhauser) Klinik für Urologie und Kinderurologie, Klinikum Fichtelgebirge, Marktreidwitz, Germany

(Ebert) Abteilung für Kinderurologie, Universität Regensburg, Klinik St. Hedwig, Steinmetzstr. 1-3, Regensburg 93049, Germany

Publisher

Springer Verlag (Tiergartenstrasse 17, Heidelberg D-69121, Germany)

Year of Publication

2008

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Link to the External Link Resolver:

[SFX](#)

872.

Impact of irrigation systems on stone migration.

Hendlin K., Weiland D., Monga M.

Embase

Journal of Endourology. 22(3) (pp 453-458), 2008. Date of Publication: 01 Mar 2008.

[Article]

AN: 351430725

Purpose: To evaluate forces exerted on a stone with different ureteroscopic irrigation systems that could impact stone migration during ureteroscopy.

Material(s) and Method(s): A 3-mm steel simulated stone was welded to a 3F stone basket. The basket wire was then backloaded into the working channel of a 4.5F Wolf semirigid ureteroscope. The basket shaft was attached to a 50 g load cell. The ureteroscope was placed in a ureteral model (14F silicon tubing). Simulated blood was dripped adjacent to the stone at 12 drops/min. Endo-irrigation devices were attached to the ureteroscope, and irrigation was applied at a rate sufficient to maintain visualization of the stone. Force on the stone was measured with the following endo-irrigation systems Gravity (183 cm H₂O); pressurized irrigation (150 mm Hg, 300 mm Hg); Kosin Technology Universal Piggyback Irrigation System (UPIS) at gravity (183 cm H₂O), 150 mm Hg and 300 mm Hg; EMS Medical Peditrol Foot Pump; Cook Ureteroscopy Irrigation System; ACMI Irri-Flo Irrigation Delivery System; and Boston Scientific Single-Action-Pump System (SAPS).

Result(s): SAP required the least number of pumps (0.35/sec) to maintain a clear endoscopic field while the Peditrol device required the most (1.88/sec). Pulse duration was longest for the ACMI (1.6 sec) and shortest for pressurized gravity and UPIS (<0.3 sec). The average total maximum impulse during a pump was significantly greater with the Cook (0.017 Ns) and ACMI

(0.027 Ns) systems. On average, gravity-based systems applied the least amount of force, ≤ 0.0006 Ns, maximum impulse at any given time.

Conclusion(s): Gravity-based systems exert less force than hand-held and foot-pump devices. Of the hand-held devices, the SAP exerted the least average maximum impulse on the stone. ©

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PMC Identifier

18355140 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=18355140>]

Status

Embase

Institution

(Hendlin, Weiland, Monga) Department of Urologic Surgery, University of Minnesota, Minneapolis, MN, United States (Monga) MMC #394, 420 Delaware St. SE, Minneapolis, MN 55455-0392, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2008

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873.

Retrograde endoscopic-assisted percutaneous renal access: A novel "lasso" technique to achieve rapid secure access to the collecting system.

Patel M.B., Mason B.M., Hoenig D.M.

Embase

Journal of Endourology. 22(4) (pp 591-596), 2008. Date of Publication: 01 Apr 2008.

[Article]

AN: 351550775

Image-guided percutaneous renal access for placement of an access sheath for percutaneous nephrolithotomy can be a challenging procedure, especially in patients with nondilated collecting systems, obstructed infundibula (stones or stricture), or extreme body habitus. We describe our experience using ureteroscopy along with a zero-tip stone basket to facilitate a through-and-through (percutaneous-urethra) access to the collecting system. © 2008 Mary Ann Liebert, Inc.

PMC Identifier

18419204 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=18419204>]

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Embase

Institution

(Hoenig) Dept. of Urology, Albert Einstein College of Medicine, Montefiore Medical Center, 1825 Eastchester Road, Bronx, NY 10461, United States

Publisher

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Year of Publication

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874.

Ureteroscopic management of stones in anomalous kidneys.

Ferrandino M.N., Preminger G.M.

Embase

Archivio Italiano di Urologia e Andrologia. 80(1) (pp 18-20), 2008. Date of Publication: March 2008.

[Article]

AN: 351550463

Surgical management of stones in anomalous kidney presents a problem for urologic surgeons. Various minimally invasive management options have been previously reported including shock wave lithotripsy (SWL), percutaneous nephrolithotomy (PNL), as well as ureteroscopy. While all of their techniques work well in select populations, recent improvements in endoscopic technology and intracorporeal lithotripsy make ureteroscopy possible for most cases of stones in ectopic, pelvic, or transplant kidneys. Additionally, many of the limitations of shock wave lithotripsy and/or percutaneous nephrolithotomy can be overcome with a ureteroscopic approach. As new endoscopic technology and adjunctive device developments continue to enter the urologist's armamentarium the role of ureteroscopy continues to expand. Once unapproachable stones may now be addressed via flexible ureteroscopes, improved baskets, and holmium lasers. In conclusion ureteroscopic management of urolithiasis in anomalously located kidneys is a viable approach. Success rates are similar to those reported for SWL and the morbidity is less than PNL. With increasing dissemination of ureteroscopic skills, improved technology and enhanced adjunctive devices (i.e.; sheaths and baskets), ureteroscopy should play a larger role in the management of these challenging patients, with subsequently reduced patient morbidity.

PMC Identifier

18533620 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=18533620>]

Status

Embase

Institution

(Ferrandino, Preminger) Comprehensive Kidney Stone Center, Duke University Medical Center, Durham, NC, United States (Ferrandino) Comprehensive Kidney Stone Center, Duke University Medical Center, Division of Urologic Surgery, White Zone, Duke South, Durham, NC 27710, United States

(Preminger) Comprehensive Kidney Stone Center, Duke University Medical Center, DUMC 3167, White Zone, Duke South, Durham, NC 27710, United States

Publisher

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Year of Publication

2008

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875.

Ureteroscopic holmium laser lithotripsy in patients with renal impairment.

Safwat A.S., Bissada N.K., Kumar U., Taha M.I., Elanany F.G., Eltaher A.M., Abdalla M.A.

Embase

International Urology and Nephrology. 40(1) (pp 15-17), 2008. Date of Publication: March 2008.

[Article]

AN: 351459864

Objectives: In this study, we try to evaluate the efficacy and safety of holmium lasers for treatment of ureteric stones in patients with renal impairment or obstructive anuria.

Patients and Methods: Twenty-six patients were included in this study, of which 20 patients presented with elevated blood urea and serum creatinine (2.1-7.6 mg%), and six patients presented with calculi anuria (mean serum creatinine 22 mg%). None of the patients had a ureteric stent or nephrostomy tube before the ureteroscopy. All patients were treated with holmium laser. A stone basket or grasper was used to remove significant stone fragments at the end of the procedure in seven patients. In these seven patients, ureteric stents were placed at the end of the procedure.

Result(s): All patients were free of any stone fragments at 1 week and at 3 months postoperatively. In all patients, including the six with obstructive anuria, the renal impairment resolved or improved as evidenced by normalization or fall in blood urea and creatinine. Thus, in this small group of uremic patients, the success rate for treatment of ureteral stone was 100%.

Conclusion(s): A holmium laser is a safe and effective modality of ureteroscopic lithotripsy in patients with significant renal impairment or even obstructive anuria. The use of holmium laser with ureteroscopy may be considered in this group of patients as long as the general condition of the patient permits the safe administration of anesthesia. © Springer Science+Business Media B.V. 2007.

PMC Identifier

17680339 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=17680339>]

Status

Embase

Institution

(Safwat, Bissada, Kumar) Department of Urology, University of Arkansas for Medical Sciences, 4301 West Markham St., Little Rock, AR 72205-7199, United States (Taha, Elanany, Eltaher, Abdalla) Department of Urology, Assiut University, Assiut, Egypt

Publisher

Springer Netherlands (Van Godewijkstraat 30, Dordrecht 3311 GZ, Netherlands)

Year of Publication

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876.

Endovascular snare kit in the combined antegrade and retrograde management of ureteral avulsion: Report of two cases.

Zattoni F., Gasparini D., Sponza M., Valotto C., Ruggera L., Cerruto M.A.

Embase

Urological Research. 36(2) (pp 123-125), 2008. Date of Publication: May 2008.

[Article]

AN: 50126009

We report the feasible and safe use of the Amplatz Goose Neck Snare kit for avulsed ureter retrieval during ureteroscopy. A 49-year-old lady and a 61-year-old man complaining of urolithiasis underwent ureteroscopy; following stone fragmentation, and basketing avulsion of the ureter occurred. Using the Amplatz Goose Neck Snare kit it was possible to place an indwelling ureteral catheter in both cases aiming at restoring the urinary upper tract continuity. The snare-assisted endovascular technique may be an interesting tool even in endourology for the management of ureteral avulsion. This endoscopic mini-invasive procedure makes it possible to avoid an immediate invasive surgical approach often resulting in nephrectomy, having time for planning a possible durable conservative treatment. © 2008 Springer-Verlag.

PMC Identifier

18427797 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=18427797>]

Status

Embase

Institution

(Zattoni, Valotto, Ruggera, Cerruto) Department of Biomedical and Surgical Sciences, Urology Clinic, University of Verona, Piazzale L. Scuro 10, 37134 Verona, Italy (Gasparini, Sponza) Department of Radiology, University Hospital, Udine, Italy

Publisher

Springer Verlag (Tiergartenstrasse 17, Heidelberg D-69121, Germany)

Year of Publication

2008

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877.

Flexible Ureteroscopy and Laser Lithotripsy for Single Intrarenal Stones 2 cm or Greater-Is This the New Frontier?.

Breda A., Ogunyemi O., Leppert J.T., Lam J.S., Schulam P.G.

Embase

Journal of Urology. 179(3) (pp 981-984), 2008. Date of Publication: March 2008.

[Article]

AN: 50042103

Purpose: Percutaneous nephrolithotomy has been the standard of care for intrarenal calculi greater than 2 cm. Flexible ureteroscopy with holmium laser lithotripsy is a minimally invasive treatment modality that is able to treat large intrarenal calculi with the potential to decrease morbidity, while maintaining a high level of efficacy.

Material(s) and Method(s): A total of 15 patients with a single intrarenal calculus 2 cm or greater were treated with retrograde ureteroscopic nephrolithotripsy. Lithotripsy was performed with a

7.2Fr flexible ureteroscope and 200 mu laser fiber. The stone-free rate was defined as the absence of any stones in the kidney or residual stone fragments less than 1 mm, which is too small to be extracted with a basket or a grasper. All patients underwent followup ureteroscopy within 15 days after the last procedure and renal ultrasound 30 days after the last treatment. Result(s): There were a total of 15 intrarenal calculi 20 to 25 mm (mean 22) in diameter. The mean number of procedures was 2.3 (range 2 to 4). The overall stone-free rate was 93.3%. One patient (6.6%) had a residual 5 mm stone fragment in the lower pole of the kidney, which was followed expectantly for 2 years with no change in size. There were no major complications. There were 3 minor complications (20%), including 1 emergency room visit for fever and pain, and 2 cases of gross hematuria. All cases were performed on an outpatient basis. Conclusion(s): In select patients with a single intrarenal calculus 2 cm or greater small diameter flexible ureteroscopy with holmium laser lithotripsy may represent an alternative therapy to standard percutaneous nephrolithotomy with acceptable efficacy and low morbidity. © 2008 American Urological Association.

PMC Identifier

18207179 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=18207179>]

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Embase

Institution

(Breda, Ogunyemi, Leppert, Lam, Schulam) Department of Urology, David Geffen School of Medicine, University of California-Los Angeles, Los Angeles, CA, United States

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Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

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Lower calyceal occlusion by autologous blood clot to prevent stone fragment reaccumulation after retrograde intra-renal surgery for lower calyceal stones: First experience of a new technique.

Patel A.

Embase

Journal of Endourology. 22(11) (pp 2501-2506), 2008. Date of Publication: 01 Nov 2008.

[Article]

AN: 352800645

Purpose: We tested the hypothesis that lower calyceal (LC) autologous blood clot (ABC) occlusion, after retrograde intra-renal surgery (RIRS) may prevent LC fragment reaccumulation where all fragments cannot be directly removed.

Method(s): Over two years, patients with LC stones >6 mm <2 cm, that had presented de-novo or failed primary SWL or PNL elsewhere, were treated with RIRS. After intra-renal relocation into a favorable lie, stones were fragmented with Holmium laser energy to <3 mm, suitable for spontaneous passage. The LC was filled with 5-10 cc venous autologous blood with the patient in reverse Trendelenberg, leaving the blood to clot. After confirmatory pyelogram a DJ stent was placed. Ultrasound and KUB at 3 months assessed stone free rate.

Result(s): This technique was tested in 35 patients with LC calculi (16 as primary treatment, and 19 as salvage for residual fragments post SWL or PNL). Nine salvage patients had indwelling DJ stents (three significantly encrusted at RIRS). Nine unstented patients had upper ureteral tortuosities or narrowing limiting multiple instrument passes for stone removal. Median maximum stone dimension was 1.2 cm. All were successfully relocated & fragmented. A Nitinol basket was required for stone relocation in 60%. All but one occlusion procedures succeeded at the first attempt. None required re-admission for clot colic. Only 8.6% required more than overnight hospital stay. Three and six month stone free rates were 94% and 97% respectively.

Conclusion(s): The simple LC autologous blood clot occlusion technique after RIRS, for difficult LC stones, validates our hypothesis and results in excellent stone free rates, while minimizing ureteral trauma from multiple instrument passages needed for active fragment removal. This study supports the need for multi-center experience of this technique to validate our results. ©

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PMC Identifier

18928383 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=18928383>]

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Institution

(Patel) Department of Urology, St. Mary's Hospital, Imperial College School of Medicine, Praed Street, London, W2 1NY, United Kingdom

Publisher

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879.

Clinical outcome of ureteroscopic lithotripsy for 2,129 patients with ureteral stones.

Kurahashi T., Miyake H., Oka N., Shinozaki M., Takenaka A., Hara I., Fujisawa M.

Embase

Urological Research. 35(3) (pp 149-153), 2007. Date of Publication: June 2007.

[Article]

AN: 46828953

The objective of this study was to retrospectively analyze the clinical outcomes of ureteroscopic lithotripsy (USL) performed in patients with ureteral stones, and to investigate the factors associated with therapeutic outcomes. This study included a total of 2,129 patients with ureteral stones who underwent USL between December 1985 and March 2006 in a single institution in Japan. In this series, ultrasonic lithotripsy was primarily performed, and forceps and/or baskets were occasionally used for the removal of stones. Complete removal was defined as total clearance 1 day after the initial USL. The initial stone-free rate following a single treatment with USL was 73.3%. Of 569 patients diagnosed as having fragmentation of residual stones, additional therapy was not performed for 115 with stones likely to pass spontaneously, while the remaining 454 subsequently underwent extracorporeal shock wave lithotripsy. Thereafter, ureterolithotomy or percutaneous nephrolithotripsy was further added in 14. Ureteral perforation occurred in 14 patients, of whom 2 underwent nephrectomy; however, there were no other serious complications that could not be managed by conservative treatment. Whether ureteral stones were completely removed by an initial USL was significantly associated with the history of

ureteral stone, severity of clinical symptoms, number of stones, localization of stones and maximal diameter of stones. Furthermore, multivariate analysis identified the severity of clinical symptoms, number of stones, localization of stones and maximal diameter of stones as independent predictors for complete removal of ureteral stones by the initial USL application. These findings suggest that USL could be a safe and effective treatment option for ureteral stones; however, other therapeutic strategies should also be considered in patients with currently identified risk factors associated with treatment failure following a single USL procedure. © 2007 Springer-Verlag.

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17453184 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=17453184>]

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Embase

Institution

(Kurahashi, Miyake, Takenaka, Hara, Fujisawa) Division of Urology, Kobe University Graduate School of Medicine, 7-5-1 Kusunoki-cho, Chuo-ku, Kobe 650-0017, Japan (Oka, Shinozaki) Hara Genitourinary Hospital, Kobe, Japan

Publisher

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Year of Publication

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880.

Lateral deflection to release a stone: A simple method.

Weiland D., Hendlin K., Canales B.K., Lukasewycz S., Monga M.

Embase

Journal of Endourology. 21(10) (pp 1149-1150), 2007. Date of Publication: 01 Oct 2007.

[Article]

AN: 47614381

We describe and demonstrate a simple method to release a stone from a basket that emphasizes the importance of lateral deflection of the ureteroscope while opening and advancing the basket. This technique works well with semirigid and flexible ureteroscopes and all stone baskets, although some difficulty may be encountered with flat-wire baskets. © 2007 Mary Ann Liebert, Inc.

PMC Identifier

17949314 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=17949314>]

Status

Embase

Institution

(Weiland, Hendlin, Canales, Lukasewycz, Monga) Department of Urologic Surgery, University of Minnesota, Minneapolis, MN, United States (Monga) Dept. of Urologic Surgery, University of Minnesota, MMC 394, 420 Delaware St SE, Minneapolis, MN 55455, United States

Publisher

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Year of Publication

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881.

Ureteroscopy for stone treatment using new 270degree semiflexible endoscope: In vitro, ex vivo, and clinical application.

Wendt-Nordahl G., Trojan L., Alken P., Michel M.-S., Knoll T.

Embase

Journal of Endourology. 21(12) (pp 1439-1444), 2007. Date of Publication: December 01, 2007.

[Article]

AN: 351074915

Background and Purpose: The use of flexible ureteroscopy for diagnosis and management of upper urinary tract diseases is limited both by loss of maximum active deflection through the inserted working probes and a high frequency of damage with consequent costs. A newly developed ureteroscope (Flex-X, Karl Storz) with a maximized angle of deflection was introduced to overcome these problems. The aim of our study was to compare this new ureteroscope with an established device in vitro, ex vivo, and in a clinical approach.

Material(s) and Method(s): Angles of maximum active deflection and maximum irrigation flow were measured for both scopes in vitro with an empty working channel and after introduction of different lithotripsy and stone extraction probes. In addition, the loss of maximum active deflection and broken optical fibers of the scopes were assessed after 100 flexible ureteroscopies in an ex-vivo pig cadaver model. The clinical performance of both ureteroscopes was evaluated in 32 patients for management of lower pole stones.

Result(s): The new ureteroscope displays highly improved deflection compared with the standard scope; deflection angles as much as 270degree with an empty working channel were achieved. Thin probes did not inhibit maximum deflection. Durability in ex vivotrials was high. Only minimal loss of maximum deflection and three broken optical fibers were observed. In clinical usage, a stone-free rate of 100% was achieved after 4 weeks. In three patients, the opening mechanism of a basket did not work with maximum deflection because of high friction.

Conclusion(s): The new ureterorenoscope facilitates retrograde stone management and might diminish repair intervals. Further development of comparable devices will support flexible ureterorenoscopy as a standard stone management procedure. © 2007 Mary Ann Liebert, Inc.

PMC Identifier

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Status

Embase

Institution

(Wendt-Nordahl, Trojan, Alken, Michel, Knoll) Department of Urology, University Hospital Mannheim, Mannheim, Germany (Knoll) Department of Urology, University Hospital Mannheim, Th.-Kutzer-Ufer 1-3, 68135 Mannheim, Germany

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882.

Severe iatrogenic ureteral avulsions caused by the ureteroscopic procedures.

Seo E.J., Kang T.W., Noh J.H.

Embase

Korean Journal of Urology. 48(10) (pp 1035-1039), 2007. Date of Publication: October 2007.

[Review]

AN: 350055202

Purpose: We reviewed the incidence, causes, location, treatment and prognosis of the severe iatrogenic ureteral avulsions caused by ureteroscopy procedures.

Material(s) and Method(s): We analyzed the records of eight patients with ureteral avulsion out of 683 patients treated with ureteroscopic procedures, retrospectively. The patients had surgical correction or ureteral double-J stenting for the iatrogenic ureteral avulsions.

Result(s): The incidence of ureteral avulsion was 1.17%. While seven cases occurred during ureteroscopic removal of a stone, five cases among them occurred during stone basketing and two cases occurred during insertion of the ureteroscope. Another case among eight avulsion cases occurred while removing the during an endopyelotomy for a ureteral stricture. Depending on the length of the ureteral avulsion, four cases were over 2cm, the patients open surgical repair for ureteral continuity restoration immediately; three cases, under 2cm, were treated with indwelling ureteral double J stents, and one case with an injury to the entire ureter was treated with a nephrectomy. The result of the surgical treatment as the initial treatment was good in all cases. On the other hand, among the three cases with an inserted ureteral double-J stent, one case had a result and the other two developed hydronephrosis.

Conclusion(s): Careful attention to surgical techniques and awareness of risk factors and types of potential injuries are essential to reduce severe iatrogenic ureteral avulsions. Our reports suggest that open surgical repair is better than an indwelling ureteral double-J stent for patients with a ureteral avulsion.

Status

Embase

Institution

(Seo, Noh) Department of Urology, Kwangju Christian Hospital, Gwangju, South Korea (Kang)

Department of Urology, Chonnam University Medical School, Gwangju, South Korea

Publisher

Korean Urological Association (Room 419, 4F, Jungmyung Honeyville Plaza # 965, Kangnam-gu, Seoul 135-270, South Korea)

Year of Publication

2007

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883.

Durability of endourologic skills: Two-year follow-up study.

Chatterjee S., Radomski S.B., Matsumoto E.D.

Embase

Journal of Endourology. 21(8) (pp 843-846), 2007. Date of Publication: August 2007.

[Article]

AN: 47443656

Purpose: To assess the long-term durability of endourologic skills among urology trainees after an intensive technical skills training course. Subjects and Methods: Seventeen urology residents participated in a 2-day ureteroscopy course at a surgical skills center. Residents performed rigid ureteroscopy and basket manipulation of a small midureteral stone. Performance was assessed immediately after the course and 1 year and 2 years after training. Residents prospectively tracked all ureteroscopic cases in which they were considered the primary surgeon (i.e., performed greater than 75% of the procedure). Performance was measured using a validated global rating score (GRS), checklist score (CLS), and time required to complete the task.

Result(s): Overall, GRS improved over the 2-year follow-up ($P < 0.001$), with most of the improvement occurring in the first year ($P = 0.03$). The CLS and time to complete the task did not change ($P = 0.08$ and 0.12 , respectively). At the 2-year follow-up, the number of cases logged had no significant effect on performance.

Conclusion(s): Ureteroscopy skills are retained and continue to improve 2 years after completing an intense training session that uses high-fidelity bench models. Ureteroscopic experience is important for the maintenance and development of skills, even though they appear to plateau after 1 year. This result may also reflect a ceiling effect of the assessment tools. © Mary Ann Liebert, Inc.

PMC Identifier

17867939 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=17867939>]

Status

Embase

Institution

(Chatterjee, Matsumoto) Department of Urology, McMaster University, St. Joseph's Hospital, Hamilton, Ont., Canada (Radomski) University Health Network, Toronto Hospital Western Division, Toronto, Ont., Canada

(Matsumoto) Dept. of Urology, McMaster University, St. Joseph's Hospital, 50 Charlton Avenue, E, Hamilton, Ont., Canada

Publisher

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Year of Publication

2007

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884.

"Blind Coning"-Using the Stone Cone for Removal of Intramural Ureteral Calculi.

Eisner B.H., Feldman A.S., Chapin B.F., Dretler S.P.

Embase

Urology. 69(4) (pp 773-775), 2007. Date of Publication: April 2007.

[Article]

AN: 46574953

Introduction: To describe the otherwise heretical technique of "blind" nonureteroscopic extraction of calculi from the intramural ureter using a 7-mm-diameter tapered coil called the "Stone Cone."

Technical Considerations: After bypassing the stone and deploying the Stone Cone, slow traction was exerted. The Stone Cone's 5, 6, and 7-mm diameter coils and unique rotary action dilated the tunnel distal to the calculus and the 2, 3, and 4-mm stiffer coils caught the calculus and propelled it out of the transiently dilated intramural ureter. A safety feature is that the coils of the Stone Cone will unwind at greater than 0.2-lb tension. Unlike the baskets, if a pressure greater than this is encountered, the Stone Cone will release the stone, preventing entrapment.

Conclusion(s): In selected cases, use of the Blind-Cone to remove an intramural calculus can be a rapid, effective, and safe alternative to ureteroscopic management. © 2007 Elsevier Inc. All rights reserved.

PMC Identifier

17445670 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=17445670>]

Status

Embase

Institution

(Eisner, Feldman, Chapin, Dretler) Kidney Stone Center, Department of Urology, Massachusetts General Hospital, Boston, MA, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

2007

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885.

Stone Cone: a device that prevents ureteral stone migration during intracorporeal lithotripsy.

Stone Cone: un dispositivo que previene la migración de litiasis ureteral durante la litotricia intracorporea <Stone Cone: un dispositivo que previene la migración de litiasis ureteral durante la litotricia intracorporea.>

Rodriguez Garcia N., Fernandez Gonzalez I., Pascual Mateo C., Chiva Robles V., Lujan Galan M., Llanes Gonzalez L., Berenguer Sanchez A.

Embase

Archivos españoles de urologia. 58(4) (pp 329-334), 2005. Date of Publication: May 2005.

[Article]

AN: 41847287

OBJECTIVES: Proximal migration of stone fragments during ureteroscopic lithotripsy is a common problem influenced by pressure of irrigation solution, type of energy for lithotripsy, site and degree of fixation of the stone to the ureteral wall, and degree of proximal ureteral dilation. The Stone Cone (Boston Scientific & Spencer) is a device that helps to prevent proximal migration of fragments and favours a safe extraction during ureteroscopic lithotripsy.

TECHNIQUE: The Stone Cone is an helical device made of stainless steel and nitinol alloy, which consists of an internal guide wire and a sheath-like radiopaque catheter with a 3 Fr. calibre. Once the cone is placed above the stone it is maintained in that position during lithotripsy to avoid fragment migration. The external catheter is used to coil and unroll the cone, and allows access to place the cone above the stone.

METHOD(S): We describe two cases of urinary calculi in the left lumbar ureter treated by ureteroscopy and intracorporeal lithotripsy with holmium YAG laser using the Stone Cone to avoid migration of fragments.

RESULT(S): One month after surgery no lithiasic fragments were observed in the imaging tests.

CONCLUSION(S): The Stone Cone decreases the need to perform repeated ureteral instrumentations, and is also a safer and simpler method for the extraction of stone fragments. The use of Stone Cone seems to have more advantages than Dormia's basket during ureteroscopic lithotripsy in terms of lower incidence of residual fragments and reoperation rate.

PMC Identifier

15989097 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=15989097>]

Institution

(Rodriguez Garcia, Fernandez Gonzalez, Pascual Mateo, Chiva Robles, Lujan Galan, Llanes Gonzalez, Berenguer Sanchez) Servicio de Urologia, Hospital Universitario de Getafe, Getafe, Madrid, Espana.

Year of Publication
2005

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886.

Ureteroscopy in children: Is there a need for ureteral dilation and postoperative stenting?
Herndon C.D.A., Viamonte L., Joseph D.B.

Embase

Journal of Pediatric Urology. 2(4) (pp 290-293), 2006. Date of Publication: August 2006.

[Article]

AN: 44111774

Introduction: Ureteroscopic stone manipulation and extraction is the standard of care for distal stone disease in the adult population. Recently, with refinements in instrumentation, these standards have been applied in pediatrics. Here, we investigate the role of ureteral dilation and the need for postoperative stenting after ureteroscopy.

Material(s) and Method(s): Twenty-nine children (21 male, eight female) with a mean age of 11.0 (2.5-17.5) years underwent 34 ureterscopic procedures (21 right, 13 left) to address ureteral stones in 27 (23 distal, 3 mid and 1 proximal), surveillance of the upper tract in six and a retained stent in one. Active ureteral dilation was not required in any of these patients. A Wolfe 4.5-F or 6.5-F tapered semi-rigid ureteroscope was passed alongside a previously placed guidewire to access the upper collecting system. Proximal ureteral surveillance was performed after completion of the procedure; all but two patients had a diagnostic ureterogram. Four patients had preoperative placement of a JJ stent. Postoperative stents were placed in six patients, two had stents placed preoperatively for infection associated with either autonomic dysreflexia or stone impaction, two for extravasation or perforation, one for edema and one for subsequent ESWL.

Result(s): Mean follow up after ureteroscopy was 16.2 (0.3-48) months. Of the 27 procedures for stone disease, 15 (55%) stones required laser litholipaxy and 12 (45%) were managed with stone

basket extraction. The overall re-treatment rate for stone disease was 4%. Diagnostic ureteroscopy was normal in six procedures. None of the procedures managed without a post-ureteroscopy stent required subsequent intervention.

Conclusion(s): Ureteroscopy is a safe, effective method to manage ureteral stones. Refinements in instrumentation allow its application to the pediatric population. Ureteroscopy including laser lithotripsy can be performed without ureteral dilation or postoperative stenting. © 2006 Journal of Pediatric Urology Company.

Status

Embase

Institution

(Herndon, Viamonte, Joseph) Section of Pediatric Urology, Division of Urology, Department of Surgery, United States

Publisher

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Year of Publication

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887.

Virtual reality ureteroscopy simulator as a valid tool for assessing endourological skills.

Matsumoto E.D., Pace K.T., Honey R.J.D'A.

Embase

International Journal of Urology. 13(7) (pp 896-901), 2006. Date of Publication: July 2006.

[Article]

AN: 44049914

Aim: Virtual reality (VR) simulators are now commercially available for various surgical skills training. The Uro Mentor VR Ureteroscopy Simulator by Symbionix is one system that may

revolutionize the way we assess and teach surgical residents. Surgical educators may no longer have to depend on the operating room as the sole venue for teaching residents technical skills. We validated performance on this new system with previously developed assessment tools and compared it to performance on a high fidelity ureteroscopy bench model.

Method(s): Urology residents (n = 16) were assessed on their ability to perform cystoscopy, guidewire insertion, semirigid ureteroscopy and basket extraction of a distal ureteric stone on the VR simulator. A blinded examiner assessed subject performance using a checklist, global rating scale and a pass/fail rating. In addition, computer-generated parameters including time to complete task, scope and instrument trauma and the number of attempts to insert a guidewire were analysed. Performance on the VR simulator was compared to performance on a high fidelity ureteroscopy bench model.

Result(s): Senior residents (n = 8) scored significantly higher on their global rating scale (29.4 +/- 2.5 vs 20.8 +/- 0.9, P = 0.005), checklist (19.1 +/- 1.1 vs 15.2 +/- 0.9, P = 0.02), pass/fail rating (chi² = 7.3, P = 0.007) and required less time to complete the task (352.9 +/- 55.7 s vs 576.8 +/- 67.4 s., P = 0.02) than the junior residents (n = 8) on the VR simulator. Junior residents also had a significantly higher incidence of scope trauma (4 vs 0.6, P = 0.02). No significant differences were noted in instrument trauma and the number of attempts to insert the guidewire. Global rating scale performance on the VR simulator correlated well to performance on the high fidelity ureteroscopy bench model (r = 0.7, P = 0.002) as did time to complete task (r = 0.7, P = 0.004). Conclusion(s): The Uro Mentor VR Ureteroscopy Simulator is a useful tool in assessing resident endourological skills. Performance on the VR simulator is comparable to a validated high fidelity ureteroscopy bench model. Future studies will assess the utility of VR simulators in surgical skills training.

PMC Identifier

16882051 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=16882051>]

Status

Embase

Institution

(Matsumoto) Division of Urology, McMaster University, Hamilton, Ont., Canada (Pace, Honey)

Division of Urology, University of Toronto, Toronto, Ont., Canada

(Matsumoto) McMaster Institute of Urology, St. Joseph's Hospital, 50 Charlton Avenue, E., Hamilton, Ont. L8N 4A6, Canada

Publisher

Blackwell Publishing (550 Swanston Street, Carlton South VIC 3053, Australia)

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888.

Case report: The stone-basket nidus.

Schwartz S., Broder K., Jones M., Monga M.

Embase

Journal of Endourology. 20(6) (pp 386-387), 2006. Date of Publication: June 2006.

[Article]

AN: 44051110

A 55-year-old man presented with intermittent right-flank pain 6 months after ureteroscopic stone extraction with holmium laser lithotripsy. A distal-ureteral stone was removed that contained fragments of a stone basket. Diligent inspection of endourologic accessories is critical to ensuring no fragments are left in patients, especially when a laser has been used. © Mary Ann Liebert, Inc.

PMC Identifier

16808647 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=16808647>]

Status

Embase

Institution

(Monga) Dept. of Urologic Surgery, University of Minnesota, Mayo Mailcode 394, 420 Delaware St. S.E., Minneapolis, MN 55455, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

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889.

Simultaneous bilateral retrograde intrarenal surgery for stone disease in patients with significant comorbidities.

Chung S.Y., Chon C.H., Ng C.S., Fuchs G.J.

Embase

Journal of Endourology. 20(10) (pp 761-765), 2006. Date of Publication: October 2006.

[Article]

AN: 44736253

Background and Purpose: Advances in endoscopic equipment have allowed urologists to access stones in virtually any location in the upper tracts. Where clinically appropriate, this approach may represent the preferred treatment option, regardless of stone size. We report the first description of simultaneous bilateral retrograde intrarenal surgery (SB-RIRS) in patients with both significant upper-tract stone burdens and comorbidities such as morbid obesity or heart disease.

Patients and Methods: Between September 2003 and April 2004, three men and one woman with an average of 62 years underwent a total of seven sessions of SB-RIRS. All four patients were referred from other urologists after failing prior treatments, including shockwave lithotripsy (five sessions) and RIRS (two sessions). The average stone burden was 8.8 cm. The procedures were performed by two surgeons operating simultaneously using two sets of video/holmium laser equipment. Flexible (7.5F) ureteroscopes were used to fragment and basket stone debris without the use of ureteral access sheaths.

Result(s): Three patients underwent a scheduled second-stage procedure to ensure adequate stone clearance. The average total and SB-RIRS-specific operative times were 256 and 131 minutes for the initial procedure and 235 and 95 minutes for the second-stage procedure, respectively. No major complications were noted.

Conclusion(s): Simultaneous bilateral RIRS is an appropriate treatment option for stone patients with significant comorbidities. © Mary Ann Liebert, Inc.

