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Is robotic approach useful to palliate advanced bladder cancer? A monocentric single surgeon experience

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Introduction The aim of this study was to assess surgical and functional outcomes of 17 consecutive patients undergoing robot- assisted radical cystectomy (RARC) with palliative intent in a monocentric single surgeon series.

Material and methods We collected data from 17 consecutive patients who underwent RARC with palliative intent performed by a single surgeon at our institution. Patients undergoing palliative RARC were those with advanced bladder cancer (BC) or advanced comorbidities. Clinical, surgical and functional outcomes were prospectively collected. Patients completed a specific questionnaire (Functional Assessment of Cancer Therapy-Bladder Cancer, FACT-BL) before and after surgery to assess the role of palliative RARC in terms of quality of life improvement.

Results Median age at surgery was 78 years, with median Charlson Comorbidity Index (CCI) and age-adjusted CCI of 3 and 7, respectively. Clinical stage was T2, T3 or T4 in 7, 8 and 2 patients respectively, with 52.9% and 29.4% with cN+ and cM+ disease. Median estimated blood loss was 200 ml, with 1 patient requiring intraoperative blood transfusion. Median hospital stay was 7 days. A total of 3 and 2 patients were re-hospitalized during the first 30 and 30–90 post-operative days, respectively. One major Clavien grade complication was recorded.

At median follow-up of 8 months, 9 and 2 patients succumbed due to tumor progression and other causes. Pre-operative and post-operative FACT-BL scores improved significantly in each domain.

Conclusions A RARC is a safe and feasible technique which could be offered as part of palliative care in patients with advanced BC or comorbidities. Precise guidelines for palliating BC patients should be better.

Key Words: bladder cancer ‹› palliative care ‹› robot-assisted radical cystectomy

INTRODUCTION

Bladder cancer (BC) represents the 9th most commonly diagnosed cancer and the 13th cause of death in the world, with increasing incidence among elderly patients [1].

In western countries, about 25% of newly diagnosed BC are muscle-invasive BC (MIBC) and 10–30% of non-muscle-invasive BC (NMIBC) will progress to muscle-invasive disease, with nearly half of these patients succumbing due to tumor progression [2, 3, 4]. 5% to 15% present unresectable or metastatic disease at time of diagnosis [5]. Patients succumbing due to BC often present with disseminated disease and symptomatic metastases [6, 7]. Prognosis of advanced and/or metastatic BC is generally extremely poor and treatment is palliative. Patients with advanced bladder cancer often present with hardly bearable symptoms, such as chronic pelvic pain, urgency, hematuria and palliative cystectomy is performed to ease symptoms and perhaps improve their quality of life (QoL). Palliative care has been widely described for other

malignancies, but we still lack precise guidelines about palliation in BC patients [8, 9, 10].
Robot-assisted radical cystectomy (RARC) was firstly described in 2003 aiming to minimize invasiveness and trying to reduce surgical complications [11]. Nonetheless, despite a gradual increase of tertiary centers routinely performing RARC we still lack a clear evidence of superiority of robotic approach as compared to laparotomy, with open radical cystectomy (ORC) still representing the gold standard [12]. A recent randomized controlled trial reported reduced estimated blood loss (EBL), inferior transfusion rates and shorter hospital stay of RARC vs. ORC, with longer operative times, higher costs, and comparable complications rates and oncologic control [13].
The aim of this study is to present data from 17 consecutive patients who underwent RARC with palliative intent at our institution, to assess the potential role of minimally invasive surgery in this subset of BC patients.

MATERIAL AND METHODS

We prospectively collected data from 17 consecutive patients who underwent RARC with palliative intent at our institution between January 2015 and November 2018. Each patient received uretero-cutaneostomy as urinary derivation. Patients undergoing palliative RARC were those with advanced BC or serious comorbidities, namely clinical T3b/T4, N+ or M+ disease or Charlson Comorbidity Index (CCI) ≥3. CCI is the most commonly used score to assess comorbidities and to assess overall life expectancy of patients undergoing surgical procedures [14]. Local, nodal and systemic status were assessed with whole body contrast enhanced computed tomography (CE-CT), magnetic resonance imaging (MRI) and bone scan.
Each case was discussed in a multi-disciplinary meeting (including a urologist, oncologist, radiologist, radiotherapist and dedicated pathologist) and a proper informative consent was expressed by each patient. Neo-adjuvant chemotherapy was given according to multi-disciplinary decision and consisted of 4 cycles of platinum-based chemotherapy. Each surgical procedure was performed by a single surgeon (A.P.), after attending an intensive modular training program at a referral European tertiary center, supervised by a worldwide recognized mentor (P.W.) [15]. During our series, surgeons from another tertiary center participated as table assistants as a part of a modular training. Surgical procedure was performed as previously described without major modifications [16]. Female patients also received hysteroannessiectomy as part of the surgical procedure, although one patient already underwent laparoscopic hysteroannessiectomy. Patients with a carcinoma in situ (CIS) at the urethral frozen section also underwent perineal urethrectomy at the end of the surgical procedure. A validated specific questionnaire, Functional Assessment for Cancer Therapy – Bladder Cancer (FACT-BL) version 4 was translated in Italian and administered to patients before surgery and a month after surgery [17].
For each patient we reported clinical, peri-operative data, post-operative complication within 3 months graded according to Clavien-Dindo classification, pre- and post-operative FACT-BL scores, cancer specific and overall survival status. Post-operative complications were labelled as 'early' or 'late' if occurred within 30 days after surgery or between 30 and 90 post-operative days, respectively.