PMC Identifier

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Status

Embase

Institution

(Chung, Chon, Ng, Fuchs) Minimally Invasive Urology Institute, Cedars Sinai Medical Center, Los Angeles, CA, United States (Chung) 600 East First Street, Spring Valley, IL 61350, United States

Publisher

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890.

Handling and Prevention of Complications in Stone Basketing.

de la Rosette J.J.M.C.H., Skrekas T., Segura J.W.

Embase

European Urology. 50(5) (pp 991-999), 2006. Date of Publication: November 2006.

[Review]

AN: 44486482

Objective: To review the incidence, risk factors, and treatment options of intraoperative and postoperative complications of stone basketing in urology with emphasis on certain principles that must be upheld to prevent those complications.

Method(s): A literature search was performed using the MEDLINE database on stone basketing between 1970 and 2005.

Result(s): Iatrogenic trauma due to retrieval of a stone is well known but the exact incidence is difficult to ascertain. Rarely, stone basketing can cause major trauma to the ureter, such as avulsion or intussusception, requiring open or laparoscopic intervention for ureteral continuity restoration. Mucosal abrasion, ureteral perforation, and stricture formation have also been

described as complications of stone basketing. Occasionally, the engaged or broken basket can provoke anxiety even for experienced urologists. Factors that increase the risk of complications, strategies for repair, and techniques for prevention are discussed extensively.

Conclusion(s): Infrequent, surgical misadventures during stone basketing can occur and must be treated appropriately. Careful attention to instrument selection and surgical techniques and awareness of risk factors and type and site of potential injury are essential to reduce these complications. © 2006 European Association of Urology.

PMC Identifier

16530928 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=16530928>]

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Embase

Institution

(de la Rosette, Skrekas) Department of Urology, Academic Medical Center, University of Amsterdam, Amsterdam, Netherlands (Segura) Department of Urology, Mayo Clinic, Rochester, NY, United States

Publisher

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Year of Publication

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891.

A new spin on the entrapped ureteral calculus.

Canales B.K., Ramani A., Monga M.

Embase

Journal of Endourology. 20(7) (pp 460-461), 2006. Date of Publication: July 2006.

[Article]

AN: 44182207

We describe ureteroscopic lithotripsy using a revolving 1.5F tipless basket. After passing a laser fiber along-side the basket and performing lithotripsy, one uses a rotary wheel at the base of the basket handle to spin the stone to a different area for further fragmentation. This allows complete stone fragmentation, in contrast to traditional laser baskets, which bore a hole through the center of the stone. Irrigation flow testing demonstrated significant advantages with the 1.5F basket with or without a laser fiber alongside the basket compared with traditional baskets. © Mary Ann Liebert, Inc.

PMC Identifier

16859454 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=16859454>]

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Institution

(Canales, Ramani, Monga) Department of Urologic Surgery, University of Minnesota, Minneapolis, MN, United States

Publisher

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Year of Publication

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892.

Endoscopic management of 10 separate fibroepithelial polyps arising in a single ureter.

Carey R.I., Bird V.G.

Embase

Urology. 67(2) (pp 413-415), 2006. Date of Publication: February 2006.

[Article]

AN: 43189870

Introduction. Fibroepithelial polyps of the ureter, usually of congenital or inflammatory origin, are rare entities. These polyps are often solitary, but cases of multiple polyps have also been reported. Treatment of these entities has evolved with emerging surgical techniques and technologies. **Surgical Technique.** We describe our surgical technique for minimally invasive treatment of multiple polyps arising in a single ureter. The base of each polyp is ablated with a 365- μ m holmium laser fiber operating at 10 W, and each polyp is removed from the ureteral wall with 3F grasping forceps. Hemostasis is achieved with laser coagulation. Ureteral stones are removed concurrently with a 2.4F basket. A 12/14F ureteral access sheath is used to facilitate the multiple passes of the ureteroscope and the removal of the polyps and stones from the proximal ureter. All 10 polyps were removed from the proximal portion of a single ureter. The ureteral stent was removed at 6 weeks, and follow-up intravenous urography at 6 months and ureteroscopy at 11 months showed no residual polyps or stones. The wall of the ureter was well healed, with no evidence of stricture. **Conclusions.** We have demonstrated a specific minimally invasive technique that can be used to treat even highly complex cases involving upper urinary tract fibroepithelial polyps. © 2006 Elsevier Inc.

PMC Identifier

16461100 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=16461100>]

Status

Embase

Institution

(Carey, Bird) Department of Urology, University of Miami, School of Medicine, Miami, FL, United States (Bird) Department of Urology, University of Miami, School of Medicine, P.O. Box 016960 (M814), Miami, FL 33101, United States

Publisher

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893.

Size does matter: 1.5 Fr. stone baskets almost double irrigation flow during flexible ureteroscopy compared to 1.9 Fr. stone baskets.

Nagele U., Horstmann M., Hennenlotter J., Walcher U., Kuczyk M.A., Sievert K.-D., Stenzl A., Anastasiadis A.G.

Embase

Urological Research. 34(6) (pp 389-392), 2006. Date of Publication: December 2006.

[Article]

AN: 44837172

With a new generation of flexible ureterorenoscopes, a new area in stone management is emerging. Limitation of vision with these new instruments is often caused by insufficient irrigation flow, especially when using instruments like stone baskets, resulting from partial obstruction of the working and irrigation channel with these instruments. Empirically, new available smaller stone baskets seem to dramatically improve irrigation and therefore vision in clinical use. The goal of this study was to show objective differences in basket diameters and flow rates in an in vitro setting. Diameters and irrigation flows in flexible ureterorenoscopes depending on different sizes of stone baskets (Fr. 1.5-1.7-1.9-2.2-2.4-3.0) and different deflections were measured. The measured diameter of the baskets varied within the first 20 cm and the true measured size varied from the manufacturer's specified size to a different extent. The new generation of 1.5 and 1.7 Fr. baskets improved irrigation flow, even compared to the smallest commonly used baskets, up to 68%. Interestingly, deflection did not influence irrigation flow. This study confirmed the subjective impression of inadequate description of relevant basket diameters as well as that of a significant improvement of irrigation flow with the newest generation of stone baskets with smaller diameters. © 2006 Springer-Verlag.

PMC Identifier

17082921 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=17082921>]

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Embase

Institution

(Nagele, Horstmann, Hennenlotter, Walcher, Kuczyk, Sievert, Stenzl, Anastasiadis) Department of Urology, University of Tuebingen, Hoppe-Seyler-Str. 3, Tuebingen 72076, Germany

Publisher

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Year of Publication

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894.

Efficacy of the stone cone for treatment of proximal ureteral stones: An initial clinical experience.

Chung H.S., Park J.Y., Kim H.K., Park C.M.

Embase

Korean Journal of Urology. 47(4) (pp 412-417), 2006. Date of Publication: April 2006.

[Article]

AN: 43984673

Purpose: Due to the recent trend of performing ureteroscopic removal of stone (URS) for treating upper ureter stones, stone migration into renal pelvis and calices has increased the morbidity and the need for auxillary procedures. The Stone Cone is a device that prevents stone migration during URS. We report here our -initial experience of using the Stone Cone during the treatment of upper ureteral stones.

Material(s) and Method(s): From February 2005 till May 2005, we treated fifteen consecutive patients who were suffering with upper ureteral stones by using the Stone Cone and performing semi-rigid ureteroscopy and pneumatic lithoclast. Pneumatic lithotripsy was done in 11 patients and the remaining 4 cases were treated by using a stone basket and forceps.

Result(s): The Stone Cone was successfully placed in all 15 cases. In 13 patients, it was placed via cystoscopy under fluroscopic guidance, while 2 patients with 2 impacted stones required ureteroscopic placement. No patients had residual fragments greater than 3mm and they didn't require auxiliary procedures.

Conclusion(s): The Stone Cone is a new device that prevents stone migration and allows safe extraction of fragments during URS. This study shows that the success rate of URS for proximal ureteral stones was 100% with using the Stone Cone.

Status

Embase

Institution

(Chung, Park, Kim, Park) Department of Urology, Gangneung Asan Hospital, Ulsan University, Gangnung, South Korea

Publisher

Korean Urological Association (Room 419, 4F, Jungmyung Honeyville Plaza # 965, Kangnam-gu, Seoul 135-270, South Korea)

Year of Publication

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895.

Retrograde intrarenal stone surgery for extracorporeal shock-wave lithotripsy-resistant kidney stones.

Jung H., Norby B., Osther P.J.

Embase

Scandinavian Journal of Urology and Nephrology. 40(5) (pp 380-384), 2006. Date of Publication: 01 Nov 2006.

[Article]

AN: 44627523

Objective. The newer flexible ureteroscopes, 150-200-mum holmium YAG laser fibres and superflexible Dormia baskets have made it possible to reach and treat stones in all parts of the kidney. The object of this evaluation was to study the outcome of retrograde intrarenal stone surgery (RIRS) for extracorporeal shock-wave lithotripsy (ESWL)-resistant kidney stones.

Material and methods. A total of 38 consecutive patients (18 males, 20 females) participated in the study. All patients had undergone ESWL prior to RIRS without success. In all cases the stones could be reached with the endoscope. Calculi ranged in size from 3 to 20 mm (mean 9

mm). In 32 cases the stones were fragmented using a holmium YAG laser and in six the stones could be extracted using zero-tip Dormia baskets without fragmentation. Sixteen patients had lower calyceal calculi and eight had an abnormal anatomy of the upper urinary tract. Intravenous pyelography was performed 6-8 weeks after the treatment. Results. In all cases the stones could be reached and fragmented to some extent. After a single RIRS procedure, 22/38 patients (58%) were completely stone-free at follow-up, and four (11%) had residual fragments ≤ 4 mm in size that were expected to pass spontaneously. Of the remaining 12 patients, who initially had larger stones (mean 11.3 mm), the residual fragments ranged in size from 5 to 15 mm. Three patients underwent an additional RIRS procedure, after which they were all completely stone-free, resulting in an overall success rate of 76%. There were no major complications. Conclusions. RIRS is a safe procedure with a high success rate and a low complication rate for ESWL-resistant renal stones. Patients with larger stones (>10 mm), those with stones in the lower pole and those with an abnormal renal anatomy may require more than one procedure. © 2006 Taylor & Francis.

PMC Identifier

17060084 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=17060084>]

Status

Embase

Institution

(Jung, Norby, Osther) Department of Urology, Fredericia and Kolding Hospitals, Fredericia, Denmark (Jung) Department of Urology, Fredericia and Kolding Hospitals, Dronningensgade 97, DK-7000 Fredericia, Denmark

Publisher

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Year of Publication

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Treatment of impacted lower third ureteral stones with the use of the ureteral access sheath.

Pardalidis N.P., Papatsoris A.G., Kapotis C.G., Kosmaoglou E.V.

Embase

Urological Research. 34(3) (pp 211-214), 2006. Date of Publication: June 2006.

[Article]

AN: 43752347

We present our experience with the use of the ureteral access sheath for the management of small impacted lower third ureteral stones, in comparison with more standard techniques. Ninety-eight consecutive patients, aged 18-73 years (mean 48.5), with small (diameter $\leq$ 10 mm) impacted lower third ureteral stones (< 5 mm in 56, and 5-10 mm in 42 patients) were randomly managed with either a 12/14F coaxial ureteral dilator/sheath and a 7.5F flexible ureteroscope (group A; 48 patients), or with balloon dilatation and the 7.5F flexible ureteroscope (group B; 50 patients). In both groups, stones were grasped and extracted with a basket, and when necessary they were disintegrated with a 1.9F electrohydraulic lithotripsy (EHL) probe. Postoperatively, excretory urography was performed at 1 month and patients were followed-up for 1 year. The mean operative time was 45.5 min in group A, and 58.5 min in group B ($P < 0.05$). EHL was performed in 16 (33.3%) patients of group A, and in 12 (24%) patients of group B. In group B, balloon dilatation was performed in 28 (56%) patients. Ureteral perforation was revealed in 4 (8%) patients of group B. The follow-up imaging tests showed stone-free status in 46 (95.8%) patients of group A and in all (100%) patients of group B. No long-term complications were recorded. Endoscopic management of small impacted lower third ureteral stones with the ureteral access sheath is a quicker and safer procedure, in comparison with the more standard approach, bearing comparable efficacy. © Springer-Verlag 2006.

PMC Identifier

16477425 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=16477425>]

Status

Embase

Institution

(Pardalidis, Papatsoris, Kapotis, Kosmaoglou) Department of Urology, Hellenic Airforce and V. A. General Hospital, Athens, Greece

Publisher

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897.

Ureteroscopic Laser Lithotripsy for Upper Urinary Tract Calculi With Active Fragment Extraction and Computerized Tomography Followup.

Portis A.J., Rygwall R., Holtz C., Pshon N., Laliberte M.

Embase

Journal of Urology. 175(6) (pp 2129-2134), 2006. Date of Publication: June 2006.

[Article]

AN: 43668530

Purpose: Management of fragments generated by ureteroscopic laser lithotripsy remains controversial. In this study we explored the impact of active fragment extraction after ureteroscopic laser lithotripsy on stone clearance.

Material(s) and Method(s): A total of 69 patients with 3 or less upper urinary tract calculi (5 to 15 mm) demonstrated on preoperative CT were prospectively evaluated. Stones were translocated to a dependent upper pole calix where laser lithotripsy was performed. An attempt was made to clear all fragments using tipless stone baskets. One month after surgery stone clearance was evaluated exclusively with noncontrast spiral CT.

Result(s): In 58 patients undergoing surgery on protocol, average stone burden was 9.4 +/- 3.4 mm and was significantly smaller in 44 patients with stones in a solitary location (8.5 +/- 2.9 mm) than in 14 patients with stones in multiple locations (12.3 +/- 3.2 mm, $p < 0.001$). Primary stone location was categorized as renal nonlower pole (in 16), renal lower pole (in 19) and proximal ureter (in 23). Average operative time (43.7 +/- 18.4 minutes) was unaffected by stone location or multiplicity after controlling for stone size ($p > 0.05$). Stone clearance rates were not affected by stone location or multiplicity, with overall success rates of 54%, 84% and 95% at fragment thresholds of 0, 2 and 4 mm, respectively ($p > 0.05$).

Conclusion(s): Ureteroscopic laser lithotripsy with active fragment extraction was time efficient and highly effective. Sensitive postoperative imaging reveals the challenge of achieving a true

stone-free state. We were unable to demonstrate an impact of stone location on stone-free rates.

© 2006 American Urological Association.

PMC Identifier

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Status

Embase

Institution

(Portis, Rygwall, Holtz) Metropolitan Urologic Specialists, PA, United States (Portis, Pshon, Laliberte) HealthEast Kidney Stone Institute, St. Joseph's Hospital, St. Paul, MN, United States

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Year of Publication

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898.

Treatment Strategies of Ureteral Stones.

Papadoukakis S., Stolzenburg J.-U., Truss M.C.

Embase

EAU-EBU Update Series. 4(5) (pp 184-190), 2006. Date of Publication: October 2006.

[Review]

AN: 44317699

Urinary stone disease is a major health care problem due to its high prevalence and incidence. There are different therapeutic approaches for ureteral stones depending on stone size, location and anatomical variations of the urogenital tract. Watchful waiting with concomitant medication (i.e., analgetics, anti-inflammatory agents, alpha-blockers) is considered an option for smaller stones (<6 mm) that have a high probability for spontaneous passage. Extracorporeal shock

wave lithotripsy is a minimally invasive therapeutic approach which has been widely used through the past 20 years. It is a standardized procedure which results in stone free rates between 59% and 100% depending on the size and the location of the stone as well as the type of the lithotripter. However, more than one session are frequently needed and ureteral stenting is still a matter of debate. Ureteroscopy results in stone free rates of almost 95% in a single session. Stone removal may be achieved with forceps and baskets and with or without intraureteral stone disintegration with various lithotripsy devices. Treatment approaches should be individualized in order to achieve optimum outcomes. © 2006 European Association of Urology and European Board of Urology.

Status

Embase

Institution

(Papadoukakis, Truss) Department of Urology, Klinikum Dortmund, Dortmund, Germany

(Stolzenburg) Department of Urology, University of Leipzig, Leipzig, Germany

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Year of Publication

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899.

Management of lower pole renal calculi: Shock wave lithotripsy versus percutaneous nephrolithotomy versus flexible ureteroscopy.

Preminger G.M.

Embase

Urological Research. 34(2) (pp 108-111), 2006. Date of Publication: April 2006.

[Conference Paper]

AN: 43461073

Current ureteroscopic intracorporeal lithotripsy devices and stone retrieval technology allow for the treatment of calculi located throughout the intrarenal collecting system. Difficulty accessing lower pole calculi, especially when the holmium laser fiber is utilized, is often encountered. Herein we review our experience where lower pole renal calculi were ureteroscopically managed by holmium laser fragmentation, either in situ, or by first displacing the stone into a less dependent position with the aid of a nitinol stone retrieval device. Lower pole stones less than 20 mm can be primarily treated by ureteroscopic means in patients: that are obese; have a bleeding diathesis; with stones resistant to shockwave lithotripsy (SWL); with complicated intra-renal anatomy; or as a salvage procedure after failed SWL. Lower pole calculi are fragmented with a 200 mum holmium laser fiber via a 7.5 F flexible ureteroscope. For those patients where the laser fiber reduced ureteroscopic deflection, precluding re-entry into the lower pole calyx, a 1.9 F nitinol basket is used to displace the lower pole calculus into a more favorable position, thus allowing for easier fragmentation. A nitinol device passed into the lower pole, through the ureteroscope, for stone displacement cause only a minimal loss of deflection and no significant impact on irrigation. Eighty-five percent of patients were stone free by IVP or CT scan performed at 3 months. Ureteroscopic management of lower pole calculi is a reasonable alternative to SWL or percutaneous nephrolithotomy (PNL) in patients with low volume stone disease. If the stone cannot be fragmented in situ, nitinol basket or grasper retrieval, through a fully deflected ureteroscope, allows for repositioning of the stone into a less dependant position, thus facilitating stone fragmentation. © Springer-Verlag 2006.

PMC Identifier

16463145 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=16463145>]

Status

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Institution

(Preminger) Comprehensive Kidney Stone Center, Department of Surgery, Duke University Medical Center, Durham, NC, United States

Publisher

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900.

Prevention of retrograde calculus migration with the Stone Cone.

Pardalidis N.P., Papatsoris A.G., Kosmaoglou E.V.

Embase

Urological Research. 33(1) (pp 61-64), 2005. Date of Publication: February 2005.

[Article]

AN: 40487195

Retrograde calculus migration during ureteroscopic lithotripsy remains a problem in 5-40% of cases. We assessed the safety and efficacy of the Stone Cone device, in comparison with the standard flat wire basket. A total of 56 consecutive patients with ureteral calculi, suitable for ureteroscopic extraction and/or lithotripsy, were included in this prospective study. Patients were randomly allocated into two groups. In group A (30 patients), we used the Stone Cone, while in group B (26 patients) we used the standard flat wire basket. The Stone Cone was placed through a cystoscope under fluoroscopic guidance, or when necessary under direct ureteroscopic control. Whenever necessary, intracorporeal electrohydraulic lithotripsy took place in both groups.

Statistical significance was assessed by the paired t-test. The mean operative time was 48.5 min in group A, and 42.4 min in group B. Intact calculus extraction was possible in 16.6% in group A, and in 7.6% in group B ($P < 0.01$). Retrograde stone migration was revealed in 23% in group B only ($P < 0.001$). Also, residual fragments > 3 mm were recorded in 30.7% in group B only ($P < 0.001$). None of the patients in group A required auxiliary procedures, in contrary to 23% in group B ($P < 0.001$). No major complications were recorded in group A, while in group B a case of major ureteral mucosal abrasion was recorded. The Stone Cone is safe and efficient in preventing retrograde stone migration and in minimizing residual fragments during ureteroscopic lithotripsy in comparison with the flat wire basket. © Springer-Verlag 2004.

PMC Identifier

15625610 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=15625610>]

Status

Embase

Institution

(Pardalidis, Papatsoris, Kosmaoglou) Department of Urology, Hellenic Airforce Vet. Aff. Gen. H., Athens, Greece (Pardalidis) 6 Platonos Street, Halandri, 15234, Athens, Greece

Publisher

Springer Verlag (Tiergartenstrasse 17, Heidelberg D-69121, Germany)

Year of Publication

2005

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901.

Ureteroscopic management of renal calculi in anomalous kidneys.

Weizer A.Z., Springhart W.P., Ekeruo W.O., Matlaga B.R., Tan Y.H., Assimos D.G., Preminger G.M.

Embase

Urology. 65(2) (pp 265-269), 2005. Date of Publication: February 2005.

[Review]

AN: 40248010

Objectives. To review our experience with ureteroscopy in treating patients with renal calculi in anomalous kidneys and to evaluate the efficacy of this approach. Methods. Eight patients with renal calculi in anomalous kidneys who were managed by ureteroscopic procedures were identified. Demographic information, preoperative stone burden, operative information (ureteroscope size, lithotrite used, instruments used, duration of surgery, complications, stenting), follow-up imaging, and complications were obtained from the medical record. This information was analyzed to determine the most frequently used instruments and stone-free rates. Results. Our cohort consisted of 4 patients with horseshoe kidneys (HSK) and 4 patients with pelvic kidneys (PK) (6 male, 2 female, mean age, 50.6 years). The average preoperative stone burden of the 11 treated calculi was 1.4 cm, with 5 stones located in the renal pelvis, 2 in the upper pole, and 4 in lower pole calyces. A 7.5F flexible ureteroscope, holmium laser lithotripsy, and nitinol

baskets and graspers were used in all patients. Six patients had complete clearance of the stone on postoperative imaging (75% HSK, 75% PK), with 88% of patients asymptomatic after their procedure. No patients required additional surgical intervention. Conclusions. Flexible ureteroscopy with holmium laser lithotripsy and the use of nitinol baskets and graspers provides a reasonable alternative to shock wave lithotripsy in the management of patients harboring renal calculi in anomalous kidneys. In addition, ureteroscopy can be considered a primary option for managing select patients with symptomatic stones in PKs before a percutaneous surgical approach. © 2005 Elsevier Inc.

PMC Identifier

15708035 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=15708035>]

Status

Embase

Institution

(Preminger) Duke University Medical Center, Division of Urology, DUMC Box 3167, White Zone, Durham, NC 27710, United States

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Year of Publication

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902.

Ureteroscopy for pediatric urolithiasis: An evolving first-line therapy.

Tan A.H.H., Al-Omar M., Denstedt J.D., Razvi H.

Embase

Urology. 65(1) (pp 153-156), 2005. Date of Publication: January 2005.

[Review]

AN: 40169623

To present in a retrospective report a contemporary series of patients aged 14 years and younger who were treated for stones with ureteroscopy at our institution from 1991 to 2002. With the improvement and miniaturization of ureteroscopes and ancillary instruments, the endoscopic treatment of renal and ureteral calculi in children has become more feasible. A retrospective chart review was performed of 23 patients aged 14 years and younger who had undergone ureteroscopy for the treatment of ureteral or renal calculi at our institution. A total of 27 stones were treated in 23 patients. Of the 27 stones, 18 were in the distal ureter, 5 in the mid ureter, 2 in the proximal ureter, and 2 in the renal pelvis. Ureteral dilation was performed in 4 (17.4%) of the 23 patients. The lithotripsy modalities used were holmium:yttrium-aluminum-garnet laser in 16 (69.6%), electrohydraulic lithotripsy in 3 (13%), a combination of holmium laser and electrohydraulic lithotripsy in 2 (8.7%), and basket extraction alone in 2 (8.7%) of 23 patients. Ureteral stents were placed in 21 (91.3%) of 23 patients. The average operative time was 46.9 minutes (range 15 to 92). In 21 (91.3%) of 23 patients, postoperative imaging was available and revealed that 20 (95.2%) of the 21 patients were rendered stone free. Two patients were lost to follow-up. No intraoperative complications occurred. One patient was treated postoperatively with intravenous antibiotics for transient fever. Ureteroscopy is safe and effective in the management of ureteral and renal calculi in children. In our institution, it has emerged as a valid first-line therapy for the treatment of pediatric urolithiasis. © 2005 Elsevier Inc.

PMC Identifier

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Status

Embase

Institution

(Tan, Al-Omar, Denstedt, Razvi) Division of Urology, Department of Surgery, University of Western Ontario, London, Ont., Canada (Razvi) Division of Urology, St. Joseph's Health Care, 268 Grosvenor Street, London, Ont. N6A 4V2, Canada

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Year of Publication

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903.

Effect of ureteral access sheath on stone-free rates in patients undergoing ureteroscopic management of renal calculi.

L'Esperance J.O., Ekeruo W.O., Scales Jr. C.D., Marguet C.G., Springhart W.P., Maloney M.E., Albala D.M., Preminger G.M.

Embase

Urology. 66(2) (pp 252-255), 2005. Date of Publication: August 2005.

[Article]

AN: 41138075

Objectives. To evaluate the effect of ureteral access sheaths (UASs) on stone-free rates (SFRs) during ureteroscopic treatment of renal calculi. Several advantages of UASs during flexible ureteroscopy have been documented. However, no study has evaluated their impact on SFRs.

Methods. We retrospectively reviewed all ureteroscopic cases for the management of renal stones performed at our Stone Center. Data were stratified according to the use or lack of use of the UAS. The groups were stratified by stone location within the kidney. Stone-free status was determined at 2 months postoperatively by either intravenous urography with tomograms or noncontrast renal computed tomography in patients with contrast allergies. **Results.** A total of 256 ureteroscopic procedures for the removal of renal calculi were performed between 1997 and 2003 (173 with UAS and 83 without). The groups were similar in age, sex, and stone burden. Stents were placed in nearly 80% of patients. The lower renal pole represented the most common presenting location. Stone displacement with a ureteroscopic basket for efficient fragmentation was necessary in 34%. The overall SFR in the UAS group and non-UAS group was 79% and 67%, respectively ($P = 0.042$). The SFRs were improved for calculi in all portions of the kidney.

Conclusions. In addition to facilitating ureteroscopic access, reducing costs, and lowering intrarenal pressures, the results of the current study suggest that UASs improve SFRs during the management of renal calculi. It is now our current practice to use the UAS routinely during ureteroscopic treatment of renal and upper ureteral calculi. © 2005 Elsevier Inc.

PMC Identifier

16040093 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=16040093>]

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Embase

Institution

(L'Esperance, Ekeruo, Scales Jr., Marguet, Springhart, Maloney, Albala, Preminger)
Comprehensive Kidney Stone Center, Department of Surgery, Duke University Medical Center,
Durham, NC, United States (Preminger) Division of Urology, Department of Surgery, Duke
University Medical Center, White Zone, Durham, NC 27710, United States

Publisher

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904.

A comparison of holmium:YAG laser with Lithoclast lithotripsy in ureteral calculi fragmentation.

Jeon S.S., Hyun J.-H., Lee K.-S.

Embase

International Journal of Urology. 12(6) (pp 544-547), 2005. Date of Publication: June 2005.

[Article]

AN: 41097830

Purpose: Among various intracorporeal lithotriptors, Lithoclast (EMS, Switzerland) has become the widely used tool for the treatment of urinary stones. Recently, the holmium:YAG laser has been used with a wide range of potential urological applications, including intracorporeal lithotripsy of urinary calculi. The purpose of the present study is to compare Lithoclast with holmium:YAG laser lithotripsy in ureteral calculi fragmentation.

Method(s): Out of 51 patients with ureteral calculi, 26 underwent Lithoclast lithotripsy and 25 holmium:YAG lithotripsy using a 8/9.8F rigid ureteroscope. There were no changes to the ureteroscopes, video monitors, baskets or irrigation devices during the study period.

Result(s): There were no differences in patient age, sex, stone size and location of stones between these groups. The immediate stone-free rates were 96.0% in the holmium:YAG group and 73.1% in the Lithoclast group ($P < 0.05$). The 3-month stone-free rates were 96.0% and 84.6%, respectively ($P = 0.350$). The mean operation time and mean period of postoperative hospitalization in the holmium:YAG group (49.8 min and 1.0 days, respectively) were shorter than those of the Lithoclast counterpart (76.9 min and 2.5 days, respectively). Post-treatment complications, such as ureteral perforation, were encountered in only two patients who underwent Lithoclast.

Conclusion(s): Holmium:YAG lithotripsy was associated with shorter operation time and postoperative hospitalization period. These data also suggest that holmium:YAG lithotripsy was safe and more effective than Lithoclast lithotripsy in the aspect of immediate stone free rate. We believe that holmium:YAG laser is an excellent treatment modality for managing ureteral calculi.

PMC Identifier

15985075 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=15985075>]

Status

Embase

Institution

(Jeon, Hyun, Lee) Department of Urology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, South Korea (Lee) Department of Urology, Samsung Medical Center, 50 Ilwon-Dong, Kangnam-Ku, Seoul 135-710, South Korea

Publisher

Blackwell Publishing (550 Swanston Street, Carlton South VIC 3053, Australia)

Year of Publication

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Ureteroscopy in the management of pediatric urinary tract calculi.

Raza A., Smith G., Moussa S., Tolley D.

Embase

Journal of Endourology. 19(2) (pp 151-158), 2005. Date of Publication: March 2005.

[Review]

AN: 40490454

Purpose: To report our experience with ureteroscopy in the treatment of pediatric urinary tract calculi and present a review of the literature.

Patients and Methods: Between 1988 and 2003, 52 ureteroscopic procedures were performed in 25 male and 10 female children aged 11 months to 15 years (mean 5.9 years). Using a semirigid 6.8F 43-cm ureteroscope and routine antibiotic prophylaxis, stones were fragmented with a pulsed-dye laser (N = 14; stone size 6-15 mm with a mean of 9.6 mm), electrohydraulic lithotripsy (EHL) (N = 26; stone size 3-20 mm with a mean of 8.4 mm), or a holmium laser (N = 7; stone size 5-15 mm with a mean of 10 mm); removed by basket extraction (N = 5; stone size 5-8 mm with a mean of 7 mm); or both. Stenting or ureteral dilatation was not performed routinely.

Result(s): With the pulsed-dye laser, there was an overall stone-free rate of 72%. Complications consisted of one ureteral perforation and one stenosis of the intramural portion of a megaureter (14% complication rate). With EHL, the overall stone-free rate was 92%. Complications consisted of one case each of ureteral perforation and incipient urinary retention and five of mild fever (27%). With the holmium laser, the overall stone-free rate was 100%, and there were no complications. Basketing likewise produced a 100% stone-free rate, and there was one complication, a mucosal tear in a patient who also underwent pulsed-dye laser lithotripsy.

Conclusion(s): Ureteroscopy is a safe and effective means of treating the majority of pediatric ureteral calculi, although retreatment rates are higher with multiple stones and in younger children. Dilatation of the vesicoureteral junction is usually not necessary with ureteroscopes <8F, nor is ureteral drainage required after uncomplicated ureteroscopy. The holmium laser is the most effective and safest method of fragmentation regardless of stone composition. Ureteroscopy for this indication should be performed only by an experienced endoscopist. © Mary Ann Liebert, Inc.

PMC Identifier

15798409 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=15798409>]

Status

Embase

Institution

(Raza, Smith, Moussa, Tolley) Scottish Lithotripter Centre, Western General Hospital, Edinburgh, United Kingdom (Raza) Scottish Lithotripter Centre, Western General Hospital, Crewe Road, Edinburgh, EH 4 2XU, United Kingdom

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

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906.

Impact of heads-up display imaging on endoscopic task performance.

Ryndin I., Lukasewycz S., Hoffman N., Nakib N.A., Best S., Monga M.

Embase

Journal of Endourology. 19(8) (pp 964-967), 2005. Date of Publication: October 2005.

[Article]

AN: 41619154

Background and Purpose: Heads-Up Imaging goggles provide ergonomic advantages to the endourologist. This study was designed to evaluate whether heads-up display impacts task performance for ureteroscopic stone retrieval.

Material(s) and Method(s): The ability to capture a 5-mm calculus with a Cook N-Circle 2.2F stone basket from an inanimate caliceal model was tested by three experienced and three novice stone-basket operators. Visual display for initial testing for each operator was randomized to the OptiVu HD3 Heads-Up goggles or a 20-inch Sony Triniton monitor (TV). Subsequent testing alternated between the two devices. Camera input was provided by the Storz telecam SL-NTSC. The HD3 was set up to align the direction of view with the operator's hands, while the TV was aligned at an angle 45degree lateral and 30degree superior to the operator's direction of view to approximate the traditional room set-up for an endourologic procedure. Each operator performed live basketing trials with each display set-up.

Result(s): Expert operators retrieved calculi more rapidly (9.2 +/- 5.9 seconds) than novice operators (50.7 +/- 48.9 seconds), irrespective of whether a TV monitor or goggle display was utilized as the imaging modality. No significant differences were noted in task performance

between the two imaging modalities for the expert (P = 0.60), novice (P = 0.77), or overall (P = 0.91) groups.

Conclusion(s): The Optiview Heads-Up goggle display system does not offer advantages in task performance with specific regard to the ability to capture stone fragments with baskets. © Mary

Ann Liebert, Inc.

PMC Identifier

16253059 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=16253059>]

Status

Embase

Institution

(Ryndin, Lukasewycz, Hoffman, Nakib, Best, Monga) Department of Urologic Surgery, University of Minnesota, VAHCS Minneapolis, Minneapolis, MN, United States (Monga) Dept. of Urologic Surgery, University of Minnesota, MMC 394, 1420 Delaware St. SE, Minneapolis, MN 55455, United States

Publisher

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Year of Publication

2005

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907.

Use of stone cone™ device in ureteroscopic management of proximal ureter stones. Ureter üst uc taslarinin ureteroskopik tedavisinde stone cone™ kullanimi <Ureter üst uc taslarinin ureteroskopik tedavisinde stone cone™ kullanimi.>

Atug F., Akay A.F., Alar S., Yamis S., Bircan M.K.

Embase

Turk Uroloji Dergisi. 31(2) (pp 236-239), 2005. Date of Publication: 2005.

[Article]

AN: 41051575

Introduction: Ureteroscopy is a very common modality used to treat ureteral calculi. Retrograde stone migration during ureteroscopic lithotripsy might be seen in 40-50% of proximal ureteral stones. Stones are pushed often completely back to the kidney or stone fragments might migrate. This migration increases morbidity and the need for additional procedures. Various different equipments and techniques have been developed for preventing stone migration. LithocatchTM, LithovacTM and ParachuteTM are some of these devices. Nevertheless these devices are only 12 Fr in largest diameter which may be too small for dilated ureters and they fill up the most of the space of the ureteroscope working channel. The stone coneTM is a device that goals to prevent proximal calculus migration and allow safe extraction of small calculi during ureteroscopy. The stone coneTM catheter may be used to for these aims during ureteroscopic lithotripsy. In this study, we assessed the clinical use and efficacy of the stone coneTM device in the treatment of proximal ureter stones.

Material(s) and Method(s): Between 2003 and 2004, we used the stone coneTM in 22 patients with proximal ureteral calculi undergoing ureteroscopic lithotripsy. The mean age of patients was 33.6 $\pm$ 0.6 years (19 to 59) and mean stone diameter was 9.6 $\pm$ 1.4 mm (8-21 mm). Stones were on right side in 13 patients and on left side in 9 patients. Preoperative examinations included plain x-ray film of the kidneys, ureters and bladder, excretory urography and urine culture. All procedures were performed under general anesthesia and all patients were operated on standard lithotomy position. Ureteroscopy was performed with 8.5 Fr semirigid ureteroscope. Pneumatic lithotripter was used for lithotripsy in all cases. Stone coneTM was introduced through the cystoscope under fluoroscopic control. Stone coneTM was required placement under direct ureteroscopic control in patients with impacted stones.

Result(s): Stone coneTM was placed successfully in 22 patients. In 14 patients, it was placed via cystoscopy under fluoroscopic guidance, while 8 patients with impacted stones required ureteroscopic placement. Mean operation time was 55 $\pm$ 16 minutes (35-80 min). Intracorporeal pneumatic lithotripsy was used in all patients. All stones were fragmented successfully with pneumatic lithotripter. Ureteral stent was placed to all patients with impacted ureteral stones. Stone fragments, which were entrapped in the ureter by the stone coneTM, were extracted safely with common stone baskets. Stone migration was seen in only 1 (4.5%) patient, in which a 3 mm stone fragment migrated to the kidney. No major complication was associated with the use of stone coneTM.

Conclusion(s): In this study, stone coneTM catheter was used in 22 patients with proximal ureteral stone and the efficacy plus the safety of this catheter was evaluated. In our experience, stone coneTM is an effective and useful device that prevents proximal ureteral stone migration and allows safe extraction of fragments during ureteroscopic lithotripsy. We think that failure in

trapping fragments smaller than 3 mm, is the main disadvantage of this device. The stone cone™ appears to be a useful addition to the urological armamentarium.

Status

Embase

Institution

(Atug, Akay, Alar, Yamis, Bircan) Dicle Universitesi, Tip Fakultesi, Uroloji Anabilim Dalı, Diyarbakir, Turkey

Publisher

Aves Yayincilik (Kizilelma CAD. 5/3, Findikzade- Istanbul 34096, Turkey)

Year of Publication

2005

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908.

Complications of pneumatic ureterolithotripsy in the early postoperative period.

Aridogan I.A., Zeren S., Bayazit Y., Soyupak B., Doran S.

Embase

Journal of Endourology. 19(1) (pp 50-53), 2005. Date of Publication: January/February 2005.

[Article]

AN: 40365744

Purpose: To document the perioperative and early postoperative complications of pneumatic ureterolithotripsy.

Patients and Methods: Between January 1997 and December 2003, pneumatic ureterolithotripsy was performed in 665 male and 314 female patients for stones >0.5 cm. The age range was 9 months to 72 years (mean 41 years). Preoperatively, intravenous urography, urinalysis, and urine culture were done. Cefepime 1 g was given as prophylactic antimicrobial therapy 1 hour prior to surgery. A plain film of the urinary tract was taken immediately before the procedure. The

operations were carried out with the patient under general anesthesia. Rigid ureteroscopes (6.9F ACMI "micro-6" or 8F-10F Storz) and the Vibrolith (Elmed, Ankara, Turkey) pneumatic lithotripter were used. The fragments were extracted with forceps or baskets. Urinalysis and culture as a routine postoperative evaluation and a plain film or ultrasonogram of the urinary tract when needed were done 1 week after the procedure.

Result(s): The stones were completely removed in 847 patients (86.5%); 783 (80%) of them went home on the day of surgery. A ureteral stent was needed in 401 patients (41.0%). Perioperative complications were migration of the stone into the kidney in 70 patients (7.2%), mucosal damage in 34 (3.5%), ureteral perforation in 17 (1.7%), ureteral avulsion in 4 (0.4%), and conversion to open surgery in 3 (0.2%). During the early post-operative period, flank pain (18.4%), pelvic discomfort (5.5%), macroscopic hematuria (7.3%), and urinary tract infection (5%) were recorded.

Conclusion(s): Ureterolithotripsy by a pneumatic lithotripter is a minimally invasive, highly tolerable procedure with a low complication rate and short hospital stay when performed meticulously with appropriate instruments. © Mary Ann Liebert, Inc.

PMC Identifier

15735383 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=15735383>]

Status

Embase

Institution

(Aridogan, Zeren, Bayazit, Soyupak, Doran) Department of Urology, Faculty of Medicine, University of Cukurova, Adana, Turkey (Aridogan) Dept. of Urology, Faculty of Medicine, University of Cukurova, 01330 Adana, Turkey

Publisher

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Year of Publication

2005

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909.

Ureteral avulsion as a complication of ureteroscopy.

Alapont J.M., Broseta E., Oliver F., Pontones J.L., Boronat F., Jimenez-Cruz J.F.

Embase

International Braz J Urol. 29(1) (pp 18-22), 2003. Date of Publication: January/February 2003.

[Article]

AN: 36410927

Purpose: Report and review the literature on ureteral avulsion as a rare complication of ureteroscopy.

Material(s) and Method(s): We analyzed 3 cases of ureteral avulsion in a series of 4,645 ureteroscopic procedures performed from January 1990 to December 2001. We especially report the different managements for this complication.

Result(s): Due to the different extent of the injury, each patient was treated in a particular way, including a patient managed by means of an endourological approach.

Conclusion(s): When performing ureteroscopy or using Dormia baskets, one should always bear in mind the possibility of serious complications, including ureteral avulsion or perforation. The use of an extremely careful technique of ureteral insertion, the mandatory placement of a safety guidewire, and a working guidewire, all minimize the risk of untoward events.

Status

Embase

Institution

(Alapont, Broseta, Oliver, Pontones, Boronat, Jimenez-Cruz) Department of Urology, La Fe University Hospital, Avda. Campanar 21, 46009 Valencia, Spain

Publisher

Brazilian Society of Urology

Year of Publication

2003

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910.

Ureteric stenting after ureteroscopy for ureteric stones: A prospective randomized study assessing symptoms and complications.

Jeong H., Kwak C., Lee S.E., Pearle M.S.

Embase

BJU International. 93(7) (pp 1032-1034), 2004. Date of Publication: May 2004.

[Conference Paper]

AN: 38758629

OBJECTIVE: To compare patients with and with no stenting after ureteroscopy for ureteric calculi, as placing such stents is routine, although many patients complain of pain and urinary symptoms.

PATIENTS AND METHODS: In all, 45 patients with ureteric calculi amenable to ureteroscopic management were prospectively randomized into a stented (23) or an unstented (22) group. Standard ureteroscopic basketing and lithotripsy was used, through a ureteroscope (8.5 F) with or without ureteric dilatation. Symptom questionnaires were completed by the patients after treatment, and they were followed radiographically to assess stone-free rate and evidence of obstruction.

RESULT(S): There was no statistically significant difference in age, stone size, operative duration or hospital stay between the groups ($P > 0.05$). Furthermore, there was no statistical difference in flank pain or urinary symptoms ($P > 0.05$), except haematuria, between the groups; haematuria was more severe and prolonged in the stented group ($P = 0.001$).

CONCLUSION(S): Uncomplicated ureteroscopy for removing calculi is safe with no stent after treatment, and after considering complications and side-effects we think that the routine use of ureteric stents after uncomplicated ureteroscopy for stone extraction is unnecessary.

PMC Identifier

15142158 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=15142158>]

Status

Embase

Institution

(Jeong) Department of Urology, Boramae Hospital, Seoul, South Korea (Kwak, Lee) Department of Urology, Seoul Natl. Univ. Coll. Med. C., Seoul National University Hospital, Seoul, South Korea

Publisher

Blackwell Publishing Ltd

Year of Publication

2004

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911.

Plasma bubble formation induced by holmium laser: an in vitro study.

Cecchetti W., Zattoni F., Nigro F., Tasca A.

Embase

Urology. 63(3) (pp 586-590), 2004. Date of Publication: Mar 2004.

[Article]

AN: 38769531

OBJECTIVES: To use the elementary physical measurements of temperature and size to prove that the thermal effects produced by the holmium laser's pulses are due to the formation of a plasma bubble. The physical phenomenon related to high temperatures generated during procedures with the holmium laser (holmium:yttrium-aluminum-garnet) was the object of our interest.

METHOD(S): Using a double micrometric slide attached to a 550-microm optic fiber and two thermocouples submerged in water, a series of pulses of 0.8 J at 10 to 30 Hz was delivered from a holmium:yttrium-aluminum-garnet laser, and we recorded temperatures on both frontal and lateral planes. Subsequently, samples of prostatic tissue and small stones were treated with 1.5 J at 20 Hz on both frontal and lateral planes.

RESULT(S): Treatment with 1.5 J at 30 Hz (frontal plane) and with 1.5 J at 20 Hz (lateral plane) produced the ablation of the structure of the thermocouple at 2 mm and 1 mm, respectively, indicating plasma formation. The dimensions of the bubble after the delivery of 1.5 J at 20 Hz was 2 x 1.5 mm. Coagulation of the prostatic tissue took place at 1 mm from the plasma bubble, on both frontal and lateral planes.

CONCLUSION(S): The plasma bubble that forms at the tip of the fiber connected to the holmium:yttrium-aluminum-garnet laser makes it possible to work on stones and soft tissues. The

coagulation of the prostatic tissue is caused by the hot water-vapor bubble that forms on the edge of the plasma bubble. During lithotripsy, guidewires and baskets within the expansion area of the plasma bubble risk damage.

PMC Identifier

15028473 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=15028473>]

Institution

(Cecchetti, Zattoni, Nigro, Tasca) INFM, Department of Chemistry-Physics, Ca' Foscari

University, Venice, Italy

Year of Publication

2004

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912.

Laparoscopic pyeloplasty and flexible nephroscopy: simultaneous treatment of ureteropelvic junction obstruction and nephrolithiasis.

Ball A.J., Leveillee R.J., Patel V.R., Wong C.

Embase

JSLs : Journal of the Society of Laparoendoscopic Surgeons / Society of Laparoendoscopic Surgeons. 8(3) (pp 223-228), 2004. Date of Publication: 2004 Jul-Sep.

[Article]

AN: 39416475

BACKGROUND AND OBJECTIVE: Ureteropelvic junction obstruction and concomitant calculus disease may coexist. Therapeutic controversy exists regarding their ideal management. We report our use of flexible nephroscopy during laparoscopic pyeloplasty for caliceal stone removal.

METHOD(S): From August 1998 through May 2002, 50 laparoscopic pyeloplasties were performed. Seven patients had documented ureteropelvic junction obstruction and ipsilateral nephrolithiasis. Preoperative stone burden and location were assessed. After pyelotomy, a 16 Fr

flexible endoscope was passed through the uppermost trocar under direct laparoscopic guidance into the collecting system. Stone extraction was performed with a 2.4 Fr Nitinol basket.

Postoperative imaging was assessed.

RESULT(S): Complete stone-free status confirmed by postoperative imaging was achieved in 6 of 7 patients. The longest individual stone diameter ranged from 4 mm to 13 mm (mean, 10.3 mm), and an average of 2.5 stones per patient was removed (range, 1 to 4 stones). Neither intraoperative fluoroscopy nor lithotripsy was required. No intraoperative or delayed complications were noted during a mean follow-up of 8.5 months (range, 2 to 17 months).

CONCLUSION(S): Laparoscopic pyeloplasty and concomitant flexible nephroscopy with basket extraction is a simple, attractive alternative for the simultaneous treatment of ureteropelvic junction obstruction presenting with coexisting nephrolithiasis. It appears more efficacious when the stone number is limited and diameters measure from 5 mm to 20 mm.

PMC Identifier

15347108 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=15347108>]

Institution

(Ball, Leveillee, Patel, Wong) Department of Urology, University of Miami School of Medicine, Miami, FL 33101, USA.

Year of Publication

2004

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Link to the External Link Resolver:

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913.

Upper tract imaging after ureteroscopic holmium:YAG laser lithotripsy: when is it necessary?.

Beiko D.T., Beasley K.A., Koka P.K., Watterson J.D., Nott L., Denstedt J.D., Razvi H.

Embase

The Canadian journal of urology. 10(6) (pp 2062-2067), 2003. Date of Publication: Dec 2003.

[Article]

AN: 38768084

INTRODUCTION/OBJECTIVE: Advances in ureteroscope design and refinements of ancillary instrumentation have resulted in an expanded role for ureteroscopy in the management of urinary calculi. Technological enhancements coupled with improved endourologic skills have also been associated with a reduction in procedural-related complications. Historically, postoperative imaging with ultrasound (U/S) or intravenous pyelogram (IVP) had been advocated to rule out persistent obstruction due to retained stone fragments or ureteral stricture. The purposes of this study were to evaluate the incidence of postoperative ureteral obstruction in a contemporary series of patients undergoing ureteroscopic holmium:YAG laser lithotripsy without basket extraction of fragments and to identify patient, stone and operative factors predictive of which patients will benefit from postoperative imaging. **MATERIALS AND METHODS:** The charts and imaging studies of 89 consecutive patients undergoing a total of 94 holmium:YAG ureteroscopic lithotripsy procedures between December 1998 and December 2000 were retrospectively reviewed. Preoperative, intraoperative and postoperative data were collected and analyzed. The primary outcome measure was the incidence of postoperative ureteral obstruction documented on upper tract imaging. Secondary outcome measures included interventions required for postoperative obstruction and other nonobstructive postoperative complications.

RESULT(S): Twenty-eight females and 61 males were studied, with a mean patient age of 54 (range 13-80) years. Fifty-five percent of patients underwent related procedures prior to referral to our tertiary endourology centre. Complete clinical and radiological follow-up is available for 68 of 89 (76.4%) patients, with a mean follow-up duration of 24.2 weeks. Overall stone-free rate was 97%. Six patients had evidence of urinary tract obstruction on follow-up radiological assessment, two from residual stone fragments and four from ureteral stricture. Each of these four patients had at least one preoperative risk factor for ureteral stricture.

CONCLUSION(S): Routine postoperative upper tract imaging is not necessary in all patients undergoing uncomplicated ureteroscopic holmium:YAG laser lithotripsy. Indications for upper tract imaging include chronic stone impaction, significant ureteral trauma, pre-existing renal function impairment, endoscopic evidence of stricture and postoperative flank pain or fever.

PMC Identifier

14704111 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=14704111>]

Institution

(Beiko, Beasley, Koka, Watterson, Nott, Denstedt, Razvi) Division of Urology, The University of Western Ontario, London, Ontario, Canada.

Year of Publication

2003

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914.

Results with 7.5F versus 10F rigid ureteroscopes in treatment of ureteral calculi.

Yaycioglu O., Guvel S., Kilinc F., Egilmez T., Ozkardes H.

Embase

Urology. 64(4) (pp 643-646), 2004. Date of Publication: October 2004.

[Article]

AN: 39446032

To compare the success and complication rates in the treatment of ureteral stones with a 7.5F versus a 10F ureteroscope. A total of 100 patients who were scheduled for ureteroscopy to treat ureteral calculi between December 2000 and December 2002 were randomly assigned to procedures with a 7.5F (group 1; n = 50) or 10F (group 2; n = 50) ureteroscope. The group results were compared. Group 1 had 36 distal, 9 middle, and 5 proximal ureteral stones. Group 2 had 37 distal, 6 middle, and 7 proximal ureteral stones. No statistically significant differences were noted between the two groups with respect to the mean stone size or operation time ($P = 0.175$ and $P = 0.636$, respectively). Pneumatic lithotripsy was used in 62% and 50% of the procedures in group 1 and 2, respectively, and stones or fragments were retrieved with basket catheters in 92% and 76% of the group procedures, respectively. The difference between the group rates for successful basket catheter extraction was statistically significant ($P = 0.029$). Of the patients in group 1 and 2, 84% and 80%, respectively, were stone free after a single procedure ($P = 0.603$). The corresponding failure rates in the two groups were 6% and 12% ($P = 0.295$), and the corresponding early and late complication rates in the two groups were 6% and 4% ($P = 0.646$). None of the patients in group 1 developed late complications. One individual (2%) in group 2 developed ureteral stenosis during long-term follow-up ($P = 0.315$). The success and failure rates revealed better outcomes for treatment of ureteral calculi with a 7.5F ureteroscope, but the differences were not statistically significant. The complication rates were similar between the two groups. Basket catheters were used more frequently with the 7.5F scope, and the rates of in situ

lithotripsy and postoperative ureteral stent placement were also greater in patients treated with this instrument. © 2004 Elsevier Inc.

PMC Identifier

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Status

Embase

Institution

(Yaycioglu, Guvel, Kilinc, Egilmez, Ozkardes) Department of Urology, Baskent Univ. Faculty of Medicine, Ankara, Turkey, Turkey (Yaycioglu, Guvel, Kilinc, Egilmez) Department of Urology,

Baskent Univ. Adana Teach. Med. R., Ankara, Turkey, Turkey

(Yaycioglu) Department of Urology, Baskent Univ. Adana Clin. Res. Ctr., Dadaloglu Mah. 39 Sok.

No: 6, Y., Turkey

Publisher

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Year of Publication

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915.

Our experience with flexible and rigid ureterorenoscopy. Fleksibil ve rijid ureterorenoskopi ile deneyimlerimiz <Fleksibil ve rijid ureterorenoskopi ile deneyimlerimiz.>

Mutlu N., Komur O., Ozkan L., Tanyeri H., Gokalp A.

Embase

Turk Uroloji Dergisi. 30(3) (pp 348-353), 2004. Date of Publication: 2004.

[Article]

AN: 39406339

Introduction: In this study, the operations performed with flexible ureterorenoscopy (f-URS) and rigid ureteroscopy (r-URS) were evaluated retrospectively and the efficacy of f-URS and r-URS for the diagnosis and treatment of ureter and kidney pathologies were assessed.

Material(s) and Method(s): Ureteroscopic operations were performed for 154 cases between March 2001 and December 2003. The mean ages of the male and female patients were 41 ± 0.4 , 48 ± 0.7 respectively. R-URS was used for 146 cases and f-URS was used for 12 cases. F-URS and r-URS were both used in 4 cases, Karl-Storz-Germany 10 F ureteroscope and Karl-Storz-Germany 7.5 F MVM flexible uretero-reno-fiberscope were used for URS. Swiss-Lithoclast pneumatic lithotripsy system was used for lithotripsy Karl-Storz-Germany splitting forceps and balloon catheters (Uromax-Microvasive-Boston Scientific Cooperation) were used for endopyelotomy procedure. All patients were operated on the Standard lithotomy position. Balloon dilatation was applied for all cases at the educational period. A hydrophilic Guide wire (Glide wire-Microvasive-Boston Scientific Cooperation) was used for insertion of r-URS. When the stone was seen directly a nonhydrophilic guide wire and a stone cone (Microvasive-Boston Scientific Cooperation) passed over the stone. We did not use fluoroscopy routinely. When we did not sure about the passage we passed an open end catheter via guide wire then waited for urine or tested with injection of water. Stone fragments smaller than 2 mm were left off but those bigger than 2 mm were removed by grasper (Triceps-Microvasive-Boston Scientific Cooperation) after stone fragmentation. Double J stents were placed for 39 patients with impacted stones or stones bigger than 1.5 cm. Controls of the patients were assessed by plain films taken 1 month after the operation and success rate of the procedure was defined. Incision of the ureter reached at the periureteral tissue was applied at the posterolateral side of the ureter by splitting forceps during endopyelotomy. Six French double J stents were placed in the ureter for 2 weeks. Control of the patients with endopyelotomy operation was done by intravenous pyelography (IVP). Mean follow up time was 7.6 ± 1.3 month.

Result(s): Thirty five diagnostic procedures were done for 31 patients and different pathologies were found at 25 procedures (71.4%). Transitional cell carcinoma of pelvis renalis in one case and transitional cell carcinoma of ureter in another case were detected. The diagnoses were confirmed by pathology. Non opaque stones in calices in 4 cases, nonopaque ureteral stones in 11 cases and stricture at uretero-pelvic-junction (UPJ) in 8 cases were detected during the diagnostic URS. URS was used for the treatment of multiple pathologies in 148 cases. 152 stones in 135 cases were fragmented completely and the patients were discharged as stone free. Our success rate was 99% for the treatment of distal ureteral stones, 97% for mid ureteral stones and 73% for proximal ureteral stones, but our success rate was only 50% for caliseal stones because we used only nitinol basket catheter for stone removal from calices to upper ureter. Endopyelotomy was applied to 6 cases with UPJ stricture. R-URS was used for the treatment of Stone Street in two cases and for removal of ureteral JJ catheter migrated to kidney in one case

successfully. F-URS was also used for ureteral catheterization of two patients with ureteral compression by lenfadenopathy.

Conclusion(s): It was seen that rigid and flexible ureterorenoscopes can be used for the diagnosis and treatment of the pathologies of ureter and kidneys effectively and safely.

Status

Embase

Institution

(Mutlu, Komur, Ozkan, Tanyeri, Gokalp) Kocaeli Universitesi Tip Fakultesi, Uroloji Anabilim Dalı, Kocaeli, Turkey

Publisher

Aves Yayincilik (Kizilelma CAD. 5/3, Findikzade- Istanbul 34096, Turkey)

Year of Publication

2004

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916.

Comparison of tipless and helical baskets in an in vitro ureteral model.

Lukasewycz S., Hoffman N., Botnaru A., Deka P.M., Monga M.

Embase

Urology. 64(3) (pp 435-438), 2004. Date of Publication: September 2004.

[Article]

AN: 39200728

Objectives To compare the rapidity of stone capture and removal by six tipless and four helical baskets in a ureteral model. Expeditionary ureteral stone extraction is reliant on the basket size, configuration, and radial dilation force. Methods A 5-mm feline calculus was placed in a simulated model of the human ureter at a distance of 7.5 cm from the orifice, and saline irrigant instilled. A 6/7.5F Wolf semirigid ureteroscope was used for access and visualization of the stone. Operators

were randomized to start stone extraction with 1 of 10 stone baskets, and three extraction attempts were conducted with each device. Six experienced operators tested each device. The tipless baskets tested were the ACMI Sur-Catch NT 3.0F, Bard Dimension 3.0F, Boston Scientific Zerotip 3.0F, Cook N-Circle 3.0F, Cook Delta 2.4F, and Sacred Heart Halo 1.9F. The helical baskets tested were the Cook N-Force 3.2F, Microvasive Gemini 3.0F, ACMI Sur-Catch Helical 3.0F, and Sacred Heart Hercules 3.0F. The time to extraction in seconds was recorded. Results No statistically significant difference was observed between the tipless (14 +/- 7 seconds) or helical (12.8 +/- 6.6 seconds, P = 0.21) basket groups. All baskets were able to retrieve the ureteral stones successfully. The most efficient basket was the Cook N-Circle with an average time of 8.7 seconds to stone extraction compared with the least efficient basket, the ACMI Sur-Catch NT, at 15.8 seconds. Conclusions The Cook N-Circle basket provided the most expeditious means to stone extraction in a ureteral model. © 2004 Elsevier Inc.

PMC Identifier

15351559 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=15351559>]

Status

Embase

Institution

(Lukasewycz, Hoffman, Botnaru, Deka, Monga) Department of Urologic Surgery, Univ. of Minnesota Sch. of Medicine, Minneapolis, MN, United States (Monga) Department of Urologic Surgery, Univ. of Minnesota Sch. of Medicine, Mayo Mailcode 394, 420 Delaware S., Minneapolis, MN, United States

Publisher

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Year of Publication

2004

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Radial dilation force of tipless and helical stone baskets.

Hendlin K., Lee C., Anderson J.K., Monga M.

Embase

Journal of Endourology. 18(10) (pp 946-947), 2004. Date of Publication: December 2004.

[Conference Paper]

AN: 40070902

Purpose: To evaluate one aspect of tipless and helical stone basket function that is critical for ureteral stone extraction: the radial-dilation force.

Material(s) and Method(s): Nine commercially available tipless baskets and five commercially available helical stone baskets were tested. Two Teflon blocks were positioned with the lower block sitting on a digital scale and the upper block secured to a plastic frame and base. A 0.01-inch gap was maintained between the blocks using a digital micrometer. Alignment pins secured the position of the lower block in relation to the upper block. A 4-mm cylindrical hole was drilled through the center of the block interface, and each basket was passed through the hole and opened to its fully extended length. The basket was then slowly retracted through the hole, and the maximum force reading was recorded. Twenty repetitions were performed for each basket.

Result(s): Of the tipless baskets $\geq 3.0F$, the Cook N-Circle 3.2F provided the best radial dilation (24.7 $\pm$ 0.4 g). For tipless baskets $< 3.0F$, the Sacred Heart Vantage 2.4F provided the best radial dilation (19.6 $\pm$ 0.8 g). Of the helical baskets, the Sacred Heart Hercules provided the most radial dilation (102 $\pm$ 12.1 g) followed by the Cook N-Force (71.8 $\pm$ 4.3 g).

Conclusion(s): The radial-dilation force of tipless and helical stone baskets differs significantly among baskets and may impact stone extraction performance in the ureter.

PMC Identifier

15801359 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=15801359>]

Status

Embase

Institution

(Hendlin) Department of Biomedical Engineering, University of Minnesota, Minneapolis, MN, United States (Lee, Anderson, Monga) Department of Urologic Surgery, University of Minnesota, Minneapolis, MN, United States

(Monga) Dept. of Urologic Surgery, University of Minnesota, Mayo Mailcode 394, 420 Delaware St. S.E., Minneapolis, MN 55455, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

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918.

Comparison of nitinol tipless stone baskets in an in vitro caliceal model.

Lukasewycz S., Skenazy J., Hoffman N., Kuskowski M., Hendlin K., Monga M.

Embase

Journal of Urology. 172(2) (pp 562-564), 2004. Date of Publication: August 2004.

[Article]

AN: 38900204

Purpose: Tipless stone baskets facilitate caliceal calculi extraction during flexible ureteroscopy. We evaluated the stone capture rate of 9 commercially available tipless stone baskets in an in vitro model using novice and expert operators.

Material(s) and Method(s): The Microvasive Zerotip (2.4Fr, 3.0Fr), Cook N-Circle (2.2Fr, 3.0Fr, 3.2Fr), Bard Dimension (3.0Fr, Sacred Heart Medical Halo (1.9Fr), Vantage (1.9Fr) and Circon-ACMI Sur-Catch-NT (3.0Fr) were tested by 3 novice and 3 experienced basket operators. Each operator performed stone extraction of 2, 5 and 8 mm calculi (size determined by digital caliper with 3 repetitions of each basket. The time to extraction of the calculus from a convex based test tube caliceal model was recorded. Statistical analysis was performed using repeated measures ANOVA and Fisher's pairwise comparisons.

Result(s): After a learning curve of 27 basket retrievals, there was no significant difference in stone capture times between novice (38 +/- 54 seconds) and expert operators (32 +/- 49 seconds, $p = 0.174$). For total stone capture (all sizes) the Sacred Heart Halo resulted in the most rapid stone extraction (17 +/- 14 seconds) by novices and experts, while the Sur-Catch NT resulted in the slowest stone extraction (78 +/- 90, seconds, $p = 0.001$). The Halo (14 +/- 9 seconds) and Vantage (19 +/- 12 seconds) baskets were significantly faster for 2 mm calculi than the N-Circle (73 +/- 60 seconds, $p = 0.006$), Sur-Catch (169 +/- 85 seconds, $p = 0.0005$) and Dimension (73 +/- 70 seconds, $p = 0.017$). The Zerotip functioned well for 2 mm calculi in the

hands of expert operators (15 +/- 9 seconds) but not novice operators (94 +/- 95 seconds). The Sur-Catch NT was significantly slower for 2 mm calculi than the N-Circle ($p = 0.01$), Dimension ($p = .03$), Halo ($p = .0005$), Vantage ($p = .001$) and Zerotip ($p = .002$). For 5 mm calculi the Halo was superior (12 +/- 8 seconds), while the Zerotip were superior for 8 mm calculi (8 +/- 3 seconds) compared to the N-Circle (23 +/- 28 seconds, $p = 0.026$), Halo (26 +/- 18 seconds, $p = 0.021$) and Vantage (23 +/- 15 seconds, $p = 0.006$).

Conclusion(s): The Sacred Heart Halo and Vantage baskets resulted in the most expeditious stone extraction, especially for 2 to 5 mm calculi while the Microvasive Zerotip was optimal for 8 mm calculi. The Sur-Catch NT had the slowest stone capture rate for all stone sizes. Caliceal models of stone basketing may be useful to train novice urology residents and nursing assistants.

PMC Identifier

15247730 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=15247730>]

Status

Embase

Institution

(Lukasewycz, Skenazy, Hoffman, Kuskowski, Hendlin, Monga) Department of Urologic Surgery, University of Minnesota, Minneapolis, MN, United States (Monga) Department of Urologic Surgery, University of Minnesota, Mayo Mailcode 394, 420 Delaware St. S.E., Minneapolis, MN 55455, United States

Publisher

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Year of Publication

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919.

Routine ureteral dilatation is not necessary for ureteroscopy.

Unsal A., Cimentepe E., Balbay M.D.

Embase

International Urology and Nephrology. 36(4) (pp 503-506), 2004. Date of Publication: December 2004.

[Article]

AN: 40208025

Purpose: To present our experience in ureteroscopic lithotripsy and stone extraction without ureteral dilatation.

Patients and Methods: A total of 134 consecutive patients (80 male and 54 female), with a mean age of 36.4 (18-65) years underwent ureteroscopic stone removal. The stones were located in the lower, middle, and upper parts of the ureter in 92, 18 and 24 patients and the mean stone diameters were 9.2 (6-15) mm, 10.5 (8-15) mm and 8.8 (8-10) mm, respectively. A semirigid ureteroscope 8 F in size was used without any ureteral dilatation. The stones were fragmented by a pneumatic lithotripter in the ureter and the fragments were removed by a basket catheter or stone forceps. All patients were re-evaluated with a plain film on postoperative first day and with intravenous urography (IVU) at 3 months. Residual fragments bigger than 3 mm were accepted as treatment failure.

Result(s): The mean operation time was 44 (20-120) minutes. After the operation, the stone-free rate was 89/92 (97%) for lower, 15/18 (83%) middle and 18/24 (75%) upper ureteral stones, respectively. Double J catheter replacement was needed in 13 patients due to impacted stone and/or failed procedure. Ureteral perforation did not occur in any patient. Patients were discharged from hospital within 6-24 hours. No ureteral stricture was encountered during the follow-up period.

Conclusion(s): Our experience suggests that ureteroscopic interventions could be easily performed for all parts of ureter without previous dilatation of the ureter. © 2004 Kluwer Academic Publishers.

PMC Identifier

15787325 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=15787325>]

Status

Embase

Institution

(Unsal, Cimentepe, Balbay) Department of Urology, Fatih University, School of Medicine, Ciftlik Cd. No: 57 06510, Emek, Ankara, Turkey

Publisher

Springer Netherlands (Van Godewijkstraat 30, Dordrecht 3311 GZ, Netherlands)

Year of Publication

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920.

Improved Functional Deflection with a Dual-Deflection Flexible Ureteroscope.

Shvarts O., Perry K.T., Goff B., Schulam P.G.

Embase

Journal of Endourology. 18(2) (pp 141-144), 2004. Date of Publication: March 2004.

[Conference Paper]

AN: 38490003

Purpose: To compare the maximal active deflection capabilities of a newly designed dual-deflection ureteroscope with those of a standard flexible ureteroscope.

Material(s) and Method(s): The dual-deflection ureteroscope is similar in design to single-deflection ureteroscopes with the addition of a second, more proximal unidirectional deflection point, which is controlled with the index finger on the contralateral side of the instrument. We evaluated the maximal deflection angles achieved with this ureteroscope with no inserted devices as well as with 200-, 365-, and 550-mum laser fibers and a 3F Nitinol wire basket in the working port. We compared these angles with those obtained with the Dur-8 single-deflection ureteroscope.

Result(s): The dual-deflection ureteroscope allowed a superior maximum active deflection angle of 234.3degree with an empty working channel compared with only 143degree for the standard single-deflection ureteroscope. Instruments in the working channel dampened the active deflection of both ureteroscopes. The average maximum upward angles achievable with the single-deflection ureteroscope with the 200-, 365-, and 550-mum laser fibers and the 3F basket were 115.3degree, 92degree, 46.6degree, and 123.3degree, respectively. The average deflection angles with the dual-deflection endoscope deflected at the distal point were similar to those obtained with the single-deflection ureteroscope. In contrast, the average maximum deflection angles obtained with the dual-deflection endoscope deflected at both points with a 200-, 365-,

and 550-μm laser fiber and a 3F basket in the working channel were 211degree, 183.3degree, 109degree, and 224degree, respectively. The degree of dampening by larger instruments was greater in the single-deflection than the dual-deflection ureteroscope.

Conclusion(s): The double-deflection ureteroscope can achieve superior active deflection compared with a standard ureteroscope. The second active angle allows the use of larger instruments in the working port with a smaller impact on overall deflection. The double-deflection ureteroscope should be beneficial in the management of difficult-to-treat lower-pole renal calculi and may allow some patients who would have required percutaneous nephrolithotomy to undergo ureteroscopic management of their stone disease.

PMC Identifier

15072620 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=15072620>]

Status

Embase

Institution

(Shvarts, Goff, Schulam) Department of Urology, UCLA School of Medicine, Los Angeles, CA, United States (Perry) Department of Urology, Loyola University School of Medicine, Maywood, IL, United States

(Schulam) Dept. of Urology, UCLA, CHS, 10833 Le Conte Avenue, Los Angeles, CA 90095-1738, United States

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Year of Publication

2004

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921.

Flexible ureterorenoscopy: Prospective analysis of the Guy's experience.

Dasgupta P., Cynk M.S., Bultitude M.F., Tiptaft R.C., Glass J.M.

Embase

Annals of the Royal College of Surgeons of England. 86(5) (pp 367-370), 2004. Date of Publication: September 2004.

[Article]

AN: 39232555

Objective: To report our outcomes with small diameter, actively deflectable flexible ureterorenoscopy from a prospective database.

Patients and Methods: 114 flexible ureterorenoscopies were performed in 105 patients (mean age, 49.5 years; range, 19-85 years; 71 males, 34 females) over a 9-month period. Of these, 101 were for refractory stones following failed ESWL and 13 for diagnostic reasons. An Olympus URF P3 flexible ureteroscope with pressure irrigation was used. Electrohydraulic lithotripsy was used to fragment stones and the fragments were retrieved with Graspit, triradiate graspers or tipless baskets.

Result(s): Stents had previously been placed in 53% and dilatation of the ureteric orifice was necessary in 15%. In the stone group, the median operating time was 55 min (range, 15-210 min) and the median screening time 2.2 min (range, 0.3-9.1 min). Success was defined as complete stone clearance or good fragmentation to 2 mm or less. Overall success in this group was 72.3%. There was no statistically significant difference between lower and other calyces ($P = 0.83$ Chi-square test). Successful outcome was achieved in 72% for stone size 10 mm or less, 80% for 11-20 mm and 50% for greater than 20 mm. Two or more procedures were needed in 8 patients. In the diagnostic group, the median operating time was 45 min (range, 20-60 min) and the median screening time 2 min (range, 0.3-8.3 min). The majority were for upper tract filling defects. Access and successful diagnosis was achieved in all cases. The major complication rate was 2.6%. The ureteroscope needed repair once during this series.

Conclusion(s): Flexible ureterorenoscopy is an effective diagnostic and therapeutic tool in a select group of patients. It should be considered for ESWL-resistant upper tract stones but the results are poor in stones larger than 20 mm and percutaneous nephrolithotomy may be a better option in these patients.

PMC Identifier

15333176 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=15333176>]

Status

Embase

Institution

(Dasgupta, Cynk, Bultitude, Tiptaft, Glass) Endo-Urology Unit, Guys and St Thomas' Hospital, St Thomas' Street, London SE1 9RT, United Kingdom

Publisher

Royal College of Surgeons of England (35-43 Lincoln's Inn Fields, London WC2A 3PN, United Kingdom)

Year of Publication

2004

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922.

An audit of 2273 ureteroscopies - A focus on intra-operative complications to justify proactive management of ureteric calculi.

Butler M.R., Power R.E., Thornhill J.A., Ahmad I., McLornan I., McDermott T., Grainger R.

Embase

Surgeon. 2(1) (pp 42-46), 2004. Date of Publication: February 2004.

[Article]

AN: 38219604

Background: At the National Stone Centre we have adopted a proactive management approach involving early ureteroscopy for ureteric calculi. As the efficacy of ureteroscopy is known this study focuses on the low intra-operative complication rate as justification for a proactive management protocol.

Patients and Methods: A retrospective study (1987-1997) identified 1,936 patients undergoing 2,273 ureteroscopies. A database was created from inpatient hospital records. The male to female ratio was 3 to 1, age range was 25 to 84 years.

Result(s): Twenty-three patients (1%) had an intra-operative complication during ureteroscopy. Immediate ureteric JJ stenting was performed in 16 cases with ureteric injury. Two cases underwent percutaneous drainage and delayed antegrade ureteric stenting, ureteroscopy was terminated because of poor visibility. Five patients (0.22%) underwent open surgery for: ureteric perforation (n=2); Dormia basket ureteric avulsion (n=1); impacted Dormia basket and stone

(n=1); and impacted balloon dilator and stone (n=1). Ureteroscopic complications were not related to the level of ureteric calculus.

Conclusion(s): A protocol of proactive management of ureteric calculi facilitates rapid turnover of large patient numbers. This approach is supported by the low intraoperative complication rate, most of which can be managed by further endoscopic procedures. In the event of corrective open surgery a favourable outcome has resulted.

PMC Identifier

15570806 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=15570806>]

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Embase

Institution

(Butler, Power, Thornhill, Ahmad, McLornan, McDermott, Grainger) Department of Urology, The Adelaide/Meath Hospital Dublin, The National Children's Hospital, Tallaght, Dublin 24, Ireland

(Butler) Royal College of Surgeons in Ireland, 123 St Stephens Green, Dublin 2, Ireland

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923.

Ex vivo ureteroscopic treatment of calculi in donor kidneys at renal transplantation.

Rashid M.G., Konnak J.W., Wolf Jr. J.S., Punch J.D., Magee J.C., Juan D. Arenas, Faerber G.J.

Embase

Journal of Urology. 171(1) (pp 58-60), 2004. Date of Publication: January 2004.

[Article]

AN: 37549089

Purpose: We evaluated the safety and efficacy of ex vivo ureteroscopy (ExURS) as a means of rendering the donated kidney stone-free at live donor renal transplantation.

Material(s) and Method(s): A total of 10 suitable kidney donors with small, unilateral nonobstructive calculi underwent live donor nephrectomy (8 open flank, 2 hand assisted transperitoneal). Immediately after cold perfusion, ExURS was performed in an iced saline solution. Access to the collecting system was via the ureteral stump. Calculi were either removed with endoscopic baskets and/or completely fragmented with Holmium laser lithotripsy.

Result(s): Access to the renal collecting system was technically successful in all cases. A total of 10 stones, ranging in largest diameter from 1 to 8 mm (average 5.2) were visualized. Of the kidneys 6 had solitary stones, 2 had 2 stones and 1 had no stone. Of 10 stones 9 were successfully removed and/or fragmented with an average procedure time of 6.5 minutes (range 3 to 28). Indwelling ureteral stents were placed at transplantation in 5 of 10 kidneys. There were no intra-operative or postoperative ureteral complications. At 1 month after transplant serum creatinine ranged from 0.9 to 2.7 mg/dl (average 1.5). At a mean followup of 33.2 months new stones have not formed in any recipients and at mean 36.4-month followup no new calculi have formed in the remaining kidney of any donors.

Conclusion(s): ExURS is a technically feasible means of rendering a stone bearing kidney stone-free without compromising ureteral integrity or renal allograft function.

PMC Identifier

14665843 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=14665843>]

Status

Embase

Institution

(Punch, Magee, Juan D. Arenas) Department of Urology, Department of General Surgery, Univ. of Michigan Medical Center, Ann Arbor, MI, United States (Rashid, Konnak, Wolf Jr., Faerber) Division of Transplantation, Univ. of Michigan Medical Center, Ann Arbor, MI, United States (Faerber) Department of Urology, Univ. of Michigan Medical Center, 1500 East Medical Center Drive, Ann Arbor, MI 48109-0330, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

2004

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924.

Impact on Active Scope Deflection and Irrigation Flow of All Endoscopic Working Tools during Flexible Ureteroscopy.

Pasqui F., Dubosq F., Tchala K., Tligui M., Gattegno B., Thibault P., Traxer O.

Embase

European Urology. 45(1) (pp 58-64), 2004. Date of Publication: January 2004.

[Article]

AN: 37548995

Objective: Flexible ureteroscopy is nowadays an alternative effective option for treatment of upper urinary tract stones, especially in the lower renal pole. Access in this case is often limited by active deflection capabilities of the instrument which is always deteriorated by the passage of different tools through the working channel. Insertion of them limits also the irrigation flow and so that the visibility. These deteriorations vary largely following the tool inserted. We performed an in vitro evaluation of deterioration of active deflection, possibility of tool insertion in maximal active deflection and irrigation flow in 6 different flexible ureteroscopes with almost all of tools available.

Method(s): A total of 546 measures of maximal deflection, test of passage of tools in maximal deflection and measures of irrigation flow passage through the working channel were made on 6 different ureteroscopes, the ACMI DUR-8, the ACMI DUR-8 "Elite", the Karl Storz 11274 AA, the Karl Storz 11278 AU1 "Flex-X", the Wolf 7325.172 and the Olympus URF/P-3 without any tool inserted and with 22 different tools (14 extraction devices and 8 lithotripsy probes).

Result(s): Larger caliber tools resulted in more deflection degradation than smaller ones but it is more evident in case of use of non-nitinol tools instead of the nitinol ones. Generally lithotripsy probes affected active deflection more than nitinol extractions tools but different brand laser fibres present different results. Usually 1.6 and 1.9F electro hydraulic probes offer a slightly better deflection than does the 200mu laser fibre. Ballistic shock probes are so stiff that can not be used for treating lower renal pole stones.

Conclusion(s): An array of different instruments are nowadays available for upper renal endoscopic treatment but they differ largely on stiffness and on obstruction to irrigation flow.

Laser probes are very problematic to insert in the already deflected instruments, something that is less evident with the EHL probes and the smaller nitinol extraction tools. Irrigation flow is

inversely proportional to the diameter of the tool inserted. Tools with a diameter of 3 French or more block totally the flow. © 2003 Elsevier B.V. All rights reserved.

PMC Identifier

14667517 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=14667517>]

Status

Embase

Institution

(Pasqui, Dubosq, Tchala, Tligui, Gattegno, Thibault, Traxer) Department of Urology, Hopital Tenon, 4, rue de la Chine, 75020 Paris, France

Publisher

Elsevier (P.O. Box 211, Amsterdam 1000 AE, Netherlands)

Year of Publication

2004

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925.

Removal of asymptomatic ipsilateral renal stones following rigid ureteroscopy for ureteral stones.

Bilgasem S., Pace K.T., Dyer S., Honey R.J.D'A.

Embase

Journal of Endourology. 17(6) (pp 397-400), 2003. Date of Publication: August 2003.

[Article]

AN: 36999357

Purpose: To evaluate the feasibility and outcome of flexible ureteroscopic removal of small (<1-cm) asymptomatic renal stone(s) following rigid ureteroscopy for ureteral stones.

Patients and Methods: Ten female and nineteen male patients underwent rigid ureteroscopy and holmium lasertripsy for removal of ureteral stone(s). All had asymptomatic renal stone(s) on the same side, which were then removed using flexible ureteroscopy. The renal stones were either

removed intact with a tipless Nitinol basket or fragmented with the laser to small pieces (<2 mm), with basket removal of larger fragments. The number and size of stones, total operative time, added time needed for flexible ureteroscopy, and intraoperative and postoperative complications were recorded. Follow-up at 1 month included a plain abdominal film and renal ultrasonography or noncontrast CT scan.

Result(s): Fifty-six renal stones with a mean size of 5.7 mm were treated. Fourteen patients had stones on the right side, and 15 had stones on the left. The mean total operative time was 56.5 minutes, with a mean added time of 16.7 minutes for flexible ureteroscopy. Stones were removed intact in 18 patients and fragmented in 8 patients, resulting in an immediate success rate of 90%. There were three failures. One-month follow-up confirmed all patients were either stone-free or had residual fragments <2 mm in diameter, with no new-onset hydronephrosis.

Conclusion(s): Removal of small asymptomatic renal stones at the time of ureteroscopy for ureteral stones appears safe and effective and requires little additional operative time.

PMC Identifier

12965066 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=12965066>]

Status

Embase

Institution

(Bilgasem, Pace, Dyer, Honey) Division of Urology, St. Michael's Hospital, University of Toronto, Toronto, Ont., Canada (Honey) Dept. of Urology, St. Michael's Hospital, 30 Bond Street, Toronto, Ont. M5B 1W8, Canada

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2003

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Extracorporeal shock wave lithotripsy for distal ureteral calculi: What a powerful machine can achieve.

Hochreiter W.W., Danuser H., Perrig M., Studer U.E.

Embase

Journal of Urology. 169(3) (pp 878-880), 2003. Date of Publication: 01 Mar 2003.

[Article]

AN: 36188112

Purpose: We assessed the efficacy of extracorporeal shock wave lithotripsy (ESWL, Dornier Medical Systems, Inc., Marietta, Georgia) for distal ureteral calculi with the HM3 (Dornier Medical Systems, Inc.) lithotripter.

Material(s) and Method(s): A total of 585 consecutive patients with distal ureteral calculi were treated with ESWL using an unmodified HM3 lithotripter. Of these patients 67 referred for treatment only for whom no followup was available were excluded from further analysis. The remaining 518 cases were followed until they were radiologically documented to be stone-free or considered treatment failures. Before ESWL additional procedures were performed in 144 patients, including stone push back, ureteral catheter or Double-J (Medical Engineering Corp., New York, New York) stent placement, percutaneous nephrostomy, ureteral endoscopic maneuvers or stone basket manipulation. A total of 374 patients needed no preliminary treatment before ESWL.

Result(s): Of the 518 patients 469 (91%) were successfully treated with 1 ESWL session, while 49 (9%) needed 2 or 3. Manipulation after ESWL was performed in 22 cases, including stent placement, percutaneous nephrostomy, ureteral endoscopic stone removal and a stone basket procedure. On day 1 after ESWL 327 patients (63%) were stone-free, 158 (30%) had less than 5 mm. fragments and 33 (7%) had more than 5 mm. fragments. At 3 months the stone-free rate increased to 97%.

Conclusion(s): These data show that ESWL for distal ureteral calculi with the powerful unmodified HM3 lithotripter has a high success rate with a low rate of minimally traumatic manipulations before and after intervention. Results in terms of the re-treatment and stone-free rates are superior to those of any other second or third generation lithotripter and comparable to the results of the best ureteroscopic series.

PMC Identifier

12576804 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=12576804>]

Status

Embase

Institution

(Hochreiter, Danuser, Perrig, Studer) Department of Urology, University of Bern, Bern, Switzerland

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

2003

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927.

Morbidity associated with surgical treatment of ureteric calculi in a teaching hospital in Kuwait.

Kehinde E.O., Al-Awadi K.A., Al-Hunayan A., Okasha G.H., Al-Tawheed A., Ali Y.

Embase

Annals of the Royal College of Surgeons of England. 85(5) (pp 340-346), 2003. Date of Publication: September 2003.

[Article]

AN: 37168266

Background: Ureteric lithiasis is a common urological problem in Kuwait. Because of the different interventional approaches, we carried out an audit on the morbidity associated with the surgical management of the disorder.

Patients and Methods: The surgical records were reviewed of all patients with the diagnosis of ureteric lithiasis that were managed surgically by ureteroscopy or ureterolithotomy in Mubarak Al-Kabeer Hospital in Kuwait between January 1996 and December 1999. Patients' bio-data, location of calculi, indications for surgical intervention, types of therapeutic interventions, operating surgeon and complications were analysed. Patients managed primarily and successfully by extracorporeal Shockwave lithotripsy were excluded from this analysis.

Result(s): A total of 1383 patients with ureteric calculus were managed in the period under review - 775 (56%), 567 (41%), and 41 (3%) patients were managed by extracorporeal Shockwave

lithotripsy, ureteroscopy and ureterolithotomy, respectively. The 608 patients managed by ureteroscopy or ureterolithotomy had a total of 710 operations. The commonest surgical procedure performed was ureteroscopy with Dormia basket with or without double 'J' stenting and this accounted for 418 (58.9%) operations. The least common procedure was ureteric meatotomy with Dormia basket and with or without double 'J' stenting in 9 (1.3%) patients. The overall complication rate was 110 out of 710 (15.5%) operations. Of the complications, 101 (92%) were minor (e.g. haematuria, fever, and mucosal injury). Nine (8%) complications were major complications (e.g. ureteric perforation and ureteric avulsions). Ureterolithotomy and ureteroscopy with intracorporeal lithotripsy were associated with the highest complication rates. Conclusion(s): This analysis has shown that with technological advances, the treatment of ureteric lithiasis has improved and major complications have decreased. However, with so many therapeutic options to choose from, there is a need to audit the various therapeutic options and select those associated with the least morbidity rates in each urology unit.

PMC Identifier

14594540 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=14594540>]

Status

Embase

Institution

(Kehinde, Al-Awadi, Al-Hunayan, Al-Tawheed, Ali) Department of Surgery, Faculty of Medicine, Kuwait University, PO Box 24923, Safat 13110, Kuwait (Okasha) Department of Nursing Services, Faculty of Medicine, Kuwait University, PO Box 24923, Safat 13110, Kuwait

Publisher

Royal College of Surgeons of England (35-43 Lincoln's Inn Fields, London WC2A 3PN, United Kingdom)

Year of Publication

2003

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928.

Bare naked baskets: Optimizing ureteroscopic stone extraction.

Monga M., Landman J., Clayman R.V.

Embase

Urology. 61(2) (pp 490), 2003. Date of Publication: 01 Feb 2003.

[Letter]

AN: 36206571

PMC Identifier

12597987 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=12597987>]

Status

Embase

Institution

(Monga, Landman, Clayman) Department of Urologic Surgery, Univ. of Minnesota Sch. of Medicine, Minneapolis, MN, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

2003

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929.

Holmium: YAG laser rescue for a stuck stone basket.

Ansari M.S., Goel A., Karan S.C., Aron M.

Embase

International Urology and Nephrology. 34(4) (pp 463-464), 2003. Date of Publication: 2002.

[Article]

AN: 37235968

A 35-year-old man with left lower ureteric stone underwent ureteroscopic stone removal.

Holmium: YAG laser lithotripsy was used to break the stone and to remove a larger fragment a 3 Fr. steel wire stone basket was introduced through the ureteroscope. However, during removal the basket with the stone became impacted in the intramural part of the ureter. All attempts to dislodge the stone and the basket failed. Laser fiber was introduced through the second channel of the ureteroscope bridge and the laser activated at settings of 0.5J and 10Hz. Pulverization of the stone did not free the basket and hence 2 wires of the stuck basket were cut with the laser. This enabled the basket to be freed and easily removed.

PMC Identifier

14577485 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=14577485>]

Status

Embase

Institution

(Ansari, Goel, Karan, Aron) Department of Urology, All India Institute of Medical Sciences, New Delhi 110029, India

Publisher

Springer Netherlands (Van Godewijkstraat 30, Dordrecht 3311 GZ, Netherlands)

Year of Publication

2003

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930.

The stone cone: A new generation of basketry.

Dretler S.P.

Embase

Journal of Urology. 165(5 I) (pp 1593-1596), 2001. Date of Publication: 2001.

[Article]

AN: 32410249

Purpose: We designed a device to minimize ureteral stone migration during intracorporeal lithotripsy, decrease the likelihood of stone and/or basket entrapment, and extract whole stones and fragments.

Material(s) and Method(s): Nitinol and stainless steel wires were configured into expandable tapered cones, which were placed cephalad to in vitro and in vivo concretions, and used to trap and extract stones as well as other test material. Safety features were evaluated by measuring the release of ball bearings and the tension needed to unwind the coils of the cone, which were greater than 4 mm. in diameter. We treated 4 patients with ureteral calculi using the Stone Cone+ to prevent migration and extract fragments.

Result(s): The cone-shaped devices expanded to occlude the test devices and human ureters, and prevented stone migration. They extracted whole concretions and fragments greater than 1.5 mm. The cone-shaped basket released a 5.5 mm. ball bearing at an average 0.127 pounds of tension when pulled through a 5 mm. plastic orifice. Coils greater than 4 mm. in diameter were straightened at a tension of 0.10 to 0.14 pounds. Stone migration during intracorporeal lithotripsy was prevented in the 4 patients with ureteral calculi, in whom large and small fragments were safely extracted.

Conclusion(s): The Stone Cone may be placed via a ureteral catheter and opened cephalad to a ureteral stone to prevent stone migration during intracorporeal lithotripsy. It may extract whole stones and fragments greater than 1.5 mm. It is designed, so that its coils greater than 4 mm. in diameter release concretions too wide for the ureter or ureteral orifice after approximately 0.127 pounds of tension are applied. Because of these features, the Stone Cone represents a new generation of basketry appropriate to the era of ureteroscopy and intracorporeal lithotripsy. It is worthy of further clinical study.

PMC Identifier

11342924 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=11342924>]

Status

Embase

Institution

(Dretler) Kidney Stone Center, Massachusetts General Hospital, Boston, MA, United States

(Dretler) Department of Surgery, Harvard Medical School, Cambridge, MA, United States

Publisher

Lippincott Williams and Wilkins

Year of Publication

2001

Link to the Ovid Full Text or citation:

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931.

Calyceal diverticula: Ureteroscopic management.

Chong T.W., Bui M.H.T., Fuchs G.J.

Embase

Urologic Clinics of North America. 27(4) (pp 647-654), 2000. Date of Publication: 2000.

[Review]

AN: 30836791

In selected cases, RIRS management of calyceal diverticula and its related problems has been shown to be more efficacious than ESWL monotherapy and avoids the potential complications and discomfort of percutaneous and laparoscopic procedures. The advent of the Holmium laser energy source, with innovations such as the flexible ureteroscope and the tipless stone basket, have expanded the role of RIRS in the management of calyceal diverticula and associated problems. Presently, RIRS is the initial treatment choice for the management of low to moderate stoneburdens that are contained in calyceal diverticula or trapped behind any narrowed intrarenal segment (e.g., infundibular stenosis). If repair of the stenotic segment is not successful, thereby excluding stone treatment, then under the same anesthesia, the patient undergoes a percutaneous antegrade renal surgery. The authors feel that the percutaneous approach as a first choice is more suitable for posteriorly located diverticula with a large stone burden. In selected cases of anteriorly located diverticula with large stone burdens, the laparoscopic approach is more expedient.

PMC Identifier

11098763 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=11098763>]

Status

Embase

Institution

(Tsong Wen Chong, Bui, Fuchs) Cedars-Sinai Medical Center, Endourology Institute, 8635 West Third Street, Los Angeles, CA 90048, United States

Publisher

W.B. Saunders

Year of Publication

2000

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932.

Flexible mini-ureteroscopy in diseases of the upper urinary tract: our experience. Mini-ureteroscopy flessibile nelle malattie dell'apparato urinario alto: la nostra esperienza <Mini-ureteroscopy flessibile nelle malattie dell'apparato urinario alto: la nostra esperienza.>

Defidio L., Governatori M., Piccolotti D., Di Pinto A.

Embase

Archivio italiano di urologia, andrologia : organo ufficiale [di] Societa italiana di ecografia urologica e nefrologica / Associazione ricerche in urologia. 73(4) (pp 187-192), 2001. Date of Publication: Dec 2001.

[Article]

AN: 35578319

OBJECTIVE: The aim of our work is to present our experience about the use of flexible mini-ureteroscope in the diagnosis and therapy of some upper urinary tract diseases.

METHOD(S): We evaluated the data of 52 mini-ureteroscopy performed with 7.4 Fr instrument. The indications for ureteroscopy were: kidney stones (25 cases, 48.1%), filling defects (12 cases, 23.1%), positive cytology (5 cases, 9.6%), lateralising haematuria (8 casi, 15.4%), ureteropelvic junction obstruction (2 cases, 3.8%).

RESULT(S): There were no major complications during procedure. The stones were fragmented by 1.9 Fr electrohydraulic probe, by 200 and 365 m Holmium: YAG laser fiber or extracted by 0-

Tip 3 Fr nitinol basket. The found papillary neoplasms were removed by basket or grasper and coagulated by laser fiber or 2 Fr electrode. The angiomas were coagulated by laser or 2 Fr electrode. The ureteropelvic junction was incised laterally by 365 m laser fiber or 3 Fr Rite-Cut. We interrupted the procedure only in 2 (3.8%) cases of lower pole kidney stones, because of lack of access with the laser fiber or other instruments.

CONCLUSION(S): Today, the flexible mini-ureteroscopy is the gold standard in the diagnosis of filling defects and lateralising haematurias. This technique can be therapeutic also for the angiomas and the low grade tumours. In case of kidney stones, this technique is a less invasive alternative compared to percutaneous nephrolithotomy in the treatment of caliceal stones resistant to SWL and is the only therapy for the extremely obese patients with bleeding diathesis.

PMC Identifier

11822065 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=11822065>]

Institution

(Defidio, Governatori, Piccolotti, Di Pinto) Divisione di Urologia, Ospedale Cristo Re, Roma, Italia.

Year of Publication

2001

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933.

Review and results of our first ureteroscopy experience at the Klaipeda Hospital. Pirmuju ureterorenoskopiju Klaipedos ligonineje apzvalga ir rezultatai <Pirmuju ureterorenoskopiju Klaipedos ligonineje apzvalga ir rezultatai.>

Silinskas V., Janusonis V., Uktveris S., Venckus R., Joniskis S., Zaicev S., Perkauskas T., Jocys G., Kukulskis G.

Embase

Medicina (Kaunas, Lithuania). 38 Suppl 1 (pp 8-12), 2002. Date of Publication: 2002.

[Article]

AN: 36488468

OBJECTIVE: To estimate an experience of our first ureteroscopic procedures. **MATERIAL AND METHODS:** The data of 65 patients, who underwent ureteroscopy in Klaipeda Hospital during period 2000 August - 2002 February were analyzed. The indications were: obstructive ureteral stones after not successful extracorporeal lithotripsy, rigid ureteral stones, radionegative ureteral stones and ureteral strictures. The procedures were performed mostly in general, less in spinal anesthesia. The operations were completed on average within 120 minutes. The whole procedure was performed in double visual and radiologic correction. In 42.3 percent of cases there was performed only lithextraction, in other 42.3 percent of cases pneumatic lithotripsy and lithextraction, the remainder underwent for fixing with Dormia basket, pneumatic lithtripsy and lithextraction.

RESULT(S): There were 65 ureteroscopies performed, of them 59 cases for the reason of ureterolithiasis. The overall success rate for ureterolithiasis was 92.3 percent. Two cases were transformed in open operation. All patients received postoperative stenting, which lasted from 3-4 days to several weeks. The required hospitalization after ureteroscopy was on average 4.7 days. No serious operative and postoperative complications were noticed.

CONCLUSION(S): Ureteroscopy -minimally invasive, effective and comparatively safe method of treatment for complicated ureterolithiasis. This may be second - line treatment of ureteral stones after extracorporeal lithotripsy and even the choice of first line of treatment in some cases. An experience of surgeon is very definitive.

PMC Identifier

12556628 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=12556628>]

Institution

(Silinskas, Janusonis, Uktveris, Venckus, Joniskis, Zaicev, Perkauskas, Jocys, Kukulskis)

Department of Urology, Klaipeda Hospital, Lithuania.

Year of Publication

2002

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934.

Therapeutic advantages of rigid transurethral ureteroscopy in ureteral lithiasic pathology: retrospective study of 735 cases. Ventajas terapeuticas de la ureterosopia transuretral rigida en la patologia litiasica ureteral: estudio retrospectivo de 735 casos <Ventajas terapeuticas de la ureterosopia transuretral rigida en la patologia litiasica ureteral: estudio retrospectivo de 735 casos.>

Serrano Pascual A., Fernandez Fernandez E., Burgos Revilla F.J., Platas Sancho A., Diez-Yanguas Iza J., Paramo de Santiago P., Lovaco Castellano F.

Embase

Archivos espanoles de urologia. 55(4) (pp 405-421; discussion 421-422), 2002. Date of Publication: May 2002.

[Review]

AN: 35509658

OBJECTIVE: To present the results achieved by rigid transurethral ureteroscopy for the management of ureteral calculi over a period of 10 years.

METHOD(S): From January 1991 to November 2000, 735 rigid transurethral ureteroscopy procedures for ureteral calculi were performed in our Lithotripsy Unit. The rigid ureteroscopes utilized ranged from 9.5-11.5 F. There was a higher prevalence of male patients (63%). The mean age was 49.9 years. Calculi were more frequently localized in the pelvic ureter (74.2%). The mean maximum diameter of the calculi was 9.6 mm and caused moderate to severe uropathy in 78.6% of the cases and functional impairment in 3.7% of the cases. After performing ureteroscopy, a double-J catheter was left indwelling in 65.8% of the patients. The patients were discharged from hospital usually 12-18 h after the endoscopic procedure.

RESULT(S): Of the 735 ureteroscopies performed, satisfactory results were achieved in 676 cases (92%); stone resolution was not achieved in 59 cases. For complete resolution of the calculi, mechanical or electrokinetic fragmentation was used in a high proportion of patients (56.3%). Removal of the stone or stone fragments was mainly by forceps (79.7%); the Dormia basket was used in 18.2% of the cases. The complications occurred during or immediately after the procedure and were minor (10.7%), although there were 3 patients with major complications (2 ureteral eversion and one case of ureteral avulsion).

CONCLUSION(S): In our view, rigid transurethral ureteroscopy is a useful, safe and efficient technique in the treatment of calculi in the pelvic ureter, and in selected cases of calculi in the sacral or lumbar level, after failed ESWL. Rigid transurethral ureteroscopy achieves excellent resolution and the complications are scanty.

PMC Identifier

12094486 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=12094486>]

Institution

(Serrano Pascual, Fernandez Fernandez, Burgos Revilla, Platas Sancho, Diez-Yanguas Iza, Paramo de Santiago, Lovaco Castellano) Unidad de Litotricia, URSA, Madrid, Espana.

Year of Publication

2002

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Link to the External Link Resolver:

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935.

Comparative investigations on the retrieval capabilities of various baskets and graspers in four ex vivo models.

Ptashnyk T., Cueva-Martinez A., Michel M.S., Alken P., Kohrmann K.U.

Embase

European Urology. 41(4) (pp 406-410), 2002. Date of Publication: 01 Apr 2002.

[Article]

AN: 35333937

Objectives: The increasing application of ureterorenoscopy for the treatment of urolithiasis has produced a myriad of different help-tools for stone retrieval. In this study, we compared the retrieval capabilities of different baskets and graspers in ex vivo models and attempted to find the most appropriate tool for stone extraction considering the location and size of stone, number of stones and potential harm to urinary tract tissue.

Method(s): We created four different ex vivo models with porcine kidneys and ureters and natural human stones: (1) single ureteral stone (4 mm); (2) single impacted ureteral stone (6 mm); (3) Steinstrasse; (4) single lower-pole stone (5 mm). With the aid of four baskets of different design (flat-wire basket Segura and Nitinol basket Zerotip, helical Gemini, and Parachute) and three graspers (two-prong, three-prong Tricep, and Nitinol grasper Graspit) we performed repeated stone extraction 10 times in each model. The time for complete stone removal was calculated.

Macroscopical evaluation of tissue damage was performed after each series. In the Steinstrasse model the frequency of instrument reinsertion into the ureter was also calculated.

Result(s): In the single ureteral stone model, the fastest stone removal was achieved with the two-prong graspers, three-prong graspers and helical basket (20, 26 and 31 s, respectively). Segura and Parachute needed more time (55 and 86 s, respectively). Impacted stones were removed fastest with the two- and three-prong graspers (38 and 52 s, respectively), Segura and Gemini were slower (89 and 114 s, respectively). The Steinstrasse was cleared fastest by the helical basket with the lowest frequency of endoscope reinsertion (66 s, 1.4 reinsertion). The Segura, 149 s with 3.2 reinsertion was needed for the same procedure. With the Parachute and two-prong graspers 163 s, 1.8 reinsertion and 261 s, 4.6 reinsertion were needed, respectively. During postprocedural macroscopical evaluation of uretral tissue, the Parachute basket and three-prong graspers demonstrated the highest risk of mucosal and muscle damage. In the lower-pole kidney model, the poor deflectability of the ureterorenoscope prevented access to the lower-pole with the two- and three-prong graspers. There was no significant difference in stone retrieval time between the remaining Nitinol basket Zerotip and Nitinol grasper Graspit (87 and 61 s, respectively). The number of failures was 4/10 for Zerotip and 5/10 for Graspit. No significant mucosal damage was noted with these tools.

Conclusion(s): Our ex vivo models demonstrated that the design of graspers and baskets affects the time of stone retrieval in different situations and causes the various grades of tissue damage.

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PMC Identifier

12074812 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=12074812>]

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Embase

Institution

(Ptashnyk, Cueva-Martinez, Michel, Alken, Kohrmann) Department of Urology, Klinikum Mannheim GGmbH, D-68135 Mannheim, Germany

Publisher

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Year of Publication

2002

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936.

Bare naked baskets: Ureteroscope deflection and flow characteristics with intact and disassembled ureteroscopic nitinol stone baskets.

Landman J., Monga M., El-Gabry E.A., Rehman J., Lee D.I., Bhayani S., Sundaram C.P., Clayman R.V.

Embase

Journal of Urology. 167(6) (pp 2377-2379), 2002. Date of Publication: 2002.

[Article]

AN: 34533129

Purpose: Lower pole renal access during flexible ureterorenoscopy is often limited by the active deflection capabilities of the ureteroscope. Deterioration in the deflection and flow capabilities of ureteroscopes occurs with the passage of instrumentation through the working channel. We performed in vitro evaluation of a novel technique using unsheathed nitinol baskets to minimize the deterioration in deflection and maximize the irrigant flow associated with instrument passage through the working channel during flexible ureterorenoscopy.

Material(s) and Method(s): Alterations in the irrigant flow and active deflection of 4 ureteroscopes from different manufacturers were evaluated. Each ureteroscope was evaluated with an empty working channel, and then with sheathed and unsheathed 2.2, 3 and 3.2Fr (Cook Urological, Inc., Indianapolis, Indiana), 2.4 and 3Fr (Microvasive Urology, Natick, Massachusetts) nitinol baskets in the working channel.

Result(s): With all baskets tested and in all ureteroscopes the deterioration in active deflection and irrigant flow was improved with the unsheathed baskets. The disassembled basket within the working channel allowed an additional 15 to 20 degrees of active deflection. In addition, the disassembled basket allowed for a 2 to 30-fold increase in irrigant flow compared with an intact basket.

Conclusion(s): The combination of improved deflection and irrigant flow with this technique may improve ureteroscopic access to lower pole renal calculi.

PMC Identifier

11992041 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=11992041>]

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Embase

Institution

(Landman, Monga, El-Gabry, Rehman, Lee, Bhayani, Sundaram, Clayman) Department of Radiology, Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, MO, United States (Landman, Monga, El-Gabry, Rehman, Lee, Bhayani, Sundaram, Clayman) Department of Urologic Surgery, University of Minnesota, Minneapolis, MN, United States

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Year of Publication

2002

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937.

Assessment of basic endoscopic performance using a virtual reality simulator.

Wilhelm D.M., Ogan K., Roehrborn C.G., Cadeddu J.A., Pearle M.S.

Embase

Journal of the American College of Surgeons. 195(5) (pp 675-681), 2002. Date of Publication: 01 Nov 2002.

[Article]

AN: 35285402

BACKGROUND: The objective of this study was to evaluate the effect of supervised training using a state-of-the-art virtual reality (VR) genitourinary endoscopy simulator on the basic endoscopic skills of novice endoscopists. STUDY DESIGN: We evaluated 21 medical students performing an initial VR case scenario (pretest) requiring rigid cystoscopy, flexible ureteroscopy with laser lithotripsy, and basket retrieval of a proximal ureteral stone. All students were evaluated with objective parameters assessed by the VR simulator and by two experienced evaluators using a global rating scale. Students were then randomized to a control group receiving no further

training or a training group, which received five supervised training sessions using the VR simulator. All students were then evaluated again in the same manner using the same case scenario (posttest).

RESULT(S): Comparing the results of pre- and posttests, no major differences were demonstrated for any variable in the control group. In the trained group, posttest results revealed statistically significant improvement from baseline in the following parameters: total procedure time ($p = 0.002$), time to introduce a ureteral guidewire ($p = 0.039$), self-evaluation ($p < 0.001$), and evaluator assessment ($p < 0.001$). Comparing the posttest results of the control and trained arms, we found significantly better posttest scores in the trained group for the following parameters: ability to perform the task ($p = 0.035$), overall performance ($p = 0.004$), and total evaluator score ($p = < 0.001$).

CONCLUSION(S): Students trained on the VR simulator demonstrated statistically significant improvement on repeat testing, but the control group showed no improvement. Endourologic training using VR simulation facilitates performance of basic endourologic tasks and might translate into better performance in the operating room. © 2002 by the American College of Surgeons.

PMC Identifier

12437255 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=12437255>]

Status

Embase

Institution

(Wilhelm, Ogan, Roehrborn, Cadeddu, Pearle) Department of Urology, The University of Texas Southwestern Medical Center at Dallas, Dallas, TX, United States (Wilhelm, Ogan, Roehrborn, Cadeddu) The Southwestern Center for Minimally Invasive Surgery, The University of Texas Southwestern Medical Center at Dallas, Dallas, TX, United States

(Pearle) Department of Urology, The University of Texas Southwestern Medical Center at Dallas, 5323 Harry Hines Blvd, Dallas, TX 75390-9110, United States

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Year of Publication

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938.

Rigid ureteroscopy for diagnosis and treatment of ureteral calculi during pregnancy.

Lemos G.C., El Hayek O.R., Apezato M.

Embase

International Braz J Urol. 28(4) (pp 311-315), 2002. Date of Publication: July/August 2002.

[Article]

AN: 36322435

Objective: To evaluate ureteroscopy as a treatment option for women presenting ureteral calculi during pregnancy.

Material(s) and Method(s): Eighteen pregnant patients presenting renal colic and indication of surgical treatment for ureteral calculi were analyzed. Patients were 20 to 34 years old (medium = 28), and the gestation period ranged from 12 to 34 weeks (medium = 18). Lumbar pain was present in 14 patients, and 4 had diffuse abdominal pain. Four patients were febrile in the occasion of the examination. Thirteen patients presented microscopic hematuria, 8 leucocyturia, and 4 positive urine culture. The stone was detected by ultrasonography (US) in 12 patients. Magnetic resonance imaging (MRI) was performed in 2 cases, and did not demonstrate calculi. The stone location was: 1 in the superior ureter (pregnancy of 15 weeks), 4 in the medium ureter (pregnancy of 12, 15, 18 and 20 weeks), 12 in the inferior ureter, and 1 was not determined. The surgical indication was difficult pain control, fever, and presence of uterine contractions.

Result(s): Double-J insertion, as single treatment, was possible in 4 patients and it was kept in place for up to 2 weeks after delivery. Among the patients submitted to ureteroscopy, the calculi retrieval was always possible, except in 1 case where the calculus was not located by US, MRI or ureteroscopy. In 2 patients, the ultrasonic lithotripter was used and in 11 the stone was removed intact with a basket. There were no complications due to the procedure and all pregnancies were carried to full term.

Conclusion(s): Rigid ureteroscopy for extraction of ureteral calculi during pregnancy is efficient and safe.

Status

Embase

Institution

(Lemos, El Hayek, Apezato) Albert Einstein Jewish Hospital, Av. Albert Einstein 623/sala 1313, 05651-901 Sao Paulo, SP, Brazil

Publisher

Brazilian Society of Urology (Rua Bambina 153, Rio de Janeiro, RJ 22251-050, Brazil)

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939.

Flank position ureterorenoscopy: New positional approach to aid in retrograde caliceal stone treatment.

Herrell S.D., Buchanan M.G.

Embase

Journal of Endourology. 16(1) (pp 15-18), 2002. Date of Publication: 2002.

[Conference Paper]

AN: 34215521

Background and Purpose: Clearance of lower pole stones and complex maneuvers such as basket repositioning remain challenging in ureteroscopic treatment of caliceal stone burdens. We describe the initial use of flank position ureteroscopy (FPU) with modifications to aid in the treatment of complex caliceal urolithiasis. We hypothesized that gravitational force acting on caliceal stones and fragments during holmium laser treatment would result in fragments being repositioned into the dependent renal pelvis, allowing enhanced treatment.

Patients and Methods: Eleven patients with complex upper tract stone disease (aggregate stone burden 1.5-5 cm) were treated using FPU. Patients were positioned with the stone-containing side superior. Flexible cystoscopy followed by flexible ureterorenoscopy and intracorporeal lithotripsy were performed. We utilized several modifications of the technique, including a

radiolucent table and rotational C-arm fluoroscopy unit. Once all stones and particles fell into the dependent renal pelvis, additional laser fragmentation was simple.

Result(s): We observed the expected advantage of gravitational drainage of particles and stone into the renal pelvis during procedures. In many cases, fragments passed partially down the ureter during treatment. Basket repositioning of stones was not necessary. One complication, collecting system perforation during access, was treated with stent placement and successful delayed FPU. Seven patients were stone free at follow-up. Four patients with stone burdens >3 cm had approximately 80% stone burden reduction, but residual asymptomatic lower-pole particles (2-6 mm) remained, with several clearing with a secondary procedure.

Conclusion(s): The use of FPU for the performance of complex renal stone treatment is a useful aid. Further refinement and comparison with standard technique is ongoing.

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11890443 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=11890443>]

Status

Embase

Institution

(Herrell, Buchanan) Division of Urologic Surgery, Univ. of Kansas Medical Center, 3901 Rainbow Blvd. Sudler 5, Kansas City, KS 66160-7390, United States

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Year of Publication

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940.

The effect of bench model fidelity on endourological skills: A randomized controlled study.

Matsumoto E.D., Hamstra S.J., Radomski S.B., Cusimano M.D.

Embase

Journal of Urology. 167(3) (pp 1243-1247), 2002. Date of Publication: 2002.

[Article]

AN: 34132063

Purpose: Complex skills, such as ureteroscopy and stone extraction, are increasingly taught to novice urology trainees using bench models in surgical skills laboratories. We determined whether hands-on training improved the performance of novices more than those taught only by a didactic session and whether there was a difference in the performance of subjects taught on a low versus a high fidelity model.

Material(s) and Method(s): We randomized 40 final year medical students to a didactic session or 1 of 2 hands-on training groups involving low or high fidelity bench model practice. Training sessions were supervised by experienced endourologists. Testing involved removal of a mid ureteral stone using a semirigid ureteroscope and a basket. Blinded examiners tested subjects before and after training. Performance was measured by a global rating scale, checklist, pass rating and time needed to complete the task.

Result(s): There was a significant effect of hands-on training on endourological performance ($p < 0.01$). With respect to bench model fidelity the low fidelity group did significantly better than the didactic group ($p < 0.05$). However, no significant difference was found between the high and low fidelity groups ($p > 0.05$). The low fidelity model cost Canadian \$20 to produce, while the high fidelity model cost Canadian \$3,700 to purchase.

Conclusion(s): Hands-on training using bench models can be successful for teaching novices complex endourological skills. A low fidelity bench model is a more cost-effective means of teaching ureteroscopic skills to novices than a high fidelity model.

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11832706 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=11832706>]

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Institution

(Matsumoto, Hamstra, Radomski, Cusimano) Department of Surgery, University of Toronto, St. Michael's Hospital, Toronto, Ont., Canada

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941.

Bare naked baskets: Optimizing ureteroscopic stone extraction.

Bhayani S.B., Monga M., Landman J., Clayman R.V.

Embase

Urology. 60(1) (pp 147-148), 2002. Date of Publication: 2002.

[Conference Paper]

AN: 34722966

Baskets placed through the working channels of flexible ureteroscopes limit mobility and irrigant flow. We describe a new technique to minimize these limitations. An unsheathed "bare naked" basket affords enhanced ureteroscopic efficacy by limiting obstruction of the working channel. We have used the technique clinically to treat stones in difficult locations successfully and to remove fragments of calculi after ureteroscopic lithotripsy. © 2002, Elsevier Science Inc.

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Status

Embase

Institution

(Bhayani, Landman) Division of Urology (Surgery), Washington University School of Medicine, St. Louis, MI, United States (Monga) Department of Urologic Surgery, University of Minnesota School of Medicine, Minneapolis, MN, United States

(Clayman) Department of Urology, University of California, Irvine, School of Medicine, Orange, CA, United States

(Clayman) University of California, Irvine, Medical Center, 101 The City Drive, Orange, CA 92868, United States

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942.

Flexible ureterorenoscopy for the treatment of lower pole calyx stones: Influence of different lithotripsy probes and stone extraction tools on scope deflection and irrigation flow.

Michel M.S., Knoll T., Ptaschnyk T., Kohrmann K.U., Alken P.

Embase

European Urology. 41(3) (pp 312-317), 2002. Date of Publication: 01 Mar 2002.

[Article]

AN: 35303431

The 7.5 and 9.0 F flexible ureterorenoscopes are used widely in endourology. These scopes, along with new available tools and probes, enable intrarenal ureteroscopic access to renal stones in the lower pole. Following individual clinical experiences the infundibulopelvic angle has to be respected for the selection of different scopes, tools and probes. The aim of this study was to determine the influence of different scopes, tools and probes on the angle of the active and passive flexion of the flexible ureterorenoscope. The angles of the active and passive flexion and maximum irrigation flow of different flexible ureterorenoscope (9.0 F Wolf, 7.5 F Olympus, 7.5 F Storz) were measured repeatedly in vitro using nine different inserted tools and/or probes. In addition, the maximum allowing for easy passage of the nine different tools/probes through the channel of the scope were measured. The Olympus scope without working instrument present, allows for the greatest deflection. The flexible Lithoclast, the non-nitinol baskets, and the 365 mum laser probes significantly inhibit the deflection of all scopes. The greatest deflection with inserted working tool was possible using the Wolf and Storz scopes. Both nitinol tools as well as the 200 mum laser probe had only minimal influence on the deflection. The 200 mum laser probe reduces the irrigation flow from 50 to 28 ml/min. In contrast, the baskets reduce the irrigation flow from 50 to 2 ml/min. There are significant differences of the active and passive flexion depending on the ureterorenoscopes itself and the different tools. In order to perform a successful flexible

ureterorenoscopic stone treatment in the lower pole, the inhibition of the flexion of the different scopes together with the individual infundibulopelvic angle must be respected when selecting different tools and probes. © 2002 Elsevier Science B.V. All rights reserved.

PMC Identifier

12180234 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=12180234>]

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Institution

(Michel, Knoll, Ptaschnyk, Kohrmann, Alken) Department of Urology, University Hospital
Mannheim, 68135 Mannheim, Germany

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Year of Publication

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943.

Techniques to maximize flexible ureteroscope longevity.

Pietrow P.K., Auge B.K., Delvecchio F.C., Silverstein A.D., Weizer A.Z., Albala D.M., Preminger G.M.

Embase

Urology. 60(5) (pp 784-788), 2002. Date of Publication: 01 Nov 2002.

[Article]

AN: 35300337

Objectives. To assess methods to improve the longevity and durability of flexible ureteroscopes by using the ureteral access sheath, 200-mum holmium laser fiber, and nitinol baskets or graspers during routine ureteroscopic procedures. Despite adequate advances in fiberoptics and

endoscope design, the decreased size of currently available flexible ureteroscopes makes damage inevitable after repeated use. However, new auxiliary tools may be able to enhance ureteroscope durability. Methods. The indications for performing flexible ureteroscopy were proximal ureteral stones (n = 32), renal calculi (n = 59), treatment of upper tract transitional cell carcinoma (n = 3), evaluation of hematuria or filling defect (n = 7), and treatment of ureteral strictures or ureteropelvic junction obstruction (n = 8). Using four new 7.5F flexible ureteroscopes, we prospectively evaluated the number of passes of each ureteroscope until more than 20 optical fibers were broken, more than a 25degree loss of deflection in either direction had occurred, or the instrument sustained injury requiring repair by the manufacturer. Results. One hundred nine flexible ureteroscopic procedures (average 27.5 procedures per instrument; range 19 to 34) were performed with the four new flexible ureteroscopes before being sent for repair. Adjuncts to reduce scope damage during these procedures were the use of the ureteral access sheath (n = 109), nitinol devices allowing lower pole stone retrieval (n = 27), and the 200-mum holmium laser fiber for stone fragmentation, tumor ablation, and incision of ureteropelvic junction/ureteral stenoses (n = 91). The average number of passes until more than 20 optical fibers were broken was 15.3 (range 12 to 20), until more than a 25degree loss of deflection occurred was 50.3 (range 42 to 66), or until the scope required repair was 66.7 (range 46 to 82). Conclusions. Flexible ureteroscopy will be used increasingly to manage upper urinary tract pathologic findings. Historically, the number of procedures performed before a flexible ureteroscope requires repair averaged 6 to 15. By incorporating the new ureteroscopic accessories, such as nitinol devices, a ureteral access sheath, and the 200-mum holmium laser fiber into common practice, one can reduce the strain on these fragile 7.5F endoscopes, thereby maximizing their longevity. © 2002, Elsevier Science Inc.

PMC Identifier

12429296 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=12429296>]

Status

Embase

Institution

(Pietrow, Auge, Delvecchio, Silverstein, Weizer, Albala, Preminger) Comprehensive Kidney Stone Center, Division of Urology, Department of Surgery, Duke University Medical Center, Durham, NC, United States (Preminger) Division of Urology, Duke University Medical Center, White Zone, Room 1572D DUMC Box 3167, Durham, NC 27710, United States

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Year of Publication

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944.

Ureteroscopic treatment of lower pole calculi: Comparison of lithotripsy in situ and after displacement.

Schuster T.G., Hollenbeck B.K., Faerber G.J., Wolf Jr. J.S.

Embase

Journal of Urology. 168(1) (pp 43-45), 2002. Date of Publication: 2002.

[Article]

AN: 34640781

Purpose: Ureteroscopic management is a viable option for lower pole calculi less than 2 cm.

Recently a technique was described to displace the calculus into a more accessible calix using a nitinol basket or grasper before lithotripsy. We compared the efficacy and safety of this technique with in situ treatment of small and intermediate lower pole calculi.

Material(s) and Method(s): We retrospectively reviewed the records of 95 ureteroscopy cases performed at our institution from January 1997 through August 2001 for renal calculi located only in the lower pole. Preoperative patient characteristics, stone size, operative details, complications and outcomes were compared for calculi treated in situ and those displaced before treatment.

Result(s): Adequate follow up was available on 78 patients. Patients in the displacement group were statistically older, more often had a preoperative indwelling ureteral stent and had a mean operative time that was 16 minutes longer ($p = 0.04$). Average stone diameter in the in situ and displacement groups was 8 and 10.3 mm., respectively ($p = 0.04$). In patients with radiographic followup greater than 1 month complete success was obtained for 77% of stones 1 cm. or less treated in situ versus 89% treated with displacement first ($p = 0.43$). For calculi greater than 1 cm. complete success was obtained for 2 of the 7 (29%) treated in situ versus all 7 (100%) treated with displacement ($p = 0.005$).

Conclusion(s): When treating lower pole calculi 1 to 2 cm. via ureteroscopy, a higher success rate can be obtained with displacement into a more accessible calix before treatment.

PMC Identifier

12050489 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=12050489>]

Status

Embase

Institution

(Schuster, Hollenbeck, Faerber, Wolf Jr.) Department of Urology, University of Michigan, Ann Arbor, MI, United States

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Year of Publication

2002

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945.

Single upper-pole percutaneous access for treatment of ≥ 5 -cm complex branched staghorn calculi: Is shockwave lithotripsy necessary?.

Wong C., Leveillee R.J.

Embase

Journal of Endourology. 16(7) (pp 477-481), 2002. Date of Publication: 2002.

[Article]

AN: 35147219

Background and Purpose: Percutaneous nephrolithotomy for staghorn calculi is reported to have a residual stone rate of 28%, while shockwave lithotripsy alone results in residual stones in approximately 50% of cases. Combination therapy, sandwich therapy, and multiple percutaneous accesses have also been advocated for staghorn stones. We believe these stones can often be removed with a staged procedure via a single upper-pole percutaneous access using flexible nephroscopy and the holmium:YAG laser. Our experience is reviewed.

Patients and Methods: The hospital records of patients having a cumulative stone burden ≥ 5 cm who underwent percutaneous nephrolithotripsy (PCNL) for a single complex staghorn calculus were reviewed. There were 15 male and 34 female patients having 45 complete and 7 partial staghorn calculi constituting a mean stone burden of 6.7 cm (range 5.0-10.0 cm). A calix was punctured that would provide access to the majority of the involved calices. Thirty-five renal units were approached through a single upper-pole percutaneous access, and four and six renal units were accessed through single middle or lower-pole calices, respectively. The remaining seven renal units were treated with multiple percutaneous accesses.

Result(s): In the renal units having only a single access, a mean of 1.6 (range 1-3) procedures were required to achieve stone-free status. The mean operating room time was 2.9 hours (range 2.0-3.5 hours). For the second PCNL, the mean operating room time was 63 minutes (range 30-90 minutes). Two patients (two renal units) had residual stones < 1 cm in diameter. One refused additional surgery, and the other is awaiting further treatment. The mean estimated blood loss was 238 mL (range 50-800 mL), with only one procedure (2.2%) necessitating a blood transfusion. One (2.8%) hydrothorax developed among the 35 upper-pole puncture cases. Six patients had transient oral temperature readings $> 101^{\circ}\text{F}$ with negative blood cultures. Other early complications included single cases of leg cellulitis, atrial fibrillation, and noncardiac chest pain. There were no delayed surgical complications. Patients were discharged from the hospital a mean 2 days (range 1-10 days) after the first PCNL.

Conclusion(s): Use of flexible nephroscopy with holmium:YAG laser lithotripsy and Nitinol basket stone extraction has allowed us to render staghorn-containing renal units stone free in a mean of 1.6 procedures. Of the 45 renal units treated through a single percutaneous access, 43 (95%) were rendered stone free. The holmium:YAG laser appears to be a safe lithotrite for the kidney, as no complications occurred from its use.

PMC Identifier

12396440 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=12396440>]

Status

Embase

Institution

(Wong, Leveillee) Dept. of Urology, University of Miami, 1400 NW 10th Avenue, Miami, FL 33126, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2002

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946.

Donor-gifted allograft urolithiasis: Early percutaneous management.

Lu H.-F., Shekarriz B., Stoller M.L.

Embase

Urology. 59(1) (pp 25-27), 2002. Date of Publication: 2002.

[Article]

AN: 34059300

Objectives. To describe our successful early management of donor-gifted nephrolithiasis by percutaneous nephrolithotomy. Donor-gifted nephrolithiasis is a rare and frustrating complication of renal transplantation. In the past, initial conservative management with relief of obstruction and shock wave lithotripsy has been recommended. Methods. We treated 3 cases of donor-gifted cadaveric kidney transplant stones by a percutaneous approach 1 to 2 months postoperatively. Two patients presented with hydronephrosis-associated renal deterioration and febrile urinary tract infection, and the third was diagnosed incidentally on routine postoperative ultrasonography. Results. Percutaneous nephrolithotomy was performed with ultrasound stone fragmentation after initial nephrostomy tube drainage in 1 patient. In the second patient, the stone was successfully removed in a basket in an antegrade fashion. The third patient's ureteral stone was successfully removed by antegrade ureteroscopy. Postoperatively, no residual stones were noted on nephrostography, and renal function returned to normal. Conclusions. Post-transplant renal calculi can be managed successfully by percutaneous techniques in the early postoperative period and renal function can be salvaged. Pretransplant renal sonography may be considered to limit donor-gifted calculi. Copyright © 2002 Elsevier Science Inc.

PMC Identifier

11796274 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=11796274>]

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Embase

Institution

(Lu, Shekarritz, Stoller) Department of Urology, University of California, San Francisco, School of Medicine, San Francisco, CA, United States (Lu) Department of Urology, China Medical College Hospital, Taichung City, Taiwan (Republic of China)

(Stoller) Department of Urology, U-575, University of California, San Francisco, School of Medicine, San Francisco, CA 94143-0738, United States

Publisher

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Year of Publication

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947.

Citric acid (solution R) irrigation in the treatment of refractory infection (struvite) stone disease: Is it useful?.

Joshi H.B., Kumar P.V.S., Timoney A.G.

Embase

European Urology. 39(5) (pp 586-590), 2001. Date of Publication: 2001.

[Article]

AN: 32678976

Objective: Citric acid, in varying concentrations, has been used in the dissolution treatment of struvite renal calculi. Solution R (Uro-trainer), which contains 6% citric acid, is a solution licensed for use in the management of struvite stone disease in the UK. We report our experience.

Method(s): 23 kidneys in 22 patients (10 male and 12 female patients, mean age 45, range 15-60 years) underwent solution R irrigation following debulking of the stone with percutaneous nephrolithotomy (n = 20), ureteroscopy and shock wave lithotripsy (n = 2) combined with open procedures (n = 4) between 1994 and 1998. The original stone configuration consisted of 14 staghorn, 4 partial staghorn and 5 large burden stones. Irrigation was performed through a

nephrostomy tube (n = 20) or in a retrograde fashion (n = 3) using a closed infusion pump system (40 ml/h). The response to treatment was checked using a nephrostogram and/or plain X-ray.

Result(s): In 6 (26%) kidneys, after an average duration of 2 (1-5) days, irrigation had to be abandoned due to loin pain, leak or sepsis. The average duration of irrigation was 6.4 (1-20) days. At the end of irrigation, a total of 4 (17.4%) kidneys had complete radiographic clearance, while the stone was reduced to calyceal dust in 3 (13%). Partial response was seen in 11 (47.8%) and no response in 5 (21.8%) kidneys. Following additional alternative intervention(s) in 6 (26%) kidneys (4 with partial and 2 with no response) further clearance was achieved in 3 (13%) and calyceal dust status in 3 (13%). The response was better if the stone was reduced to less than 10 mm prior to irrigation. At the mean follow-up of 2.44 (1-4) years, of 13 kidneys with stone clearance or calyceal dust, 9 suffered recurrence or re-growth, 5 of which required further interventions. Only 4 (17.4%) of 23 kidneys remained stone free.

Conclusion(s): In patients with complex stone disease, adjuvant solution R irrigation can reduce the stone burden. There is a considerable potential for side effects necessitating close monitoring for sepsis and electrolyte abnormalities. However, the overall success rate for solution R is limited. Copyright © 2001 S. Karger AG, Basel.

PMC Identifier

11464042 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=11464042>]

Status

Embase

Institution

(Joshi, Kumar, Timoney) Bristol Urological Institute, Southmead Hospital, Bristol, United Kingdom
(Timoney) Southmead Hospital, Westbury-on-Trym, Bristol BS10 5NB, United Kingdom

Publisher

Elsevier (P.O. Box 211, Amsterdam 1000 AE, Netherlands)

Year of Publication

2001

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948.

Ureteroscopic management of lower-pole renal calculi: Technique of calculus displacement.

Auge B.K., Dahm P., Wu N.Z., Preminger G.M.

Embase

Journal of Endourology. 15(8) (pp 835-838), 2001. Date of Publication: 2001.

[Article]

AN: 33055029

Purpose: We review our technique of ureteroscopic management of lower pole renal calculi with Nitinol basket displacement and holmium laser stone fragmentation.

Method(s): Lower pole calculi are identified with a 7.5F flexible ureteroscope. In patients in whom the laser fiber reduces ureteroscopic deflection, precluding reentry into the lower pole, a Nitinol basket or grasper is used to displace the calculi into an upper pole calix for easier fragmentation.

Result(s): The Nitinol device can be passed into the lower pole through the fully deflected ureteroscope without any loss of deflection. Irrigation is significantly reduced by the basket, but this factor does not impede stone retrieval.

Conclusion(s): Ureteroscopic management of lower pole stones is a reasonable alternative to SWL or percutaneous nephrolithotomy in low-volume stone disease. If the stone cannot be fragmented in situ, Nitinol basket capture through a fully deflected ureteroscope into a less dependent position facilitates stone fragmentation.

PMC Identifier

11724125 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=11724125>]

Status

Embase

Institution

(Auge, Dahm, Wu, Preminger) Division of Urology, Box 3167, Duke University Medical Center, Durham, NC 27710, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2001

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Link to the External Link Resolver:

[SFX](#)

949.

Ureterorenoscopy during pregnancy. Ureterorrenoscopia durante el embarazo

<Ureterorrenoscopia durante el embarazo.>

Banon V.J., Gomez-Gomez G., Guardiola A., Server G., Rodriguez-Hernandez J.R., Perez-Albacete M.

Embase

Clinica e Investigacion en Ginecologia y Obstetricia. 27(3) (pp 76-79), 2000. Date of Publication: 2000.

[Article]

AN: 30189491

The objective of this work is to show the diagnostic and therapeutic use of ureterorenoscopy for urolithiasis during pregnancy. To carry out this study, 8 pregnant women were selected over a period of 4 years. All of them were in the second and third trimester of pregnancy and presented symptoms of refractory hydronephrosis with the usual conservative treatment. The procedure was carried out on all women using epidural anaesthesia. A rigid 9.5 F ureterorenoscope was used and dilatation of the urethral meatus was not required in 5 patients. The calculus were removed with a Dormia basket in 4 cases and with extracting forceps in the other 4 patients. There were no urological or obstetric complications in any of the cases. Ureterorenoscopy is a safe procedure which can be used during pregnancy to diagnose and remove urethral calculus when conservative measures have failed.

Status

Embase

Institution

(Banon, Gomez-Gomez, Guardiola, Server, Rodriguez-Hernandez, Perez-Albacete) Servicios de Urologia, Hosp. Universitario Virgen Arrixaca, Murcia, Spain

Publisher

Ediciones Doyma, S.L. (Travesera de Gracia 17-21, Barcelona 08021, Spain)

Year of Publication

2000

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950.

Use of the holmium: YAG laser for the impacted stone basket.

Teichman J.M.H., Kamerer A.D.

Embase

Journal of Urology. 164(5) (pp 1602-1603), 2000. Date of Publication: 2000.

[Article]

AN: 30781711

Purpose: During ureteroscopic basketing of ureteral calculi a stone may become engaged in the basket and the basket impacted in the ureter. We describe an endoscopic technique of managing the impacted basket and stone.

Material(s) and Method(s): The ureteroscope is back loaded off of the basket, and passed into the ureter beside the basket and stone. The holmium:YAG laser is used to irradiate a basket wire, fracturing the wire and releasing the stone. The basket is removed and the stone managed by holmium:YAG lithotripsy.

Result(s): We successfully treated 3 consecutive patients with this technique. No injuries were observed.

Conclusion(s): The holmium:YAG laser may be used to free an impacted stone basket containing a ureteral calculus.

PMC Identifier

11025714 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=11025714>]

Status

Embase

Institution

(Teichman, Kamerer) Division of Urology, University of Texas Health Science Center, San Antonio, TX, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

2000

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951.

Removal of the entrapped basketed ureteral calculus: A novel technique.

Low R.K., George D.

Embase

Journal of Urology. 163(6) (pp 1863), 2000. Date of Publication: 2000.

[Article]

AN: 30366757

PMC Identifier

10799203 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=10799203>]

Status

Embase

Institution

(Low, George) Department of Urology, University of California, Sacramento, CA, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

2000

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952.

Nitinol stone retrieval-assisted ureteroscopic management of lower pole renal calculi.

Kourambas J., Delvecchio F.C., Munver R., Preminger G.M.

Embase

Urology. 56(6) (pp 935-939), 2000. Date of Publication: 2000.

[Article]

AN: 30985022

Objectives. Current ureteroscopic intracorporeal lithotripsy devices and stone retrieval technology allow for the treatment of calculi located throughout the intrarenal collecting system. Difficulty accessing lower pole calculi, especially when the holmium laser fiber is used, is often encountered. We retrospectively reviewed our experience with cases in which lower pole renal calculi were ureteroscopically managed by holmium laser fragmentation, either in situ or by first displacing the stone into a less dependent position with the aid of a nitinol stone retrieval device.

Methods. Thirty-four patients (36 renal units) underwent ureteroscopic treatment of lower pole renal calculi between April 1998 and November 1999. Lower pole stones less than 20 mm were primarily treated by ureteroscopic means in patients who were obese, in patients who had a bleeding diathesis, in patients with stones resistant to shock wave lithotripsy, and in patients with complicated intrarenal anatomy, or as a salvage procedure after failed shock wave lithotripsy. Lower pole calculi were fragmented with a 200-mum holmium laser fiber by way of a 7.5F flexible ureteroscope. For those patients in whom the laser fiber reduced the ureteroscopic deflection, precluding re-entry into the lower pole calix, a 3.2F nitinol basket or a 2.6F nitinol grasper was used to displace the lower pole calculus into a more favorable position, allowing easier fragmentation. **Results.** In 26 renal units, routine in situ holmium laser fragmentation was successfully performed. In the remaining 10 renal units, a nitinol device was passed into the lower pole, through the ureteroscope, for stone displacement. Only a minimal loss of deflection was seen. Irrigation was significantly reduced by the 3.2F nitinol basket, but improved with the use of the 2.6F nitinol grasper. This factor did not impede stone retrieval in any of the patients. At 3 months, 85% of patients were stone free by intravenous urography or computed tomography.

Conclusions. Ureteroscopic management of lower pole calculi is a reasonable alternative to shock wave lithotripsy or percutaneous nephrolithotomy in patients with low-volume stone

disease. If the stone cannot be fragmented in situ, nitinol basket or grasper retrieval, through a fully deflected ureteroscope, allows one to reposition the stone into a less dependent position, thus facilitating stone fragmentation. (C) 2000, Elsevier Science Inc.

PMC Identifier

11113736 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=11113736>]

Status

Embase

Institution

(Kourambas, Delvecchio, Munver, Preminger) Comprehensive Kidney Stone Center, Department of Surgery, Duke University Medical Center, Durham, NC, United States (Preminger) Division of Urology, Box 3167, Duke University Medical Center, Durham, NC 27710, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

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953.

Management of entrapped ureteral stone baskets.

Corey O'Connor R., Gerber G.S.

Embase

Techniques in Urology. 6(3) (pp 231-233), 2000. Date of Publication: 2000.

[Article]

AN: 30637889

Entrapped stone baskets can occur and can lead to significant ureteral injury and long-term morbidity. We describe two patients in whom semirigid ureteroscopy was used to facilitate safe removal of impacted baskets from the ureter.

PMC Identifier

10963498 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=10963498>]

Status

Embase

Institution

(Corey O'Connor, Gerber) University of Chicago, Section of Urology/MC 6038, 5841 S. Maryland Avenue, Chicago, IL 60637, United States

Publisher

Lippincott Williams and Wilkins (530 Walnut Street,P O Box 327, Philadelphia PA 19106-3621, United States)

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954.

To stent or not to stent? That is still the question.

Rane A., Cahill D., Lerner T., Saleemi A., Tiptaft R.

Embase

Journal of Endourology. 14(6) (pp 479-481), 2000. Date of Publication: 2000.

[Conference Paper]

AN: 30655576

Background and Purpose: Most patients are stented after ureteroscopy for stone extraction. This practice necessitates a second procedure to remove the stent, with its inherent morbidity. The aim of our study was to determine whether routine stenting of the ureter is really necessary after ureteroscopy.

Patients and Methods: This prospective study evaluated 26 men and 18 women admitted for elective distal ureteral stone fragmentation. The stones ranged in size from 6 mm to 1 cm. Of the

series, 16 patients (10 men) had been stented prior to ureteroscopy. A 9F semirigid ureteroscope was used in 31 cases, and a 7.5F semi-rigid ureteroscope was used in the other 11 cases; there was no need for ureteral orifice dilatation with either ureteroscope. Ballistic intracorporeal lithotripsy was performed in all cases with the Swiss Lithoclast(TM); all stone fragments were retrieved with a 3F helical basket. The patients were followed up as inpatients for 24 hours and reviewed in the clinic 1 week later with a request to report if they felt significant discomfort or loin pain or became feverish.

Result(s): Only one patient (male) had to be readmitted with loin pain. Two others (both women) complained when they attended for follow-up of having had dull lower abdominal pain and some frequency.

Conclusion(s): The low incidence of complications in this preliminary study suggests that routine stenting is not necessary after ureteroscopy. The chief exception to this statement is patients who had a difficult and prolonged stone fragmentation.

PMC Identifier

10954302 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=10954302>]

Status

Embase

Institution

(Rane, Cahill, Lerner, Saleemi, Tiptaft) Department of Urology, Guy's Hospital, St. Thomas Street, London, SE19RT, United Kingdom

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

2000

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955.

The treatment of ureteral lithiasis with a pulsed dye laser. Tratamiento de la litiasis ureteral con laser pulsado colorante <Tratamiento de la litiasis ureteral con laser pulsado colorante.>

Rodrigo Aliaga M., Pontones Moreno J.L., Martinez Jabaloyas J.M., Oliver Amoros F., Broseta Rico E., Boronat Tormo F., Jimenez Cruz J.F.

Embase

Actas urologicas espanolas. 23(1) (pp 28-34), 1999. Date of Publication: Jan 1999.

[Article]

AN: 129406156

PURPOSE: Pulsed dye laser lithotripsy has shown to be an effective and safe procedure for treatment of ureteral calculi. We report our experience. MATERIAL AND METHODS: A total of 1000 patients were treated with pulsed dye laser between January 1990 and February 1996. In 450 patients the procedure was performed under general or regional anaesthesia; the remaining 550 patients were treated with the aid of a mild sedation.

RESULT(S): In the mild sedation group a total of 417 out of 550 patients (75.8%) had their calculi completely cleared (85.6% of effectiveness in women with pelvic lithiasis). Different facts caused the treatment to fail in the remaining patients: severe pain, vagal reaction and technical difficulties. In the anesthesia group the procedure was effective in 346 cases (76.9%). Laser failed to clear calculi in 104 patients in this group due to technical impossibility and persistence of ureteral fragments. Additional treatment options in order to achieve resolution of the calculi were: ESWL, both ESWL and laser, Dormia basket, Zeiss stent, three-prong grasping forceps, ureterolithotomy and nephrectomy. Morbidity was higher in the group treated under anesthesia, being haematuria the most frequent adverse effect.

CONCLUSION(S): We believe that ureteroscopy and laser lithotripsy is an effective, safe and low morbidity procedure for the treatment of ureteral calculi in women with distal calculi. It is often suitable to perform it with mild sedation with the subsequent benefit for both the patient and health care system regarding to cost-effectiveness balance.

PMC Identifier

10089630 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=10089630>]

Institution

(Rodrigo Aliaga, Pontones Moreno, Martinez Jabaloyas, Oliver Amoros, Broseta Rico, Boronat Tormo, Jimenez Cruz) Servicio de Urologia, Hospital Universitario La Fe, Valencia.

Year of Publication

1999

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956.

Retrograde ureteropyeloscopy for lower pole caliceal calculi.

Grasso M., Ficazzola M.

Embase

Journal of Urology. 162(6) (pp 1904-1908), 1999. Date of Publication: December 1999.

[Article]

AN: 29538316

Purpose: Contemporary treatment of lower pole renal calculi includes extracorporeal shock wave lithotripsy, percutaneous nephrostolithotomy and retrograde ureteropyeloscopy. Success rates for shock wave lithotripsy are reduced in this setting, especially for stones greater than 1 cm. and/or in patients with anatomical variants. Percutaneous treatment, although effective, subjects the patient to increased morbidity. We studied the safety and efficacy of retrograde ureteroscopic treatment of lower pole intrarenal calculi.

Material(s) and Method(s): We evaluated 90 stone burdens localized to the lower pole and treated with a small diameter, actively deflectable, flexible ureteropyeloscope and a 200 mu. holmium laser fiber. Stone burdens were classified as group 1-10 or less, group 2-11 to 20 and group 3-greater than 20 mm. in largest diameter. Patients with calculi less than 2.5 cm. were treated as outpatients unless concurrent medical conditions required hospitalization. Larger stones and partial staghorn calculi (group 3) frequently required 2-stage endoscopic procedures with retrograde intrarenal irrigation for 36 hours to clear debris. An acceptable immediate surgical outcome was defined as complete fragmentation reducing the stone burden to dust and 2 mm. or less fragments. Success was defined as clear imaging (that is stone-free) on renal sonography with minimum 3-month followup. Extreme anatomical variants, including a long infundibulum, acute infundibulopelvic angle and a dilated collecting system, were noted and correlated with surgical failures.

Result(s): Endoscopic access and complete stone fragmentation were achieved in 94, 95 and 45% of groups 1, 2 and 3, respectively. After a second treatment the success rate increased to 82% in group 3, with an overall rate of 91%. Of the 19 surgical failures 8 were secondary to inability to access the lower pole and 11 were secondary to inability to render the patient stone-

free. In 2 of the 19 cases infundibular strictures hindered ureteroscopic access. In addition, of the anatomical variants a long lower pole infundibulum was the most statistically significant predictor of failure. Mean operative time ranged from 38 minutes for small to 126 for the largest calculi. There were no major complications. Overall stone-free rates with minimum 3-month followup were 82, 71 and 65% in groups 1, 2 and 3, respectively, and 88, 77 and 81%, respectively, in patients with an acceptable initial surgical outcome (that is excluding those with access failures from analysis).

Conclusion(s): Retrograde ureteropyeloscopy is a safe and effective surgical treatment for lower pole intrarenal calculi.

PMC Identifier

10569534 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=10569534>]

Status

Embase

Institution

(Grasso, Ficazzola) Department of Urology, New York Univ. School of Medicine, New York, NY, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

1999

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957.

Primary endoscopic treatment of ureteric calculi: A review of 378 cases.

Puppo P., Ricciotti G., Bozzo W, Introini C.

Embase

European Urology. 36(1) (pp 48-52), 1999. Date of Publication: 1999.

[Article]

AN: 29265280

Aim of the Study: In the post-ESWL period, ureteroscopy represented the solution giving a second choice in the treatment of ureteral calculi in case of failure of extracorporeal lithotripsy. The aim of this study is to review a wide series of ureteral stones in which ureteroscopy combined with endoscopic lithotripsy can be chosen as the first approach for the treatment of ureteral calculi.

Method(s): Between January 1994 and September 1997, 378 patients underwent ureteroscopy and endoscopic lithotripsy for ureteral stones with a miniscope associated with either a pneumatic or electropneumatic lithotripter. Three different miniscopes were used: Olympus (8 Fr), Wolf (7 Fr) and Circon Acmi (7.7 Fr). 238 patients were male and 140 were female. The stones were localized in the upper tract of the ureter in 62 cases (16.4%), 96 (25.3%) in the mid ureter and 220 (58.3%) in the lower ureter.

Result(s): A complete stone fragmentation with spontaneous expulsion of the fragments occurred in 354 patients (93.6%). In 22 patients (5.8%) the stones were accidentally pushed up and successfully underwent ESWL. In 38 patients (10%) the fragments were completely removed by basket. A single J polyethylene catheter was placed in 21 (5.5%) and a JJ stent in 147 patients (38.8%). The operative time ranged from 10 to 60 min, with an average time span of 32. In 22 cases (5.8%) an iterative ureteroscopy for stenosis or incomplete fragmentation was needed. Five cases (1.3%) of ureteral perforation were successfully treated by JJ stent, and only 1 case of ureteral avulsion (upper ureter) was treated by open surgery. In the attempt of overcoming an ureteral stenosis, we had 1 case (0.2%) of ureteral reimplantation. One patient (0.2%) underwent ureterolithotomy for an extremely narrow stenosis just before the ureteropelvic junction. No relevant complication was recorded in the postoperative period. Patients were dismissed after 14 days (average 1.9). Up until now, no case of postoperative ureteral stricture has been observed, although we were not able to carry out a specific follow-up in all our patients.

Conclusion(s): Ureteroscopy with miniscopes has a high success rate (93.6%) with low morbidity and can be given as a primary approach in the management of ureteral calculi. In the lumbar ureter (especially in women) this technique can represent a good alternative to ESWL in the treatment of obstructing stones (which need stenting) or when the patient asks for a 'one-shot' treatment.

PMC Identifier

10364655 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=10364655>]

Status

Embase

Institution

(Puppo, Ricciotti, Bozzo W, Introini) Department of Urology, Mura delle Cappuccine 14, I-16128
Genova, Italy

Publisher

Elsevier (P.O. Box 211, Amsterdam 1000 AE, Netherlands)

Year of Publication

1999

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958.

A comparison of ureteroscopy to in situ extracorporeal shock wave lithotripsy for the treatment of distal ureteral calculi.

Turk T.M.T., Jenkins A.D.

Embase

Journal of Urology. 161(1) (pp 45-47), 1999. Date of Publication: January 1999.

[Article]

AN: 29422286

Purpose: The optimal treatment for distal ureteral calculi remains controversial. Most urologists offer extracorporeal shock wave lithotripsy (ESWL) or ureteroscopy for stones that require intervention. We present data from our institution on these modalities since 1990.

Material(s) and Method(s): We treated 187 distal ureteral calculi with ESWL (91 cases) on a Dornier HM3 or MFL 5000 lithotripter, or with ureteroscopy (96 cases) using basket extraction with or without pulsed dye laser lithotripsy.

Result(s): Fragmentation and stone-free rates for ESWL were 80 and 73%, respectively, with no complications. For ureteroscopy the stone-free rate was 95% with a 5.2% short-term complication rate and no long-term complications.

Conclusion(s): At our institution ureteroscopy is more efficacious than ESWL for the treatment of distal ureteral calculi.

PMC Identifier

10037364 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=10037364>]

Status

Embase

Institution

(Turk, Jenkins) Department of Urology, University of Virginia, Charlottesville, VA, United States

(Turk) Department of Urology, Loyola University, 2160 S. First Ave., Maywood, IL 60153, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

1999

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959.

Electrokinetic lithotripsy: Safety, efficacy and limitations of a new form of ballistic lithotripsy.

Keeley Jr. F.X., Pillai M., Smith G., Chrisofos M., Tolley D.A.

Embase

BJU International. 84(3) (pp 261-263), 1999. Date of Publication: 1999.

[Article]

AN: 29376170

Objective. To investigate the safety and efficacy of electrokinetic lithotripsy (EKL), a ballistic lithotripter which uses high-energy magnetic fields to propel an impactor to fragment calculi.

Patients and methods. The records and radiographs of 121 patients who underwent ureteroscopy using the EKL for stones in the upper (26), mid (28) or lower (67) ureter were reviewed retrospectively. Ureteroscopy was performed with an 8.5 F semi-rigid ureteroscope, through which a 3 F EKL probe was passed. Results. A total of 148 stones (mean stone size 11.5 mm,

range 6-40) in 121 patients were treated using the EKL. One patient was lost to follow-up. Of 148 stones, 147 (99.3%) were fragmented, including five that had resisted fragmentation with either pulsed-dye laser or electrohydraulic lithotripsy. Despite this, only 45 of 56 patients (80%) with a single stone in the lower ureter were rendered stone-free after a single ureteroscopic procedure. Seven patients in this group (12%) required shock-wave lithotripsy for fragments that had been propelled into the kidney, while four patients (7%) required repeat ureteroscopy for retained ureteric fragments. Complications were limited to minor ureteric perforations in two patients, both of which were treated with a stent. Conclusion. EKL is an inexpensive and reliable endoscopic method which fragments nearly all urinary calculi. Its limitations include the propulsion of fragments and the need to use an offset, semi-rigid ureteroscope. We recommend the use of a basket or graspers to remove fragments of ≥ 4 mm after EKL.

PMC Identifier

10468718 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=10468718>]

Status

Embase

Institution

(Keeley Jr., Pillai, Smith, Chrisofos, Tolley) Scottish Lithotripter Centre, Western General Hospital, Edinburgh, United Kingdom (Keeley Jr.) Bristol Urological Institute, Southmead Hospital, Bristol BS10 5NB, United Kingdom

Publisher

Blackwell Publishing Ltd (9600 Garsington Road, Oxford OX4 2XG, United Kingdom)

Year of Publication

1999

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960.

Retrieval capabilities of different stone basket designs in vitro.

El-Gabry E.A., Bagley D.H.

Embase

Journal of Endourology. 13(4) (pp 305-307), 1999. Date of Publication: May 1999.

[Article]

AN: 29325599

Background and Objective: Several designs of endoscopic stone retrieval baskets are available. Each instrument has special characteristics which can be employed in different locations with different techniques and various effects. In this study, we compared the retrieval capability of five basket designs in two in vitro models.

Material(s) and Method(s): The five baskets were a fiat wire (Segura), Parachute, N-0-tip, and two helical designs. The ability of the baskets to retrieve beads of 4, 6, and 8 mm was compared in two models. Each size was used individually, and four beads of the 4-mm size were also studied. In the first model, single and multiple beads were placed in a cylindrical plastic tube to mimic removal of the stone from the ureter. In single-bead retrieval trials, the basket was opened beyond the bead and withdrawn, whereas with multiple beads, the basket was opened beyond, withdrawn, and closed. Bead engagement and removal was considered a successful retrieval. Three repetitions were performed for each basket and each bead size. In the second model, similar beads were placed in a round- bottom test tube to simulate a stone within a calix. The basket was opened at the base of the tube and closed. The number of beads removed was noted for three repetitions for each basket.

Result(s): All baskets were able to retrieve the 4-, 6-, and 8-mm beads from the cylinder, with the exception of the four- wire helical basket, which failed in two of the three retrieval attempts for the 4- and 6-mm beads, and the double-helical basket, which failed in two of the three retrieval attempts for the 4-mm bead. When four beads 4 mm in size were used, the Parachute and double-helical baskets retrieved all of them within two trials and the N-0-tip and four-wire helical baskets within three trials. The Segura basket failed all trials. In the test tube model, all baskets failed to remove any beads with the exception of the N-0-tip, which was successful in removing a single bead with each positioning.

Conclusion(s): In these in vitro models, it was apparent that the design of the basket affects its ability to retrieve calculi in different situations.

PMC Identifier

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Status

Embase

Institution

(El-Gabry, Bagley) Department of Urology, Thomas Jefferson University, Philadelphia, PA, United States (Bagley) Dept. of Urology, College Building No. 1112, Thomas Jefferson University, 1025 Walnut St., Philadelphia, PA 19107, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

1999

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961.

Ureteroscopic lithoclast lithotripsy: A cost-effective option.

Kok T.P., Ming T.S., Consigliere D.

Embase

Journal of Endourology. 12(4) (pp 341-344), 1998. Date of Publication: August 1998.

[Article]

AN: 28419745

Seventy-four consecutive cases of ureteral stones listed for ureteroscopic lithotripsy were studied prospectively. In all cases, the Wolf 7.5F or 9F ureteroscope was used in conjunction with the Swiss Lithoclast system. Dormia baskets were employed on four occasions to prevent forward propulsion of fragments. Ureteroscopic access to the stones was successful in 70 patients (95%). Lithoclast lithotripsy was successfully applied in 68 patients (92%), with complete fragmentation noted in 62 patients (91%), one requiring two sessions. The 6-week stone-free rate was 96% for these patients. Five patients with partial fragmentation had successful adjuvant SWL. The overall successful fragmentation rate was thus 84% (62 of 74) and 91% (67 of 74) in combination with adjuvant SWL. Cost analysis indicated a three-fold advantage for the Lithoclast over Candela lasertripsy. Ureteroscopic Lithoclast lithotripsy is a cost-effective treatment modality for ureteral stones.

PMC Identifier

9726400 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=9726400>]

Status

Embase

Institution

(Kok, Ming, Consigliere) Section of Urology, Department of General Surgery, Tan Tock Seng Hospital, Singapore (Kok) Mount Alvernia Medical Centre B, #01-11/12, 820 Thomson Road, Singapore 574623, Singapore

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

1998

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962.

Unenhanced helical CT of ureteral stones: A replacement for excretory urography in planning treatment.

Fielding J.R., Silverman S.G., Samuel S., Zou K.H., Loughlin K.R.

Embase

American Journal of Roentgenology. 171(4) (pp 1051-1053), 1998. Date of Publication: October 1998.

[Article]

AN: 28449974

OBJECTIVE. The purpose of this study was to determine whether unenhanced helical CT alone can be used for diagnosis and treatment planning of patients with obstructing ureteral stones.

MATERIALS AND METHODS. Medical records of 100 patients with ureteral stones and a clearly discernible clinical outcome who had undergone unenhanced helical CT were reviewed to

determine the number of urography procedures and results of excretory urograms performed within 72 hr of helical CT. CT scans were then reviewed by two radiologists for six findings: in-plane stone diameter, z-axis stone diameter, location of stone, periureteral stranding, hydronephrosis, and perinephric fluid. Seventy-one patients passed stones spontaneously, and 29 patients required intervention including basket retrieval, extracorporeal shock-wave lithotripsy, laser lithotripsy, or a combination of the three treatments. Data were analyzed to determine those findings that correlated with the need for intervention. RESULTS. Five excretory urograms were obtained, all of which agreed with findings revealed by CT. Excretory urography added no information. CT findings of in-plane diameter ($p < .001$), z-axis diameter ($p < .001$), and location of stone ($p = .003$) all significantly correlated with the need for intervention. CONCLUSION. Helical CT can be used in place of excretory urography to plan treatment of patients with flank pain caused by obstructing ureteral stones. Stones that are larger than 5 mm, located within the proximal two thirds of the ureter, and seen on two or more consecutive CT images are more likely to require endoscopic removal, lithotripsy, or both.

PMC Identifier

9762995 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=9762995>]

Status

Embase

Institution

(Fielding, Silverman, Samuel, Zou) Department of Radiology, Brigham and Women's Hospital, 75 Francis St., Boston, MA 02115, United States (Zou) Department of Health Care Policy, Harvard Medical School, 180 Longwood Ave., Boston, MA 02115, United States

(Loughlin) Department of Urology, Brigham and Women's Hospital, Boston, MA 02115, United States

Publisher

American Roentgen Ray Society (44221 Slatestone Court, Leesburg VA 20176-5109, United States)

Year of Publication

1998

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963.

Renal colic during pregnancy: A case for conservative treatment.

Parulkar B.G., Hopkins T.B., Wollin M.R., Howard Jr. P.J., Lal A.

Embase

Journal of Urology. 159(2) (pp 365-368), 1998. Date of Publication: February 1998.

[Article]

AN: 28049234

Purpose: We defined the merits of early evaluation and conservative treatment of pregnant patients admitted with renal colic.

Material(s) and Method(s): We retrospectively evaluated 72 pregnancies in 70 patients who were hospitalized with the diagnosis of renal colic between 1984 and 1995. Urinalysis was performed in every case. Ultrasound was the primary diagnostic test in 65 patients. The patients were followed for 2 weeks to 3 months after delivery (mean 21 days).

Result(s): Mean patient age at presentation was 27.4 years. The majority of patients were multiparous (47 of 70) and presented in the third trimester (44 of 70). Microscopic urinalysis was not helpful in identifying stone disease in pregnant patients. The sensitivity of ultrasound for the diagnosis of renal calculi was 95.2%. Watchful conservative nonsurgical treatment resulted in spontaneous passage of stones in 64.3% of cases. Of the 19 pregnancies in which intervention was necessary cystoscopy and Double-J* silicone stent placement were done in 15, and ureteroscopy and stone basketing were done in 4. Two patients, who presented with pyelonephritis and premature ruptured membranes had fetal loss. Long-term antibiotic prophylaxis was maintained in all stented and bacteriuric patients.

Conclusion(s): Renal colic in pregnant patients can be complicated by pyelonephritis and premature labor, especially if misdiagnosed or inadequately treated. Ultrasound is a safe and sensitive diagnostic test. Approximately two-thirds of renal calculi will pass spontaneously. For those who require intervention, placement of a Double-J stent is a safe and effective option.

PMC Identifier

9649240 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=9649240>]

Status

Embase

Institution

(Parulkar, Hopkins, Wollin, Howard Jr., Lal) Department of Urology and Medicine, University of Massachusetts, Memorial Hospital, Worcester, MA, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

1998

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964.

Rigid ureteroscopy in pregnant women.

Shokeir A.A., Mutabagani H.

Embase

British Journal of Urology. 81(5) (pp 678-681), 1998. Date of Publication: 1998.

[Article]

AN: 28316629

Objective. To report our experience with rigid ureteroscopy in pregnant women. Patients and methods. Ten pregnant women (mean age 25 years, SD 4.5, range 22-33) with ureteric stones were treated by ureteroscopy. The mean (SD, range) gestation time was 24 (6.5, 19-33) weeks. A standard rigid ureteroscope of 11.5 F was used in eight patients and 9.5 F in two. The procedure was carried out with no ureteric dilatation in three patients and with easy dilatation in seven. Fluoroscopy was not used before or during ureteroscopy in any case. Ultrasonography was available throughout the procedures for constant renal and obstetric monitoring. Results. Mid and lower ureteric stones were extracted by basket or forceps in three patients and had to be disintegrated by ultrasound in two. Upper ureteric stones were displaced to the kidney, with placement of double-pigtail ureteric stents, in three patients who were subsequently treated after delivery. Ureteric oedema was seen in one patient and the endoscopic findings were normal in the remaining patient. There were no obstetric complications. Two patients had a urinary tract infection and one complained of stent-induced bladder irritation. Conclusions. Rigid ureteroscopy

is a safe and reliable method in the diagnosis and treatment of ureteric calculi during pregnancy. The procedure can be performed with ultrasonographic monitoring and without using fluoroscopy.

PMC Identifier

9634040 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=9634040>]

Status

Embase

Institution

(Shokeir, Mutabagani) New Jeddah Clinic Hospital, Jeddah, Saudi Arabia (Shokeir) Department of Urology

(Shokeir) New Jeddah Clinic Hospital, PO Box 7692, Jeddah 21472, Saudi Arabia

Publisher

Blackwell Publishing Ltd. (9600 Garsington Road, Oxford OX4 2XG, United Kingdom)

Year of Publication

1998

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965.

Retrograde ureteropyeloscopic treatment of 2 cm. or greater upper urinary tract and minor staghorn calculi.

Grasso M., Conlin M., Bagley D.

Embase

Journal of Urology. 160(2) (pp 346-351), 1998. Date of Publication: August 1998.

[Article]

AN: 29476674

Purpose: Upper urinary tract calculi that are too large to treat with extracorporeal shock wave lithotripsy are most commonly cleared with percutaneous endoscopic techniques. In a select group of patients who were poor candidates for percutaneous nephrostolithotomy we used

retrograde endoscopic lithotripsy, and define the safety and efficacy of this modality in treating large, noninfectious stone burdens (2 cm. or greater).

Material(s) and Method(s): A total of 51 patients with 66 large (2 cm. or greater) upper urinary tract stones were chosen for retrograde ureteroscopic surgery. Many of these patients had co-morbid conditions that precluded or complicated standard percutaneous treatment. Lithotripsy was based on the application of small diameter fiberoptic ureteroscopes and the holmium laser lithotripter. Specifically, the 200 mu. laser fiber was used when lower pole renal access was required. Successful therapy was defined as total fragmentation of a stone burden with creation of fine sand and 2 mm. or smaller debris. Second look endoscopy was commonly performed in select patients with large branched calculi or stone burdens in excess of 3 cm. to rule out and treat large residual fragments.

Result(s): Of 51 patients 48 were treated solely in a retrograde ureteroscopic manner and in 3 either failure of lower pole access or infectious material encountered on initial endoscopy led to conversion to more standard percutaneous techniques. In 34 of 45 renal (76%), and 20 of 21 ureteral (95%) complete ureteroscopic fragmentation of the respective stone burden was accomplished after a single session. Second look endoscopy defined significant residual fragments requiring additional endoscopic lithotripsy in 8 of 15 large renal (53%) and 1 of 3 complex ureteral stone burdens. Success, that is complete pulverization of the stone burden to fine dust and small 2 mm. fragments, increased to 41 of 45 renal (91%) and all 21 ureteral calculi after these second look procedures. One patient required a third session to treat completely an exceptionally large (6 cm.) renal stone burden composed of pure cystine, thus increasing the overall success rate for renal calculi to 93%. Six-month followup data were available for 25 patients with large calculi treated ureteroscopically, of whom 15 (60%) had completely clear imaging, 6 (24%) had small lower pole debris that was decreasing on serial imaging and 4 (16%) had new stone growth which was, in part, related either to uncorrectable metabolic disorders or chronic renal scarring and urinary stasis. There were no intraoperative complications. Three postoperative complications included pyelonephritis in 1 patient, prostatic bleeding in 1 on anticoagulant therapy and a cerebral vascular accident 24 hours after the procedure in 1 with severe vascular disease.

Conclusion(s): Large and complex upper urinary tract calculi can be addressed safely and efficiently with retrograde endoscopic techniques.

PMC Identifier

9679874 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=9679874>]

Status

Embase

Publisher

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Year of Publication

1998

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966.

Secondary ureteroscopy: Results and management strategy at a referral center.

Singal R.K., Razvi H.A., Denstedt J.D.

Embase

Journal of Urology. 159(1) (pp 52-55), 1998. Date of Publication: January 1998.

[Article]

AN: 27525570

Purpose: In an era when extracorporeal shock wave lithotripsy occupies a dominant place in the treatment of urolithiasis uroteroscopy retains an important role in certain circumstances. While often a definitive procedure, ureteroscopy can be associated with potential risks and complications. The treatment of patients who have undergone a failed attempt at ureteroscopic stone retrieval or have a complication may be complex. As a tertiary care stone referral center we review our experience with performing salvage ureteroscopy following a previous unsuccessful attempt at endoscopic stone removal.

Material(s) and Method(s): Between May 1990 and February 1996, 79 patients were referred following an unsuccessful attempt at retrograde endoscopic or basket manipulation for ureteral calculi. A retrospective review of the outcomes of these patients was conducted. Of the patients 11 presented with associated complications, which included ureteral perforation (4), intramural false passage (1) and fever or sepsis (6). Complications were managed by early establishment of urinary tract drainage by stenting or nephrostomy. Among patients without complications elective salvage ureteroscopy was performed.

Result(s): Ureteroscopy was used in 79 patients with a successful outcome (stone-free) in 75 (95%). Followup imaging with renal ultrasound or excretory urography at least 3 months after

secondary ureteroscopy was available in 65 patients and showed no evidence of hydronephrosis or delayed stricture formation.

Conclusion(s): Treating the patient who undergoes a failed attempt at ureteroscopy may be problematic and requires access to a wide array of endourological equipment. Each subsequent treatment should be individualized with consideration given to stone size, location and general health. In the presence of a ureteral injury establishment of early urinary tract drainage is essential. Following stabilization, secondary ureteroscopy can be performed yielding high stone-free rates with minimal complications.

PMC Identifier

9400435 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=9400435>]

Status

Embase

Institution

(Singal, Razvi, Denstedt) Division of Urology, University of Western Ontario, London, Ont., Canada (Denstedt) St. Joseph's Health Centre, 268 Grosvenor St., London, Ont. NGA 4V2, Canada

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

1998

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967.

Endoscopic management of urolithiasis in the morbidly obese patient.

Nguyen T.A., Belis J.A.

Embase

Journal of Endourology. 12(1) (pp 33-35), 1998. Date of Publication: February 1998.

[Conference Paper]

AN: 28142838

A retrospective review of 48 consecutive morbidly obese patients with urolithiasis who were treated successfully by endoscopic modalities over 3.5 years was performed. Of the 73 endoscopic procedures, 48 were ureteroscopic laser lithotripsy (UL), 4 were ureteroscopic basket extraction, and 21 were percutaneous nephrolithotripsy (PCNL). The patients' weight ranged from 205 to 385 lbs. (average 286 lbs.). Their abdominal girth ranged from 53 to 65 inches (average 59 inches). Twenty-six patients had one procedure, eight patients had bilateral procedures, eleven patients had two procedures, and three patients had three procedures with utilization of either multiple ureteroscopic treatments or the combination of percutaneous and ureteroscopic techniques. The stone-free rate after one procedure was 77.8% for UL and 60% for PCNL. The stone-free rate after planned repeat procedures was 97% for UL/UL and 89% for PCNL/UL. There were two minor complications. Forty-eight procedures were performed on an outpatient basis, and the remaining 25 procedures necessitated hospital admission (average 3.6 days). Morbidly obese patients with urolithiasis who are unable to have SWL because of their body weight and abdominal girth can be treated successfully with UL, ureteroscopic basket extraction, and PCNL with efficacy comparable to that in patients of normal weight and with minimal morbidity. Many renal calculi were treated with UL alone with a high success rate.

PMC Identifier

9531148 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=9531148>]

Status

Embase

Institution

(Nguyen, Belis) Section of Urology, Milton S. Hershey Medical Center, Penn State Geisinger Health System, Hershey, PA, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

1998

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968.

Endoscopic treatment of the lower ureteral stones.

Satar H., Zeren S., Bayazut Y., Soyupak B., Erken U., Turkyilmaz R.K.

Embase

Annals of Medical Sciences. 6(2) (pp 107-110), 1997. Date of Publication: 1997.

[Article]

AN: 28458295

Purpose: Since the advance of endourologic techniques and instruments, treatment of the lower ureteral stones has become highly successful and safe. Ureteroscopy is a standard urologic endoscopic procedure in treating the stones.

Method(s): In this study, we have reviewed the results of 70 consecutive cases treated by the guidance of rigid ureteroscope between September 1994 and June 1995. Mean calculus diameter was 5.3 mm (between 3 to 10 mm).

Result(s): In 63 patients (90%) were stones removed successfully. They were fragmented by electrohydraulic lithotripsy in 18 (28.6%), extracted by basket catheter in 16 (25.4%) and extracted by grasping forceps in 29 (46.0%). An ureteral stent was inserted following the procedure in 36 cases (51.4%). 57 patients (81.4%) were discharged from the hospital within two days. We did not observe any serious complications.

Conclusion(s): Urologists enjoy a variety of treatment options to manage ureteral calculi. Continuing refinements in 'minimally invasive' techniques such as ESWL, ureteroscopic stone manipulation, ureteral stents, and intracorporeal lithotripsy using various energy sources have made open surgery nearly obsolescent. The choice of optimal ureteral stone treatment must be individualized to consider patient needs, physician expertise, and treatment facilities. Our experience shows that ureteroscopic lithotripsy provide a safe and effective means of performing intracorporeal lithotripsy for smaller ureteric stones. In skilled hands, ureteroscopic lithotripsy is by far the most expeditious and low morbidity means of clearing a distal ureteral stone burden. Thus, ureteroscopic treatment should be considered a treatment of choice for distal ureteral calculi.

Status

Embase

Institution

(Satar, Zeren, Bayazut, Soyupak, Erken, Turkyilmaz) Cukurova University, School of Medicine, Department of Urology, Balcali-Adana, Turkey

Publisher

University of Cukurova (Adana 01330, Turkey)

Year of Publication

1997

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969.

Ureteral stones clinical guidelines panel summary report on the management of ureteral calculi. Segura J.W., Preminger G.M., Assimos D.G., Dretler S.P., Kahn R.I., Lingeman J.E., Macaluso Jr. J.N.

Embase

Journal of Urology. 158(5) (pp 1915-1921), 1997. Date of Publication: November 1997.

[Article]

AN: 27433184

Purpose: The American Urological Association convened the Ureteral Stones Clinical Guidelines Panel to analyze the literature regarding available methods for treating ureteral calculi and to make practice policy recommendations based on the treatment outcomes data.

Material(s) and Method(s): The panel searched the MEDLINE data base for all articles related to ureteral calculi published from 1966 to January 1996. Outcomes data were extracted from articles accepted after panel review. The data were then meta-analyzed to produce outcome estimates for alternative treatments of ureteral calculi.

Result(s): The data indicate that up to 98% of stones less than 0.5 cm. in diameter, especially in the distal ureter, will pass spontaneously. Shock wave lithotripsy is recommended as first line treatment for most patients with stones 1 cm. or less in the proximal ureter. Shock wave lithotripsy and ureteroscopy are acceptable treatment choices for stones 1 cm. or less in the distal ureter.

Conclusion(s): Most ureteral stones will pass spontaneously. Those that do not can be removed by either shock wave lithotripsy or ureteroscopy. Traditional blind basket extraction, without fluoroscopic control and guide wires, is not recommended. Open surgery is appropriate as a salvage procedure or in certain unusual circumstances.

PMC Identifier

9334635 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=9334635>]

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Embase

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

1997

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970.

Treatment of ureteral calculi with an 8.3-Fr. disposable shaft rigid ureteroscope.

D'Amico F.C., Belis J.A.

Embase

Techniques in Urology. 2(3) (pp 126-129), 1996. Date of Publication: 1996.

[Article]

AN: 26362337

One hundred forty-two adult patients underwent ureteroscopy for treatment of ureteral calculi using a disposable shaft semirigid mini- ureteroscope. The ureteroscope has an 8.3-French (Fr.) outer diameter with a fiberoptic core that allows some flexibility of the shaft. It has a 4.0-Fr, working channel that allows simultaneous use of 3-Fr. instruments and irrigation. Twenty-nine patients had upper ureteral calculi and 113 patients had lower ureteral calculi. Forty-eight patients did not require ureteral dilation, and the remainder had minimal dilation to 10-12 Fr. One hundred

fifteen patients underwent laser lithotripsy. 15 patients underwent basket extraction, and 12 patients underwent both. Ten patients required use of a flexible ureteroscope. Ninety-three percent of the patients went home the day of the procedure, 4% stayed one night in the hospital, and the remaining three percent had longer hospital stays. No major complications or infections were noted. Only 11% of the patients required intravenous or intramuscular narcotics for pain management postoperatively. The stone-free results at one month were 98% for lower ureteral calculi and 93% for upper ureteral calculi. We have found this ureteroscope to be similar to other rigid mini- ureteroscopes with some additional advantages. A larger working channel, increased flexibility, and improved optics make it useful for treating ureteral calculi in the lower ureter in men and the entire ureter in selected women.

PMC Identifier

9118419 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=9118419>]

Status

Embase

Institution

(D'Amico, Belis) Division of Urology, Milton S. Hershey Medical Center, Pennsylvania State University, Hershey, PA 17033, United States

Publisher

Lippincott Williams and Wilkins (530 Walnut Street,P O Box 327, Philadelphia PA 19106-3621, United States)

Year of Publication

1996

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971.

Laparoscopic common bile duct exploration: Evolution of a new technique.

Khoo D.E., Walsh C.J., Cox M.R., Murphy C.A., Motson R.W.

Embase

British Journal of Surgery. 83(3) (pp 341-346), 1996. Date of Publication: 1996.

[Article]

AN: 26083166

Laparoscopic exploration of the common bile duct (CBD) with a choledochoscope or a stone basket during laparoscopic cholecystectomy was attempted in 60 patients and was successful in 56. The cystic duct was used for entry to the CBD in 46 patients and in 14 a choledochotomy was performed. Of 51 patients with confirmed common duct stones, 38 had complete laparoscopic clearance (75 per cent). In 13 patients the duct was not cleared or was only partially cleared, of whom four went on to have clearance by postoperative percutaneous choledochoscopy down a cystic duct or T-tube track. Two patients with cystic duct tubes passed their remaining stones spontaneously. One patient had open exploration and six required endoscopic retrograde cholangiopancreatography. Of nine patients without stones, choledochoscopy was impossible in three patients whose cholangiogram was later considered to be normal. In five patients stones were excluded by choledochoscopy and in one patient laparoscopic choledochoscopy was undertaken to better define abnormal biliary anatomy; this helped to avoid major bile duct injury. Choledochoscopy was easier with the smaller 3.6-mm ureteroscope but stone removal was more difficult when the basket was too small for the stones, the cystic duct too small relative to stone size or the number of stones was too great. Successful stone clearance was proportional to the level of effort expended, and was limited by operating time and equipment.

PMC Identifier

8665187 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=8665187>]

Status

Embase

Institution

(Khoo, Walsh, Cox, Murphy, Motson) Department of Surgery, Colchester General Hospital,
Turner Road, Colchester CO4 5JL, United Kingdom

Publisher

John Wiley and Sons Ltd (Southern Gate, Chichester, West Sussex PO19 8SQ, United Kingdom)

Year of Publication

1996

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972.

Clinical experience with holmium:YAG laser lithotripsy of ureteral calculi.

Yiu M.K., Liu P.L., Yiu T.F., Chan A.Y.T.

Embase

Lasers in Surgery and Medicine. 19(1) (pp 103-106), 1996. Date of Publication: 1996.

[Article]

AN: 26286503

Background and Objective: We recently acquired a holmium:YAG laser with wavelength of 2.1 mum. We would like to report our success in using this machine for laser lithotripsy. Study

Design/Patients and Methods: Forty- seven ureteroscopic laser lithotripsies were performed in 44 patients (three bilateral stones) over a 6 month period. Four stones were in the upper ureter, six in the middle ureter, and 37 in the lower ureter. The holmium laser beam was delivered via a 400 micron flexible quartz fiber through a 7 Fr rigid ureteroscope during the procedure. The stone size varied from 4 to 21 mm.

Result(s): The success rate was 91%. Most of the stones were fragmented to less than 2 mm in size. Larger fragments were removed with a Dormia basket (six cases) for stone clearance.

Endoscopic laser ureterotomy was performed in two patients with stricture below the stone. One patient required conversion to open ureterolithotomy, and three required subsequent Extracorporeal Shock Wave Lithotripsy. A low complication rate was observed.

Conclusion(s): The pulsed holmium:AG laser is safe and effective for use in ureteroscopic laser lithotripsy.

PMC Identifier

8837001 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=8837001>]

Status

Embase

Institution

(Yiu, Liu, Yiu, Chan) Department of Surgery, Princess Margaret Hospital, Lai Chi Kok, Kowloon, Hong Kong (Yiu) Department of Surgery, Princess Margaret Hospital, Lai King Hill Road, Hong Kong, Hong Kong

Publisher

Wiley-Liss Inc. (111 River Street, Hoboken NJ 07030-5774, United States)

Year of Publication

1996

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973.

The management of upper urinary tract calculi by piezoelectric extracorporeal shock wave lithotripsy in spinal cord injury patients.

Robert M., Bennani A., Ohanna F., Guiter J., Averous M., Grasset D.

Embase

Paraplegia. 33(3) (pp 132-135), 1995. Date of Publication: 1995.

[Article]

AN: 25086534

From May 1988 to September 1994, 15 spinal cord injury patients were treated by piezoelectric extracorporeal shock wave lithotripsy. Aged from 23 to 71 years (mean = 39), they presented with a total of 23 stones, of which 18 were located in the calyces, three in the renal pelvis and two in the proximal ureter. The maximum dimensions of calculi varied from 5 to 35 mm (mean 11). Patients were placed in a dorsal decubitus position during the sessions, three being sedated with diazepam, while the other 12 remained unsedated. All were treated routinely with systemic antibiotics. Auxiliary procedures consisted of two pyelocalyceal flushings, three double J ureteral stenting and three ureteroscopies with fragment removal with a Dormia basket. No episode of autonomic dysreflexia was observed. Short term side effects were limited to a few cases of gross haematuria which regressed spontaneously. Overall, eight successes (53%), and seven failures (47%), were registered. Of the failures, one was the result of a partial fragmentation, while six were related to intrarenal retention of residual fragments resulting in four cases in rapid recurrences. Extracorporeal shock wave lithotripsy can be easily applied to spinal cord injury patients. Its usefulness and limitations need to be well understood and a global consideration

must be applied to the prevention and early detection of the upper urinary calculi in this exposed population of patients.

PMC Identifier

7784114 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=7784114>]

Status

Embase

Institution

(Robert, Bennani, Ohanna, Guiter, Averous, Grasset) Service d'Urologie, Hopital Lapeyronie, 371 Avenue Doyen Giraud, 34295 Montpellier Cedex 5, France

Publisher

Nature Publishing Group (Houndmills, Basingstoke, Hampshire RG21 6XS, United Kingdom)

Year of Publication

1995

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974.

Cost and effectiveness of different treatment alternatives in urinary stone practice.

Lehtoranta K.

Embase

Scandinavian Journal of Urology and Nephrology. 29(4) (pp 437-447), 1995. Date of Publication: 1995.

[Article]

AN: 26018541

The cost and effectiveness of seventy-six consecutive percutaneous nephrolithotomy (PNL) procedures performed during the years 1990-1992, a sample of 425 ESWL patients with 675 treatments from 1991-1992, and 45 successive open pyelolithotomies (PL) performed before the advent of the new stone treatment techniques during the years 1981-1985, were studied for each

of the treatment modalities. The costs were counted per patient and based on the cumulative charge of the procedures, cost for in-patient care, and treatment of additional procedures and operatively treated complications. The results showed that the great majority of ESWL patients were treated at a low cost and with few additional procedures and complications compared to PNL, particularly, when stones smaller than 20 mm were treated. Considering all the patients, the cumulative mean hospital cost per patient without the cost for the follow-up was as follows, FIM(): PL 33860(4200), PNL 63360(7860), and ESWL 17430(2160). The remarkable number of additional and auxiliary measures (including the pre- and postoperative ESWL procedures) resulted in considerable extra costs for the PNL patients until they were rendered stone-free. Another series comprising 42 successive patients with 48 stone basket procedures (SB) from the years 1981-1985 was retrospectively compared to 42 patients with 50 ureteroscopic stone extractions (URS) between January 1985 and April 1988 before the beginning of the ESWL practice in Finland as well as to 54 patients with 79 ESWL treatments for a lower ureteric stone during the years 1991-1992. The stone-free status after the three procedures until one month was 71, 66, and 60%, with no statistically significant difference. In the group of lower ureteric stones the cumulative mean hospital cost per patient was as follows, FIM(): SB 19520(2420), URS 17750(2200), and ESWL 17810(2210). Also in the treatment of lower ureteric stones, ESWL is an equally cost-effective method representing an alternative worth consideration, particularly for patients preferring a minimally invasive urinary stone treatment.

PMC Identifier

8719361 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=8719361>]

Status

Embase

Institution

(Lehtoranta) Ratsupolku 11, FIN-17200 Vaaksy, Finland

Publisher

Informa Healthcare (69-77 Paul Street, London EC2A 4LQ, United Kingdom)

Year of Publication

1995

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975.

Outpatient fragmentation of ureteral calculi with mini-ureteroscopes and laser lithotripsy.

Boline G.B., Belis J.A.

Embase

Journal of Endourology. 8(5) (pp 341-343), 1994. Date of Publication: 1994.

[Article]

AN: 25049017

Laser lithotripsy with mini-ureteroscopes is a minimally invasive method to fragment ureteral calculi. This study reviewed the efficacy and morbidity of outpatient laser lithotripsy for the treatment of ureteral calculi. The 248 patients were initially treated by outpatient ureteroscopy and laser lithotripsy with the Candela pulsed-dye laser over a period of 3 1/2 years. Thirty-six patients had prior unsuccessful fragmentation of ureteral calculi by SWL. Twenty-eight patients had undergone unsuccessful ureteroscopy with attempted basket extraction or attempted fragmentation with methods other than laser. Calculi were located in the upper ureter in 31% and in lower ureter in 69% of these patients. The 1-month stone-free rate was 92% for upper ureteral calculi and 96% for lower ureteral calculi, with an overall success rate of 94.7%. Ninety per cent of the patients were discharged the same day and 96% within 23 hours. Hospital admission was needed in only 4% of patients. Parenteral analgesia was required in 18% of patients, and major complications occurred in 0.8%. The combination of mini-ureteroscopes and laser lithotripsy is an effective method for fragmentation of ureteral calculi in outpatients with low morbidity and few complications.

PMC Identifier

7858619 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=7858619>]

Status

Embase

Institution

(Boline, Belis) Division of Urology, Milton S. Hershey Medical Center, Pennsylvania State University, Hershey, PA 17033, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

1994

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

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976.

Endourological treatment of lumbar and iliac ureteral stones. A comparative study of 49 cases.

Piergiovanni M., Cussenot O., Nguyen H.V., Teillac P., Le Duc A.

Embase

European Urology. 26(4) (pp 291-297), 1994. Date of Publication: 1994.

[Article]

AN: 25009317

The efficacy of the Lithoclast has been described extensively in the recent literature. However, to our knowledge, few articles have dealt with the safety of this technique. We present a retrospective study of 49 patients with stones of the lumbar and iliac ureter treated between 1989 and 1992 either by means of the Lithoclast (17 patients), by electrohydraulic shock waves (16 patients), or by trapping the stones in a wire stone basket (16 patients). The success rates were 88% for the Lithoclast and wire stone baskets and 62% for electrohydraulic shock waves. The mean dimensions of the stones were 10 mm for the Lithoclast and electrohydraulic shock wave groups, and 7 mm for the wire stone basket group. Complications consisted of 7 ureteral lesions (2 cases with the Lithoclast, 4 cases with electrohydraulic shock waves and 1 case with the wire stone basket) and 1 stripping of the lower ureter following stone extraction with a wire stone basket, which required open reimplantation. This study demonstrates the efficacy and safety of the Lithoclast for the treatment of large stones of the lumbar and iliac ureter.

PMC Identifier

7713127 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=7713127>]

Status

Embase

Institution

(Piergiovanni, Cussenot, Nguyen, Teillac, Le Duc) Service d'Urologie, BH Niveau 16, CH-1011 Lausanne CHUV, Switzerland

Publisher

Elsevier (P.O. Box 211, Amsterdam 1000 AE, Netherlands)

Year of Publication

1994

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

[SFX](#)

977.

Treatment of urinary calculi in a porcine and canine model using the browne pneumatic impactor.

Grasso M., Loisesides P., Beaghler M., Bagley D.

Embase

Urology. 44(6) (pp 937-941), 1994. Date of Publication: 1994.

[Article]

AN: 25317767

Objectives. To define the safety and efficacy of a pneumatically driven, mechanical lithotripter using nitinol probes through semirigid and actively deflectable, flexible fiberoptic endoscopes.

Methods. The Browne Pneumatic Impactor (BPI) uses standard compressed air to drive a nitinol wire along its long axis onto a calculus, fragmenting it. Bench top and in vivo experiments were designed to explore variables, including the effects of various nitinol probe tip designs, outer diameters, excursion distances, and sheathing materials as well as the efficiency of fragmentation with active endoscope deflection. In vivo experiments in two animal models (porcine and canine) were performed using small diameter fiberoptic semirigid, and actively deflectable, flexible ureteroscopes. Surgically placed calculi were fragmented with the BPI and representative tissue was obtained immediately and up to 2 weeks postoperatively to define histologic changes. A panel of human urinary calculi was chosen for their relative difficulty in fragmentation with other modalities. **Results.** Calculi, including pure calcium oxalate monohydrate, brushite, cystine, and triamterene, were fragmented with the BPI used through both semirigid and actively deflectable, flexible endoscopes. A rounded tip design and excursions of 1 mm fragmented calculi most

efficiently with minimal histologic reaction. Retrograde stone migration before fragmentation was noted in dilated upper urinary tracts. This was prevented by first entrapping the calculus within a standard basket. Ureteral calculi were fragmented with the nitinol probes deflected up to 45degree by the flexible endoscope. With increased active deflection, the efficiency of fragmentation decreased. Conclusions. The BPI represents a safe, thermal- free endoscopic lithotrite able to fragment the hardest calculi through semirigid and flexible ureteroscopes.

PMC Identifier

7985330 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=7985330>]

Status

Embase

Institution

(Grasso, Loisesdes, Beagbler, Bagley) Division of Urology, Loma Linda University, Loma Linda, CA 92350, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

1994

Link to the Ovid Full Text or citation:

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978.

Lithotripsy of urinary calculi by tunable pulsed dye lasers: A randomized in vitro study.

Nelson J.B., Graham J.B.

Embase

Journal of Urology. 151(3) (pp 656-659), 1994. Date of Publication: 1994.

[Article]

AN: 24054704

Pulsed dye laser lithotripsy has been used in the treatment of urinary calculi. We compared the efficacy of 2 pulsed dye lasers with different pulse durations in lithotripsy. A total of 20 pairs of human kidney stones was matched by size and composition, and randomized for laser lithotripsy under identical in vitro conditions. Each stone received 150 shocks at sequential energy settings between 40 and 140 mJ. while in a laser fiber compatible stone basket until complete fragmentation occurred. Stone fragments were separated by size and weighed. We found that the laser with the shorter pulse duration fragmented stones with less total energy and produced fewer fragments greater than 3.35 mm. The differences were statistically significant.

PMC Identifier

8308975 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=8308975>]

Status

Embase

Institution

(Nelson, Graham) Department of Urology, Northwestern Univ. Medical School, 303 E. Chicago Ave., Chicago, IL 60611, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

1994

Link to the Ovid Full Text or citation:

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979.

Treatment of ureteral calculi with an 8.3F disposable shaft rigid ureteroscope.

D'amico F.C., Belis J.A.

Embase

The Journal of stone disease. 5(4) (pp 213-216), 1993. Date of Publication: Oct 1993.

[Article]

AN: 23946246

Seventy-one adult patients underwent ureteroscopy for treatment of ureteral calculi using the disposable shaft semirigid mini-ureteroscope. The ureteroscope has an 8.3F outer diameter with a fiber optic core that allows some flexibility of the shaft. It has a 4.0F working channel that allows simultaneous use of 3F instruments and irrigation. Twenty-three patients had upper ureteral calculi and 48 patients had lower ureteral calculi. Thirty-six patients did not require ureteral dilation and the remainder had minimal dilation to 10-12F. Fifty-one patients underwent laser lithotripsy, 14 patients underwent basket extraction, and six patients had both. Five patients required use of a second flexible ureteroscope. Seventy-seven percent of the patients went home the day of the procedure, 16% stayed one night in the hospital, and the remaining 7% had longer hospital stays. No major complications or infections were noted. Only 11% of the patients required IV or IM narcotics for pain management post-operatively. The stone-free results at 1 month were 96% for lower ureteral calculi and 91% for upper ureteral calculi. We have found this ureteroscope to be similar to other rigid mini-ureteroscopes with some additional advantages. A larger working channel, increased flexibility/steerability, and improved optics make it useful for treating ureteral calculi in the lower ureter in men and the entire ureter in women.

PMC Identifier

10146424 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=10146424>]

Institution

(D'amico, Belis) Division of Urology, Milton S. Hershey Medical Center, Pennsylvania State University, Hershey 17033.

Year of Publication

1993

Link to the Ovid Full Text or citation:

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980.

Lasertripsy of upper urinary tract calculi after unsuccessful extracorporeal lithotripsy or ureteroscopy: Comparison with primary lasertripsy.

Boline G.B., Belis J.A.

Embase

Journal of Endourology. 7(6) (pp 473-476), 1993. Date of Publication: 1993.

[Article]

AN: 24304800

Lasertripsy of upper urinary tract calculi after unsuccessful extracorporeal lithotripsy (SWL) or ureteroscopy (Group 1; N = 26 patients, 36 calculi) was compared with primary lasertripsy (Group 2; N = 56 patients, 79 calculi). Access to calculi was achieved by a Candela miniscope or flexible ureteroscope, and laser fragmentation was performed with the Candela pulsed-dye laser. Laser alone or laser plus 1.9F basket extraction produced a stone-free rate of 80.6% in Group 1 and 79.8% in Group 2. Additional treatment methods were needed in similar proportions of both groups and in most patients consisted of SWL of fragments displaced into the kidney. The laser fragmentation failures rates were 2.8% in Group 1 and 7.6% in Group 2. One-month stone-free rates and major complication rates were similar in the two groups. Lasertripsy after unsuccessful SWL or ureteroscopy was as effective as primary lasertripsy.

PMC Identifier

8124340 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=8124340>]

Status

Embase

Institution

(Boline, Belis) Div of Urology, Milton S Hershey Medical Center, Pennsylvania State University, Hershey, PA 17033, United States

Publisher

Mary Ann Liebert Inc. (140 Huguenot Street, New Rochelle NY 10801-5215, United States)

Year of Publication

1993

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981.

Ureteroscopy under local anaesthesia with and without intravenous analgesia.

Vogel T.-A., Mellin H.-E., Hopf B., Ackermann R.

Embase

British Journal of Urology. 72(2) (pp 161-164), 1993. Date of Publication: 1993.

[Article]

AN: 23252592

In a prospective study of 302 ureteroscopic procedures, 161 were commenced and 133 completed without the use of general or regional anaesthesia. In 15 patients ureteroscopy (URS) was performed with lignocaine jelly in the urethra only, and in 118 with additional intravenous analgesia. Alfentanil, a synthetic morphine derivative, was used for intravenous analgesia. Ureteroscopy was performed prior to extracorporeal shock wave lithotripsy in 46 patients, for stone basketing in 40, for stone fragmentation in 29, for diagnostic purposes in 14 and for cold knife ureterotomy in 4. Ureteric lesions were observed in 9 patients (6.8%) treated under intravenous sedoanalgesia. This percentage is within the range reported in other series of patients treated under general anaesthesia. The findings suggest that URS, when performed without general or regional anaesthesia, does not increase the risk of complications or compromise the results of treatment.

PMC Identifier

8402018 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=8402018>]

Status

Embase

Institution

(Vogel, Mellin, Hopf, Ackermann) Department of Urology, University of Dusseldorf, Moorenstrasse 5, 4000 Dusseldorf, Germany

Publisher

Blackwell Publishing Ltd. (9600 Garsington Road, Oxford OX4 2XG, United Kingdom)

Year of Publication

1993

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982.

Clinical experience with electromechanical impactor.

Dretler S.P.

Embase

Journal of Urology. 150(5 l) (pp 1402-1404), 1993. Date of Publication: 1993.

[Article]

AN: 24356181

The electromechanical impactor is a 3.0F electrohydraulic electrode within a stainless steel sheath attached to a distal compression spring with a conical titanium tip. Each electrical discharge causes a 2.7 mm. tip extension and a kinetic impact energy of 900 bar. It is 5F, flexible and placed within the straight working port of a 9.5F to 10.0F rigid or semirigid ureteroscope. A clinical trial was performed and 15 patients (16 ureters with calculi) were treated with this device. An upper ureteral stone partially fragmented and migrated cephalad, 1 stone failed to break and was basket extracted, and there was 1 machine failure. The 13 other calculi were successfully broken to fragments less than 5 mm. In 2 patients baskets were also used to remove the larger monohydrate fragments. A secondary procedure was required to basket a 4 mm. calcium oxalate monohydrate fragment in a patient with 3 ureteral calculi. The average size of the calculi was 14 mm. in largest diameter. Excluding the machine failure, the average number of pulses required for fragmentation was 764. The life of each device was 600 to 800 pulses. Of the 15 cases 1 electrode was used in 10, 2 in 3 and 3 in 2. There was no evidence of ureteral wall injury, abrasion or perforation. The electromechanical impactor is a safe and effective method of ureteral stone fragmentation.

PMC Identifier

8411409 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=8411409>]

Status

Embase

Institution

(Dretler) Kidney Stone Center, Massachusetts General Hospital, Harvard Medical School,
Boston, MA, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

1993

Link to the Ovid Full Text or citation:

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983.

Calculi of the ilio-pelvic ureter: therapeutic approach and importance of ureteroscopy regarding 200 cases. Calculs de l'uretère ilio-pelvien: attitude thérapeutique et intérêt de l'ureteroscopie à propos de 200 cas <Calculs de l'uretère ilio-pelvien: attitude thérapeutique et intérêt de l'ureteroscopie à propos de 200 cas.>

Bensadoun H., Bennani S., Blanchet P., Moukarzel M., Benoit G., Jardin A.

Embase

Progres en urologie : journal de l'Association française d'urologie et de la Société française d'urologie. 3(3) (pp 429-437), 1993. Date of Publication: Jun 1993.

[Review]

AN: 23837439

The authors report their experience of 200 consecutive emergency admissions for ilio-pelvic uterine stones. 82 patients (41%) eliminated their stones with medical treatment. 118 patients (59%) required ureteroscopic treatment either by immediate basket extraction (n = 58) or by contact fragmentation (pulsed laser = 57, ultrasound = 1, electrohydraulic catheter = 2). 6 failures were observed and one case of distant ureteric stenosis was successfully treated by balloon dilatation. This therapeutic approach cured 187 (93.5%) of the patients of their stones within an average of 8 days (82 "spontaneous", 105 "endourological") with a mean hospital stay of 2.3 days and 2.7 days, respectively. Ureteroscopy had a success rate of 95% and appears to be the most effective treatment, but the medical option remains the basic treatment for stones of the lower ureter.

PMC Identifier

8369821 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=8369821>]

Institution

(Bensadoun, Bennani, Blanchet, Moukarzel, Benoit, Jardin) Service d'Urologie, Hopital de Bicetre, Universite Paris-Sud.

Year of Publication

1993

Link to the Ovid Full Text or citation:

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984.

An evaluation of ureteral laser lithotripsy: 225 Consecutive patients.

Dretler S.P.

Embase

Journal of Urology. 143(2) (pp 267-271), 1990. Date of Publication: 1990.

[Article]

AN: 20066366

We treated 225 patients with 227 ureteral calculi (5 steinstrasse) via the pulsed dye laser with 9.5F rigid, 7.2F semirigid and flexible, steerable ureteroscopes. The 222 calculi (excluding steinstrasse) were fragmented by laser alone in 141 cases (64%), laser and a basket in 30 (13%), and laser and extracorporeal shock wave lithotripsy in 33 (15%). The laser failed in 18 cases (8%). Of the 222 calculi 165 were impacted. Of 29 impacted upper ureteral calculi 15 were treated by laser disimpaction and fragmentation, 13 by laser disimpaction followed by extracorporeal shock wave lithotripsy and 1 by an operation. Of 42 mid ureteral calculi (30 impacted) 24 were treated successfully by laser fragmentation and 14 by fragmentation followed by extracorporeal shock wave lithotripsy, while 4 failed laser therapy. Among 151 lower ureteral and tunnel calculi laser fragmentation was successful in 132 cases (87%), laser followed by extracorporeal shock wave lithotripsy was successful in 6 and 13 failed laser treatment. There were no ureteral strictures and no ureteral injuries related to use of the laser. The pulsed dye laser is safe and effective treatment for impacted upper and mid ureteral calculi, small mid

ureteral calculi in female patients, and lower ureteral calculi in male and female patients. Use of the laser in conjunction with other endourological methods resulted in the need for an operation in 2 of 225 patients (0.9%) with ureteral calculi.

PMC Identifier

1967658 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=1967658>]

Status

Embase

Institution

(Dretler) Lithotripter Unit, Massachusetts General Hospital, Boston, MA 02114 United States

Year of Publication

1990

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985.

Laser lithotripsy of the difficult ureteral calculus: results in 122 patients.

Psihramis K.E.

Embase

The Journal of urology. 147(4) (pp 1010-1012), 1992. Date of Publication: Apr 1992.

[Article]

AN: 22907833

We studied 122 patients with ureteral calculi who could not be treated by extracorporeal shock wave lithotripsy (ESWL) because the stones could not be localized or focused for treatment, the patient had failed prior ESWL, the stones were impacted and in situ ESWL was likely to fail or the stones were proximal to a ureteral stricture. These patients underwent laser lithotripsy using the Candela pulsed dye laser. In 107 patients (88%) the calculi were completely fragmented with the laser alone, while 10 (8%) needed another procedure (ESWL in 8 and stone fragment extraction by basket in 2), and 5 (4%) had failed laser therapy and needed some other form of treatment

(ESWL in 4 and percutaneous antegrade extraction in 1). At 3 months 116 of 122 patients (95%) were stone-free. There were 2 immediate complications (ureteral perforations) and 1 late complication (ureteral stricture). Laser lithotripsy is a safe and effective method of intracorporeal fragmentation, even of the difficult ureteral calculus, and it is a useful adjunct to ESWL.

PMC Identifier

1552575 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=1552575>]

Institution

(Pshramis) Mount Sinai Hospital, Toronto, Ontario, Canada.

Year of Publication

1992

Link to the Ovid Full Text or citation:

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986.

In situ extracorporeal shock wave lithotripsy for obstructing ureteral stones with acute renal colic.

Cass A.S.

Embase

Journal of Urology. 148(6) (pp 1786-1787), 1992. Date of Publication: 1992.

[Article]

AN: 22371369

In situ (no instrumentation) extracorporeal shock wave lithotripsy (ESWL*) was used to treat 49 patients with obstructing ureteral stones causing acute renal colic. Ureteral obstruction was diagnosed on the delayed films of an excretory urogram and was classified as severe (dilatation above and no contrast medium seen below the stone) in 17 patients and partial (dilatation above and contrast medium seen below the stone) in 32. Upper third ureteral stones were present in 41 patients (obstruction severe in 15 and partial in 26) and lower third ureteral stones were present in 8 (obstruction severe in 2 and partial in 6). ESWL was performed within 14 days of the onset of the acute renal colic because of persistent pain with an unmodified Dornier HM3 lithotripter in 17

patients and a Medstone STS device in 32. With single stones the stone-free rate at 3 months, the repeat ESWL rate and the secondary procedure (stone basketing) rate were 92%, 6% and 8%, respectively, with severe obstruction, and 78%, 6% and 6%, respectively, with partial obstruction. No urinary drainage procedures for sepsis were required after ESWL. Obstructing ureteral stones, which presented mainly in the upper third of the ureter, were successfully treated with in situ ESWL without the need for either bypassing the stone with a ureteral stent or for pushing the stone back into the kidney before treatment with ESWL.

PMC Identifier

1433608 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=1433608>]

Status

Embase

Institution

(Cass) Dornier Medical Systems, Inc., Marietta, GA, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

1992

Link to the Ovid Full Text or citation:

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987.

Ureteral calculi: Natural history and treatment in an era of advanced technology.

Morse R.M., Resnick M.I.

Embase

Journal of Urology. 145(2) (pp 263-265), 1991. Date of Publication: 1991.

[Article]

AN: 21116812

Patients with ureteral stones may be managed expectantly, or treated with a variety of invasive and noninvasive techniques depending on stone composition, size and location, expectations of the patient and experience of the surgeon. Of 378 patients with documented ureteral calculi 60% passed the stones spontaneously. Passage rates from the proximal, middle and distal ureter were 22, 46 and 71%, respectively. Basketing under fluoroscopic control of distal stones was successful in 79% of the attempts and for those in whom this approach failed ureteroscopy was performed, with a success rate of 90%. When ureteroscopy was used as the initial treatment of distal stones removal was achieved in 81% of the patients. These statistics serve as a reminder that traditional therapy of ureteral stones has not lost its role in contemporary practice.

PMC Identifier

1988715 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=1988715>]

Status

Embase

Institution

(Morse, Resnick) Division of Urology, Case Western Reserve Univ, School of Medicine,
Cleveland, OH, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

1991

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988.

Techniques in endoscopic lithotripsy using pulsed dye laser.

Grasso M., Shalaby M., El Akkad M., Bagley D.H.

Embase

Urology. 37(2) (pp 138-144), 1991. Date of Publication: 1991.

[Article]

AN: 21101050

The pulsed dye laser represents a new tool in the treatment of ureteral calculi. Laser energy channeled through a delicate optical fiber is used to disimpact and fragment calculi. Standard ureteroscopic instruments including graspers, baskets and dilatation balloons can be used with the laser system. Interchangeable optical fibers ranging from 200 to 400 micrometers deliver up to 120 mJ of energy to the stone's surface. For two weeks in 1989 an endourology clinic was held in upper Egypt. Eighty patients ranging in age from nine years to sixty-seven years old were evaluated and treated endoscopically. Endoscopes ranging from 6.9F to 12.5F were used to deliver the optical fiber. All stones visualized endoscopically were fragmented. Greater than 60 percent of the stones fragmented were composed of pure calcium oxalate monohydrate.

Schistosoma hematobium was endemic among our study group. Bilharzial strictures of the distal ureter were noted in 30 percent of these patients. Treatment of these strictures using both balloon dilatation and graduated Teflon dilators is reviewed. Techniques in treating different types of ureteral calculi were explored. Large calcium oxalate dihydrate stones were treated most efficiently with the 3-point fragmentation technique. The shear off-center technique was used for the calcium oxalate monohydrate calculi. Variations in total energy delivered and frequency of pulsation allowed for prompt stone disimpaction as well as prevention of retrograde fragment migration. Concurrent use of stone baskets and graspers with the pulsed dye laser was explored.

PMC Identifier

1992581 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=1992581>]

Status

Embase

Institution

(Grasso, Shalaby, El Akkad, Bagley) 1025 Walnut Street, Philadelphia, PA 19107, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

1991

Link to the Ovid Full Text or citation:

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989.

Results of the management of ureteric stones with the ureterorenoscope.

Lehtoranta K., Rannikko S., Lindell O., Lehtonen T.

Embase

Annales Chirurgiae et Gynaecologiae. 80(1) (pp 40-44), 1991. Date of Publication: 1991.

[Article]

AN: 21208613

Eighty ureterorenoscopies (URS) were performed for stone removal in 67 patients between January 1985 and April 1988. The success rates for stone removal were 54% in the lower third of the ureter, 70% in the middle third, 38% in the upper third, and 33% in the renal pelvis. The overall success rate was 42%. Open ureterolithotomy was performed after failed ureteroscopy nine times. There were two perforations of the ureter: one by the hook of the forceps and the other by the dormia basket. No significant late complications occurred in 51 patients after six to 36 months postoperatively. At the moment ureteroscopy is of value particularly in the treatment of lower or middle ureteric stones.

PMC Identifier

1888112 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=1888112>]

Status

Embase

Institution

(Lehtoranta, Rannikko, Lindell, Lehtonen) Urological Unit, Second Department of Surgery, University Central Hospital, Helsinki Finland

Publisher

Finnish Surgical Society (Makelankatu 2A, Helsinki SF-00500, Finland)

Year of Publication

1991

Link to the Ovid Full Text or citation:

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990.

The impact of extracorporeal piezoelectric lithotripsy on the management of ureteric calculi: An audit.

Parr N.J., Ritchie A.W.S., Moussa S.A., Tolley D.A.

Embase

British Journal of Urology. 67(1) (pp 18-23), 1991. Date of Publication: 1991.

[Article]

AN: 21075588

The presentation and management of 153 patients with ureteric calculi requiring active treatment over a 12-month period were reviewed; 74% of patients had primary ureteric calculi and 26% had ureteric calculi composed of fragments resulting from extracorporeal piezoelectric shockwave lithotripsy (EPL) to renal calculi; 32 patients (21%) had more than 1 calculus or a steinstrasse. The primary procedures included were in situ EPL (n = 54), push-bang (44), retrograde ureteroscopy (40), Dormia basket extraction (6), push-pull (1), antegrade ureteroscopy (1) and combinations of these (7). The success of the primary procedure could not be predicted from stone size, site or duration in the ureter, but upper tract dilatation was significantly less ($p < 0.01$) in the successful group. The overall success rate for complete stone extraction was 97%, but 54 patients (35%) required more than 1 procedure to achieve this. In situ EPL and push-bang, as either primary or secondary procedures, were successful in treating 79 patients (52%); 2 patients required ureterolithotomy (1.3%). The overall complication rate was 18%. Since EPL is only successful in treating approximately half of ureteric calculi, a range of other treatments should be available to maintain a low rate of open surgery.

PMC Identifier

1993271 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=1993271>]

Status

Embase

Institution

(Parr, Ritchie, Moussa, Tolley) Scottish Lithotripter Centre, Deaconess Hospital, 148 Pleasance, Edinburgh EH8 9RS, United Kingdom

Publisher

Blackwell Publishing Ltd. (9600 Garsington Road, Oxford OX4 2XG, United Kingdom)

Year of Publication

1991

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991.

Pulsed dye laser treatment of ureteral calculi.

Jensen V.J., Krarup T., Walter S.

Embase

Scandinavian journal of urology and nephrology. Supplementum. 138 (pp 31-33), 1991. Date of Publication: 1991.

[Article]

AN: 22892126

During a period of 20 months 36 patients with symptomatic ureteric stones were treated ureteroscopically with laser lithotripsy. A pulsed dye laser was used through a rigid or a semi-rigid ureteroscope. The laser emits impulses at a duration of 2 microseconds and a wavelength of 504 nm. Complete disintegration was obtained in 20 patients (56%), and further 7 patients became stonefree after supplementary basket extraction of residual fragments. In 4 patients additional treatment with ultrasound probe was necessary and further 5 patients were finally treated with ESWL. Five cases of minor perforations of the ureter required no other treatment than stenting with a ureter-catheter or a double J stent. With the new generation of slender semirigid ureteroscopes based on fiberoptics the ureteroscopic procedure is simplified, as no dilatation of preoperative preparation of the ureter is needed.

PMC Identifier

1785018 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=1785018>]

Institution

(Jensen, Krarup, Walter) Department of Urology, Aalborg Hospital, Denmark.

Year of Publication

1991

Link to the Ovid Full Text or citation:

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992.

An aid to rigid ureteroscopy - Stone basket.

Vijayan P.

Embase

British Journal of Urology. 68(2) (pp 215), 1991. Date of Publication: 1991.

[Short Survey]

AN: 21239757

PMC Identifier

1884159 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=1884159>]

Status

Embase

Institution

(Vijayan) Department of Urology, Hamad Medical Corporation, P.O. Box 3050, Doha, Qatar

Publisher

Blackwell Publishing Ltd. (9600 Garsington Road, Oxford OX4 2XG, United Kingdom)

Year of Publication

1991

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

[SFX](#)

993.

The treatment of patients with ureteral calculi by ureteroscopy and intracorporeal lithotripsy.

Lechenie bol'nykh s kamniami mochetochnika ureteroskopiei s intrakorporal'noi litotripsiei

<Lechenie bol'nykh s kamniami mochetochnika ureteroskopiei s intrakorporal'noi litotripsiei.>

Zerbib M., Flam T., Debre B., Steg A.

Embase

Urologiia i nefrologiia. (6) (pp 15-18), 1991. Date of Publication: 1991 Nov-Dec.

[Article]

AN: 22959956

Ureteroscopy with endocorporeal urinary stone lithotripsy (EUSL) implies an "in situ" stone fragmentation including or not a basket extraction of the fragments. EUSL needs three conditions: ureteronephroscopy (antegrade or retrograde), sources of energy (ultrasonic, electrohydraulic, laser), extraction devices (basket, grasping forceps). The paper reports the data on 120 ureteral stones treated by ureteroscopy and laser lithotripsy with an overall effect of 84%.

PMC Identifier

1823676 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=1823676>]

Year of Publication

1991

Link to the Ovid Full Text or citation:

[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

994.

Laser lithotripsy in the treatment of ureteral calculi.

Psihramis K.E., Buckspan M.B.

Embase

CMAJ. 142(8) (pp 833-835), 1990. Date of Publication: 1990.

[Article]

AN: 20165022

We examined the effectiveness of laser lithotripsy with a flash-lamp-pumped tunable dye laser in the treatment of ureteral calculi that were too large for direct extraction and that could not be treated with or had not responded to extracorporeal shock-wave lithotripsy (ESWL) or forms of uteroscopic lithotripsy other than laser lithotripsy. In 20 (74%) of the 27 patients the laser alone successfully fragmented the calculi into pieces small enough to pass spontaneously or to be easily extracted with a basket. In five (19%) laser lithotripsy was partially successful: another procedure (ESWL in three and fragmentation extraction with a basket in two) was needed. In two patients (7%) the stones could not be fragmented with the laser, and either ESWL or percutaneous antegrade extraction was performed. At follow-up 3 months after treatment there was no sign of stone fragments in 26 (96%) of the patients. We believe that laser lithotripsy is a safe and effective method of ureteral stone fragmentation.

PMC Identifier

1969767 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=1969767>]

Status

Embase

Institution

(Psihramis, Buckspan) Suite 441, Mount Sinai Hospital, 600 University Avenue, Toronto, Ont.
M5G 1X5, Canada

Publisher

Canadian Medical Association (1867 Alta Vista Drive, Ottawa K1G5W8, Canada)

Year of Publication

1990

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

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995.

Clinical experience with a new pulsed dye laser for ureteral stone lithotripsy.

Zerbib M., Flam T., Belas M., Debre B., Steg A.

Embase

Journal of Urology. 143(3) (pp 483-484), 1990. Date of Publication: 1990.

[Article]

AN: 20108129

We treated 45 patients (46 ureteral stones) with a new pulsed dye laser. A 250 mum. fiber was used through a rigid (40 stones) or flexible (6) ureteroscope. Stones were in the upper (5 cases), middle (5) or lower (36) third of the ureter. Stone composition was calcium oxalate dihydrate (34 patients) or monohydrate (7), struvite (2) or uric acid (2). Of the calculi 36 (78%) were fragmented, including 14 that also required simultaneous basket removal of fragments. Ten stones were not fragmented: 6 because of the pure monohydrate composition and 4 due to malfunction of the laser. No damage to the ureteral wall was noted. Retrograde rigid ureteroscopy with laser lithotripsy was effective for lower and middle third ureteral stones. Flexible ureteroscopy with laser lithotripsy was effective (impacted stones) but difficult for upper third ureteral stones.

PMC Identifier

2304158 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=2304158>]

Status

Embase

Institution

(Zerbib, Flam, Belas, Debre, Steg) Department of Urology, Hopital Cochin, Paris France

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

1990

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

[SFX](#)

996.

Radiographic imaging and urologic decision making in the management of renal and ureteral calculi.

Van Arsdalen K.N., Banner M.P., Pollack H.M.

Embase

Urologic Clinics of North America. 17(1) (pp 171-190), 1990. Date of Publication: 1990.

[Review]

AN: 20078658

Without question, significant changes, and for the most part significant advances, have been made in the management of patients with urolithiasis during the past decade. The newer therapeutic measures have generally made it easier for patients to be treated, but the decision-making process for the urologist has become more complex. In the past, the issue whether to follow a patient with a stone or to intervene with surgery or transurethral cystoscopic basketing was decided based on well-established guidelines that had developed over many years. Today, the indications for intervention appear to be less stringent, and in the minimally symptomatic or asymptomatic patient who would not have been operated on previously, there appears to be an expanding desire for prophylactic management. For whatever reasons, once it has been established that a stone is present and the decision has been made to intervene, subsequent decisions regarding the technical approach may also not be as simple as in the past. Ten years ago, for example, a stone in the abdominal ureter was removed by a ureterolithotomy, and the principal decision involved placement of the incision. Today, the same calculus may be approached by ESWL with or without a stent, by antegrade percutaneous techniques, or by retrograde ureteroscopic techniques using rigid or flexible endoscopes with baskets, ultrasonic lithotrites, or lasers. Although the specific indications for specific techniques continue to evolve, it has become evident that information obtained by the radiographic evaluation of the urinary tract is critical in the decision-making process. The intravenous urogram, including the initial plain film, remains the primary diagnostic modality and, in the absence of extenuating clinical features, is often the sole test required to make a decision regarding the best therapeutic modality. A variety of clinical features from the history or physical examination, or concerns raised by the intravenous urogram, may necessitate alternative or additional techniques to better define the anatomy, the renal function, or other pathology. The urologist therefore needs to be familiar with the information that can be obtained from the urologist's vast armamentarium in order to make the most appropriate recommendations to the patient for diagnosis and management.

PMC Identifier

2407015 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=2407015>]

Status

Embase

Institution

(Van Arsdalen, Banner, Pollack) Division of Urology, Hospital Univ. Pennsylvania, 3400 Spruce Street, Philadelphia, PA 19104, United States

Publisher

W.B. Saunders (Independence Square West, Philadelphia PA 19106-3399, United States)

Year of Publication

1990

Link to the Ovid Full Text or citation:

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997.

Management of the impacted ureteral calculus.

Morgentaler A., Bridge S.S., Dretler S.P.

Embase

Journal of Urology. 143(2) (pp 263-266), 1990. Date of Publication: 1990.

[Article]

AN: 20066365

The management of 42 impacted ureteral calculi is reviewed. Impacted stones were defined by the inability to pass a guide wire or catheter on initial attempts. Stones were impacted in the upper ureter in 10 patients, mid ureter in 11 and lower ureter in 21. Upper ureteral stones were treated in 8 patients by extracorporeal shock wave lithotripsy after disimpaction by laser or other techniques. Mid ureteral stones were treated by laser alone in 7 patients and by extracorporeal shock wave lithotripsy after disimpaction in 4. Lower stones were treated by laser in 17 patients and ultrasound in 2. Complications included 3 major and 5 minor perforations, and 4 false passages. Treatment was successful without an open operation in 40 of 42 patients (95%). Our

current approach to impacted ureteral calculi involves passing a rigid ureteroscope to the stone, with disimpaction performed by laser fragmentation or other dislodgement maneuvers. Proximal stones or large fragments then are treated by extracorporeal shock wave lithotripsy. Mid ureteral stones are treated similarly, unless they are so fragile that in situ fragmentation may be completed easily. Lower ureteral stones are fragmented in situ, with hard fragments extracted by basket. Alternative treatments for impacted calculi at all levels include unstented in situ extracorporeal shock wave lithotripsy, antegrade ureteroscopy and, finally, an operation.

PMC Identifier

1967657 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=1967657>]

Status

Embase

Institution

(Morgentaler, Bridge, Dretler) Massachusetts General Hosp., Fruit St., Boston, MA 02114, United States

Publisher

Elsevier Inc. (360 Park Avenue South, New York NY 10010, United States)

Year of Publication

1990

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Link to the External Link Resolver:

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998.

Laser lithotripsy of ureteral calculi: initial experience with a new pulsed dye laser.

Zerbib M., Steg A., Belas M., Flam T., Debre B.

Embase

The Journal of lithotripsy & stone disease. 2(1) (pp 39-41), 1990. Date of Publication: Jan 1990.

[Article]

AN: 22958397

Thirty-two patients with ureteral calculi ranging in size from 5 x 5 to 12 x 18 mm underwent lithotripsy with a new pulsed dye laser (Pulsolith, TMI). In 24 cases, the patients were entirely free of stones following laser lithotripsy alone, or with adjunctive stone basket removal. There were three instances of equipment failure and five calcium oxalate monohydrate stones that did not respond to laser energy.

PMC Identifier

10150123 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=10150123>]

Institution

(Zerbib, Steg, Belas, Flam, Debre) Department of Urology, University R. Descartes, Paris, France.

Year of Publication

1990

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

[SFX](#)

999.

Clinical experience with a new pulsed dye laser for ureteral stone lithotripsy.

Zerbib M., Flam T., Belas M., Debre B., Steg A.

Embase

Journal of clinical laser medicine & surgery. 8(6) (pp 31-33), 1990. Date of Publication: Dec 1990.

[Article]

AN: 22958489

Forty-five patients with 46 ureteral stones were treated using a new pulsed dye laser (Pulsolith, TMI). A fiber of 250 micrometers was used through rigid (40 cases) or flexible (6 cases) ureteroscopes. Stones were located in the upper third (5 cases), middle third (5 cases), or lower third (36 cases) of the ureter. Stone composition was calcium oxalate dihydrate or monohydrate, struvite, or uric acid in 34, 7, 2, and 2 patients, respectively. Thirty-six stones (78%) were fragmented, including 14 cases that required basket removal of fragments at the same time. Ten

stones were not fragmented, 6 because of the pure monohydrate composition and 4 due to a laser breakdown. No damage to the ureteral wall was noted. Retrograde rigid ureteroscopy with laser lithotripsy was effective for lower and middle third ureteral stones. Flexible ureteroscopy with laser lithotripsy was effective (impacted stones) but difficult for upper third ureteral stones. Laser lithotripsy was not effective for pure calcium oxalate monohydrate stones.

PMC Identifier

10150127 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=10150127>]

Institution

(Zerbib, Flam, Belas, Debre, Steg) Department of Urology, Hopital Cochin, Paris, France.

Year of Publication

1990

Link to the Ovid Full Text or citation:

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1000.

Percutaneous renal and ureteric stone extraction: Report on the first 500 operations.

Henriksson C., Geterud K., Grenabo L., Hedelin H., Naucler J., Pettersson S., Zachrisson B.F.

Embase

Scandinavian Journal of Urology and Nephrology. 23(4) (pp 291-297), 1989. Date of Publication: 1989.

[Article]

AN: 19277537

A consecutive series of the first 500 percutaneous renal and ureteric stone extractions in 451 patients was analysed. During the period studied, percutaneous extraction was offered to all patients with conventional indication for stone removal except a few, very early ureteric stone patients in whom open lithotomy was carried out. Ureteroscopy and extracorporeal shock wave lithotripsy had not come into routine use. Four hundred and seventy-eight stone operations (96%) could be performed by the percutaneous route; early in the series, 21 open operations and one

transurethral Dormia basket extraction were performed, mainly because of failed mobilisation of ureteric stones (12 patients) or various peroperative complications (9 patients). The target stones were completely removed in 88% of all percutaneous procedures, with the best results in the largest group of patients with 6-20 mm solitary stones or 2-3 stones ≤ 10 mm. Stones in the ureter and pelvi-ureteric junction without any other concomitant stones were all completely removed. Bleeding was the most frequent peroperative complication. No kidney was lost. An 84-year-old man died of intercurrent disease postoperatively.

PMC Identifier

2595325 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=2595325>]

Status

Embase

Institution

(Henriksson, Geterud, Grenabo, Hedelin, Naucler, Pettersson, Zachrisson) Department of Urology, University of Goteborg, Sahlgrenska Sjukhuset, Goteborg Sweden

Publisher

Informa Healthcare (69-77 Paul Street, London EC2A 4LQ, United Kingdom)

Year of Publication

1989

Link to the Ovid Full Text or citation:

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1001.

Ureteral access system. Technique and results.

Newman R.C.

Embase

Urologic Clinics of North America. 15(3) (pp 323-328), 1988. Date of Publication: 1988.

[Article]

AN: 18220018

The ureteral access set consisting of four coaxial Teflon dilators and a splinting 20F sheath facilitates ureteroscopy, basketing of stones or foreign bodies, stricture dilatation, and other procedures. The chief complication has been perforation, usually in patients with midureteral pathology; this is usually preventable. No sequelae have been seen to date.

PMC Identifier

3407025 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=3407025>]

Status

Embase

Institution

(Newman) Division of Urology, University of Florida College of Medicine, Gainesville, FL 32610

United States

Publisher

W.B. Saunders (Independence Square West, Philadelphia PA 19106-3399, United States)

Year of Publication

1988

Link to the Ovid Full Text or citation:

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1002.

Pulsed dye laser for treatment of ureteral calculi.

Segura J.W.

Embase

Urologic Clinics of North America. 15(2) (pp 257-262), 1988. Date of Publication: 1988.

[Article]

AN: 18155604

Endourologic access to the ureter and upper urinary tract has become a routine procedure in the last few years. Because of developments in instruments and technique, removal of ureteral stones via the rigid or flexible ureteroscope and percutaneous removal of stones from the kidney

through rigid and flexible nephroscopes are standard procedures. When such stones are too large to be removed intact with a basket or forceps, some method of power lithotripsy must be employed to break the stone up into manageable fragments. In this article, the use of the pulsed dye laser for this purpose is discussed.

PMC Identifier

3381373 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=3381373>]

Status

Embase

Institution

(Segura) Department of Urology, Mayo Clinic, Rochester, MN 55905 United States

Publisher

W.B. Saunders (Independence Square West, Philadelphia PA 19106-3399, United States)

Year of Publication

1988

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

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1003.

Removal of ureteral stones by ureteroscopy. ABLATION DES CALCULS URETERAUX PAR URETEROSCOPIE <ABLATION DES CALCULS URETERAUX PAR URETEROSCOPIE.>

Vallancien G., Veillon B., Charton M., Brisset J.M.

Embase

Presse Medicale. 14(16) (pp 889-892), 1985. Date of Publication: 1985.

[Article]

AN: 15092984

Ureteral stones can now be removed endoscopically, using a ureteroscope. This instrument, provided with a direct optic system and an operating tube, is introduced under general anaesthesia after the ureteral opening has been dilated and is pushed up until it reaches the

stone which is then removed by means of a basket catheter or a forceps. Voluminous stones can be shattered in situ by ultrasounds or hydroelectric shock waves. Forty-three stones, representing 72% of all attempts, were removed by 30 patients. There were six failures due to impassable vesico-ureteral opening, ureteral flexure and wedged in or ascended stone, and 4 complications including 2 cases where the basket catheter went under the mucosa and 1 case each of secondary urinoma and ureteral clotting. There was no perforation nor overt septic complication. Most stones were larger than 10 x 4.5 mm and were located in the pelvic or iliac part of the ureter. Infected stones can be removed endoscopically under antibiotic treatment and provided a draining catheter is left in place. Ureteroscopy notably reduces the need for ureteral lithotomy.

PMC Identifier

3158924 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=3158924>]

Status

Embase

Institution

(Vallancien, Veillon, Charton, Brisset) CMC de la Porte de Choisy, Departement d'Urologie, FNMFAE, F 75013 Paris France

Year of Publication

1985

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

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1004.

Ureteric calculi: Removal by ureteroscopy. LES LITHIASES URETERALES: EXERESE PAR URETEROSCOPIE <LES LITHIASES URETERALES: EXERESE PAR URETEROSCOPIE.>

Chailley J., Besancenez A.

Embase

Journal d'Urologie. 89(9) (pp 639-641), 1983. Date of Publication: 1983.

[Article]

AN: 14131854

The authors report the first 6 cases in the world of removal of ureteric stones under visual control with the aid of a rigid ureteroscope. In 5 of the 6 cases, the authors were able to extract the stone endoscopically. The only failure was a case in which the stone was too large for the Dormia basket. The only source of difficulty was passing the ureteric meatus. A very small meatotomy may be required. Only the future will tell whether this results in reflux.

PMC Identifier

6674378 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=6674378>]

Status

Embase

Institution

(Chailley, Besancenez) Clinique St-Gregoire, F 37100 Tours France

Year of Publication

1983

Link to the Ovid Full Text or citation:

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Link to the External Link Resolver:

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1005.

Transurethral ultrasonic ureterolithotripsy using a solid-wire probe.

Chaussy C., Fuchs G., Kahn R.

Embase

Urology. 29(5) (pp 531-532), 1987. Date of Publication: 1987.

[Article]

AN: 17070646

A multicenter study evaluates a new technique for transurethral ultrasonic ureterolithotripsy utilizing a solid-wire probe. The transverse vibrations of the probe cause greater stone disintegration. A small ureteroscope is used and a basket is not required. There was a 96.6 per cent success rate in 118 cases. This technique has significantly improved ultrasonic lithotripsy. It

has proved to be useful for upper ureteral stones not amenable to extracorporeal short-wave lithotripsy and lower ureteral stones including 'steinstrasse'.

PMC Identifier

3576873 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=3576873>]

Status

Embase

Institution

(Chaussy, Fuchs, Kahn) Department of Urology, University of California at Los Angeles, Los Angeles, CA United States

Year of Publication

1987

Link to the Ovid Full Text or citation:

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1006.

Complications of ureteral endoscopy.

Lytton B., Weiss R.M., Green D.F.

Embase

Journal of Urology. 137(4) (pp 649-653), 1987. Date of Publication: 1987.

[Article]

AN: 17058671

Use of the rigid ureterorenoscope has become widely accepted for the diagnosis of ureteral lesions, and for the removal and disintegration of ureteral calculi. Few complications have been reported. During the last 3 years 128 ureteroscopic procedures were performed for a variety of indications (98 for stone disease). There were 26 complications: 22 minor with no morbidity and 4 major that required surgical correction. Minor complications consisted of asymptomatic ureteral perforations in 6 patients, perforations with urinary extravasation, pain, ileus or fever in 4, migration of the stone into the kidney in 10 and migration of the stone outside the ureter with the

calculus left in situ in 2. Major complications included ureteral perforation during basket extraction of an upper ureteral stone, urinoma following perforation and requiring drainage, stenosis of the intramural ureter that was corrected by marsupialization and aseptic necrosis of the ureter that was treated by ileal replacement.

PMC Identifier

3550147 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=3550147>]

Status

Embase

Institution

(Lytton, Weiss, Green) Section of Urology, Yale University School of Medicine, New Haven, CT

United States

Year of Publication

1987

Link to the Ovid Full Text or citation:

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1007.

A new application for the removal of caliceal renal stones with the rigid ureteropyeloscope.

Leal J.J.

Embase

Journal of Urology. 137(2) (pp 268-269), 1987. Date of Publication: 1987.

[Article]

AN: 17016648

Stone migration into the kidney can result in failure to remove a ureteral stone with a ureteroscopy. A new application with the rigid ureteropyeloscope was used to remove a ureteral stone that had migrated into a lower renal calix. Under fluoroscopic control a 9F catheter was advanced next to the stone through the emptied sheath of the ureteropyeloscope whose tip was

in the upper ureter. Then a basket was placed through the catheter and was used to trap and remove the stone.

PMC Identifier

3806817 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=3806817>]

Status

Embase

Institution

(Leal) Department of Urology, Wuesthoff Memorial Hospital, Rockledge, FL United States

Year of Publication

1987

Link to the Ovid Full Text or citation:

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1008.

Ureteric stone surgery in practice.

Bishop M.C., Lawrence W.T., Lemberger R.J.

Embase

British Journal of Urology. 59(2) (pp 137-141), 1987. Date of Publication: 1987.

[Article]

AN: 17018856

From 1983 to 1986 140 patients underwent surgery for ureteric calculus. In approximately 30% 'blind' basket extraction was considered appropriate and continued to be effective. Increasing expertise with the rigid ureterorenoscope led to a considerable reduction in open ureterolithotomy (15% in 1985-86), the majority following failed ureteroscopic extraction. In the same year both 'blind' basket extraction and ureteroscopy were successful in 82 and 86% of attempts respectively. Electrohydraulic and ultrasonic lithotripsy were used in 12 patients to reduce large impacted calculi. The commonest complication of ureteroscopic stone surgery was perforation; this occurred in 14% of cases, though it was usually trivial and near the vesicoureteric junction.

Perforations higher in the ureter tended to follow endoscopic lithotripsy and were often associated with urinary extravasation. Extra-ureteric stone fragments were also occasionally observed in such cases. There were no serious sequelae, although the in-patient stay was prolonged beyond the 48 h customary for uncomplicated extraction. The results suggest that ureteroscopic stone extraction, which can be conveniently introduced into urological practice, should become a standard endoscopic procedure.

PMC Identifier

3828708 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=3828708>]

Status

Embase

Institution

(Bishop, Lawrence, Lemberger) Department of Urology, City Hospital, Nottingham NG5 1PB

United Kingdom

Year of Publication

1987

Link to the Ovid Full Text or citation:

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1009.

Ureteroscopy and ureteric calculi: How useful?.

Kinder R.B., Osborn D.E., Flynn J.T., Smart J.G.

Embase

British Journal of Urology. 60(6) (pp 506-508), 1987. Date of Publication: 1987.

[Article]

AN: 18002591

The results of management in 134 patients admitted to hospital during 1985 with ureteric colic are presented in relation to the size and position of a ureteric stone. Spontaneous passage of a stone occurred in 100 patients and 34 required surgical intervention. Stones measuring 5 mm or less in

maximum dimension passed spontaneously in 92% of cases; stones measuring 6 mm or more had only a 28% chance of passing. Of 34 surgical procedures 19 were endoscopic. In three cases a stone was removed under vision with ureteroscope and Dormia basket. In five patients ureteric dilatation before attempted ureteroscopy permitted later passage of the stone. In 1986 similar results were obtained with ureteroscopic stone removal performed in three cases. Fewer open operations and more Dormia basket extractions were performed in 1986. In this series the size of the stone was closely related to outcome. The high chance of spontaneous passage (75% in 1985 and 84% in 1986) puts the need for surgical intervention, and in particular ureteroscopy, into perspective in the management of patients with ureteric colic.

PMC Identifier

3427333 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=3427333>]

Status

Embase

Institution

(Kinder, Osborn, Flynn, Smart) Department of Urology, General Hospital, Leicester United

Kingdom

Publisher

Blackwell Publishing Ltd. (9600 Garsington Road, Oxford OX4 2XG, United Kingdom)

Year of Publication

1987

Link to the Ovid Full Text or citation:

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1010.

Extracorporeal shock wave lithotripsy. Noninvasive treatment for urinary stones.

Kramolowsky E.V., Loening S.A.

Embase

Postgraduate Medicine. 79(8) (pp 69-74), 1986. Date of Publication: 1986.

[Article]

AN: 16071016

As with many new treatments in medicine, time will determine the place of extracorporeal shock wave lithotripsy (ESWL) in management of urinary calculi. It may be that a combination of methods will prove most effective. However, at the present time, ESWL provides a noninvasive means of fragmenting calculi so that stones that were previously manageable only by invasive techniques potentially can be passed from the urinary tract. ESWL is a 30- to 45-minute treatment that yields a 50% to 75% stone-free rate at three months after the procedure. Of course, interpretation of success rates can vary on the basis of patient selection and the size, position, and composition of the stone. At this point, ureteroscopy and cystoscopic stone basketing remain the treatments of choice for low ureteral stones. Nonetheless, ESWL is an exciting new weapon in our battle against stone disease.

PMC Identifier

3714596 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=3714596>]

Status

Embase

Institution

(Kramolowsky, Loening) Department of Urology, University of Iowa Hospitals and Clinics, Iowa City, IA 52242 United States

Year of Publication

1986

Link to the Ovid Full Text or citation:

[Click here for full text options](#)

Link to the External Link Resolver:

[SFX](#)

1011.

Anterograde ureteroscopy in the extraction of lumbar ureteral calculi. Ureteroscopie par voie antegrade dans l'extraction des calculs de l'uretere lombaire <Ureteroscopie par voie antegrade dans l'extraction des calculs de l'uretere lombaire.>

Vallancien G., Capdeville R., Veillon B., Charton M., Brisset J.M.

Embase

Annales d'urologie. 20(3) (pp 166-170), 1986. Date of Publication: 1986.

[Article]

AN: 16738634

Antegrade ureteroscopy can be used to extract certain lumbar ureteric stones in which the only alternative treatment is surgery. The technique of caliceal puncture is that of percutaneous nephrostomy: the ureteroscope is introduced through the Amplatz tube. The ureteric stone is removed by a basket probe, two-pronged forceps or hydroelectric shattering, 16 patients have undergone antegrade ureteroscopy; a rigid ureteroscope was used in 9 cases (2 residual fragments including 1 which migrated) and a flexible ureteroscope was used in 7 cases (3 failures). The overall success rate for the technique of 68% should improve with better selection of the indications (stone with a maximum diameter of 12 mm without retraction of the adjacent ureter and without kinking of the excretory tract) and with greater experience of the operators.

PMC Identifier

3729298 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=3729298>]

Year of Publication

1986

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1012.

Transurethral ureteroscopic removal of ureteral calculi.

Kawamura N., Nishimura T., Akimoto M.

Embase

Hinyokika kiyo. Acta urologica Japonica. 32(4) (pp 533-539), 1986. Date of Publication: Apr 1986.

[Article]

AN: 16742045

Rigid ureteroscopy was used for transurethral removal of ureteral stones. Calculi were extracted under direct vision using flexible grasping forceps or a stone basket. If the size of the stone precluded the use of these techniques, we disintegrated the stone using an electro-hydraulic lithotripter (EHL) or ultrasonic lithotripter (USL). Between January, 1985 and October, 1985, 35 ureteroscopic procedures were performed for removal of ureteral stones. In 27 cases (77%) the stone was removed successfully. All stones could be removed in mid and lower ureter. However, in upper ureter, the success rate was only 50%. In 8 instances, ureteroscopy failed to remove the ureteral calculus and 6 underwent percutaneous nephrolithotomy, 2 open surgery. Of the ureteral stones, 12 were removed with grasping forceps or a basket manipulation. EHL and USL were used successfully to remove calculi in 15 cases. To make smooth passage of the ureteroscope, a 6F UPJ occlusion balloon catheter was introduced into the ureter and the balloon was inflated in the intramural ureter for 24 hours preoperatively. We have found this to be a useful procedure for smooth passage of the ureteroscope. Most common complication of ureteroscopic stone removal was fever (29%). In 1 case, the ureter was penetrated by the scope. The patient was treated with an indwelling ureteral catheter for 2 weeks. After the catheter was removed, an excretory urogram demonstrated normal ureter without extravasation or obstruction. We conclude that ureteroscopic stone removal can be done safely with careful passage of the scope and careful manipulation of calculi.

PMC Identifier

3739860 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=3739860>]

Year of Publication

1986

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1013.

Extracorporeal shock-wave lithotripsy for upper urinary tract calculi. One year's experience at a single center.

Riehle Jr. R.A., Fair W.R., Vaughan Jr. E.D.

Embase

Journal of the American Medical Association. 255(15) (pp 2043-2048), 1986. Date of Publication: 1986.

[Article]

AN: 16167490

Four hundred sixty-seven patients with symptomatic upper urinary tract calculi underwent extracorporeal shock-wave lithotripsy (ESWL) at The New York Hospital-Cornell Medical Center during the first year. Ninety-five percent of stones were completely treated with one ESWL session. An analysis of 300 treatments revealed that the overall stone-free rate (success) three months after treatment was 75%. The stone-free rate for patients with renal pelvic calculi less than or equal to 20 mm in diameter was 91%. Individual patient stone-free rates depended on stone size (burden), position, composition, and quality of disintegration. Two percent of treatments failed to disintegrate the targeted stone. Complications were minimal. Seven percent of treatments were followed by a secondary endoscopic procedure to facilitate complete stone passage, and 23% of treatments were preceded by cystoscopy with ureteral stent placement or manipulation of stones. Combined therapy utilizing percutaneous surgery or multiple sequential ESWL treatments is necessary for complex stones, and ureteroscopy or basket extraction remains the treatment of choice for distal ureteral calculi.

PMC Identifier

3514972 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=3514972>]

Status

Embase

Institution

(Riehle Jr., Fair, Vaughan Jr.) Division of Urology, Department of Surgery, The New York Hospital-Cornell Medical Center, New York, NY 10021 United States

Year of Publication

1986

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1014.

Endourological treatment of ureteral calculi.

Kahn R.I.

Embase

Journal of Urology. 135(2) (pp 239-243), 1986. Date of Publication: 1986.

[Article]

AN: 16131347

Endourological treatment of ureteral calculi can be highly successful and result in low morbidity rates. Several techniques are described that have a primary role and that serve as backup, including retrograde flushing, flexible nephroscopy, antegrade fluoroscopic basket, ultrasonic lithotripsy, ureteroscopy, chemolysis, and a combined antegrade and retrograde method. With these methods 114 of 120 consecutive patients with ureteral stones (95 per cent) underwent successful removal. The association number of complications was low, with most patients being treated conservatively.

PMC Identifier

3944852 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=3944852>]

Status

Embase

Institution

(Kahn) Department of Urology, San Francisco General Hospital, San Francisco, CA United States

Year of Publication

1986

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1015.

Early experience with direct vision electrohydraulic lithotripsy of ureteral calculi.

Green D.F., Lytton B.

Embase

Journal of Urology. 133(5) (pp 767-770), 1985. Date of Publication: 1985.

[Article]

AN: 15036402

Rigid ureteroscopy is now an established technique for the management of ureteral stones. Manipulation of calculi can be done under direct vision using flexible forceps or stone baskets with increased safety and efficacy. We also have used a 5F electrohydraulic lithotripsy electrode to disintegrate stones that were too large to be removed by manipulation. Between October 1982 and January 1984, 36 ureteroscopies were performed for the removal of ureteral stones. In 26 cases (72 per cent) the stone was removed successfully. Electrohydraulic lithotripsy was used successfully to remove the stone in 9 cases (24 per cent) and there were no immediate complications. Followup with excretory urography in 7 of these patients 2 to 18 months after lithotripsy failed to reveal any evidence of long-term complications. We conclude that electrohydraulic lithotripsy under direct vision can be done safely if certain guidelines are adhered to strictly.

PMC Identifier

3872945 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=3872945>]

Status

Embase

Institution

(Green, Lytton) Section of Urology, Yale University School of Medicine, New Haven, CT United States

Year of Publication

1985

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1016.

Transurethral ureteroscopic retrieval of ureteric stones.

Ford T.F., Watson G.M., Wickham J.E.A.

Embase

British Journal of Urology. 55(6) (pp 626-628), 1983. Date of Publication: 1983.

[Article]

AN: 14203903

This report documents our initial experience in the transurethral retrieval of ureteric stones using the rigid ureteroscope. Ten patients are included. Half of the stones were located in the lower one-third of the ureter and half in the upper two-thirds. They varied in size from 5 to 10 mm in diameter. Seven were successfully extracted at the first attempt using stone baskets under direct vision. Of the remaining 3, one was retrieved at a second ureteroscopy, one was fragmented and subsequently passed and one required percutaneous nephroscopy for its removal from the renal pelvis. It is concluded that transurethral ureteroscopy offers a safe alternative to both open ureterolithotomy and blind manipulation.

PMC Identifier

6652428 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=6652428>]

Status

Embase

Institution

(Ford, Watson, Wickham) St Peter's Hospitals, London United Kingdom

Year of Publication

1983

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1017.

Transurethral removal of large uretral and renal pelvic calculi using ureteroscopic ultrasonic lithotripsy.

Huffman J.L., Bagley D.H., Schoenberg H.W., Lyon E.S.

Embase

Journal of Urology. 130(1) (pp 31-34), 1983. Date of Publication: 1983.

[Article]

AN: 13026575

Transurethral ultrasonic fragmentation of stones allows successful endoscopic removal of upper urinary calculi that otherwise would be considered too large to extract. We successfully extracted endoscopically 2 large renal pelvic and 5 large uretral stones using transurethral ureteropyeloscopy and ultrasonic lithotripsy. The stone is visualized first with the ureteropyeloscope, and then engaged in a basket and either fragmented or disintegrated with the ultrasonic transducer. Any remaining small stone fragments can be retrieved with a stone basket or forceps. There has been little morbidity with this procedure and patients can return to normal activity after discharge from the hospital.

PMC Identifier

6864909 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=6864909>]

Status

Embase

Institution

(Huffman, Bagley, Schoenberg, Lyon) Sect. Urol., Dep. Surg., Univ. Chicago, Pritzker Sch. Med., Chicago, IL United States

Year of Publication

1983

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Treatment of distal ureteral calculi using rigid ureteroscope.

Huffman J.L., Bagley D.H., Lyon E.S.

Embase

Urology. 20(6) (pp 574-577), 1982. Date of Publication: 1982.

[Article]

AN: 13221216

Rigid transurethral ureteroscopy has been utilized on sixteen occasions for the treatment of distal ureteral calculi. This resulted in successful stone removal and avoidance of an open operation in 69 per cent of the cases. The advantages of this type of treatment are that it enables endoscopic access to a surgically difficult portion of the ureter and allows direct visualization during basket manipulation of ureteral calculi.

PMC Identifier

7179619 [<http://www.ncbi.nlm.nih.gov/pubmed/?term=7179619>]

Status

Embase

Institution

(Huffman, Bagley, Lyon) Sect. Urol., Dep. Surg., Univ. Chicago Pritzker Sch. Med., Chicago, IL

United States

Year of Publication

1982

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