Statistical analyses

Statistical elaborations were performed using SPSS® version 21.0 (IBM Corp, Armonk, NY) for Macintosh®. Continuous variables were reported as me-

Table 1. *Overall demographic and clinical features of patients undergoing RARC with palliative intent*

Number of patients (%)	17 (100)
Sex (%)	
Male	13 (76.5)
Female	4 (23.5)
Age at surgery	
Median	78
IQR	73-82
CCI	
Median	3
IQR	2-4
BMI	
Median	24
IQR	22.5-26.1
Related symptoms (%)	
Haematuria	5 (29.4)
Pelvic pain	6 (35.3)
Frequent urination	3 (29.4)
Weight loss	4 (23.5)
Pre-operative stage (%)	
T1	0 (0)
T2	7 (41.2)
T3	8 (47.1)
T4	2 (11.8)
cN+	9 (52.9)
cM+	5 (29.4)
Concomitant CIS (%)	3 (17.6)
Previous BCG instillation (%)	4 (23.5)
Neo-adjuvant CHT (%)	4 (23.5)

RARC – robot-assisted radical cystectomy; IQR – interquartile range; CCI – Charlson Comorbidity Index; BMI – body mass index; cN – clinical nodal status; cM – clinical metastases status; CIS – carcinoma in situ; BCG – bacillus of Calmette Guérin; CHT – chemotherapy

dians with interquartile ranges and means+/-standard deviation, whereas categorical variables were expressed as frequencies with proportions. Wilcoxon signed-ranked test was used to compare medians of pre- and post-operative scores of FACT-BL domains. An alpha value of 5% was set to be the threshold to determine statistical significance.

RESULTS

Table 1 reports demographics of 17 patients who underwent RARC with palliative intent.

Median age at surgery was 78 years, 13 (76.5%) patients were male, median body mass index was 24 with median CCI and age-adjusted CCI of 3 and 7, respectively.

A total of 41.2%, 47.1% and 23.5% patients had a T2, T3 or T4 stage respectively, 52.9% patients had clinical node positive disease and 29.4% had bone/organ metastasis at surgery.

Carcinoma in situ (CIS) was associated in 17.6%, 4 (23.5%) previously received bladder instillations with bacillus of Calmette-Guérin and 4 (23.5%) received neo-adjuvant chemotherapy.

Patients reported persistent hematuria, unresponsive pelvic pain, frequent urination and sudden weight loss in 29.4%, 35.3%, 29.4% and 23.5% of cases respectively.

Median operative time was 320 minutes, urethrectomy was performed in 3 patients, with median EBL of 200 ml and only 1 individual receiving intra-operative blood transfusion (Table 2). Three (75%) women underwent hysteroannessiectomy as part of the surgical procedure, with no uterine or ovarian tumor detected at pathologic examination. Pathologic stage was T2, T3, T4a and T4b in 2 (11.8%), 5 (29.4%), 9 (52.9%) and 1 (5.9%) patients, respectively. Prostate cancer (PCa) was detected in 7 (23%) male patients, each with International Society of Urological Pathology (ISUP)

Table 2. *Surgical and pathologic data of 17 consecutive patients who underwent palliative RARC at our Institution*

	Overall
Total operative time (min)	
Median	320
IQR	260-370
Estimated blood loss (ml)	
Median	200
IQR	160-250
Intraoperative blood transfusions (%)	1 (5.9)
Urethrectomy (%)	3 (17.6)
Hysteroannessectomy (%)°	3 (75)
Pathologic stage (%)	
T0-T1	0 (0)
T2	2 (11.8)
T3	5 (29.4)
T4a	9 (52.9)
T4b	1 (5.9)
Positive surgical margins (%)	2 (11.8)
Histotype (%)	
TCC	16 (94.1)
SCC	1 (5.9)
Incidental PCa (%)*	3 (23)
Gleason grade group**	
1	3 (100)
2	0 (0)
3-5	0 (0)
Positive PCa margins (%)***	0 (0)

IQR – interquartile range; UCS: uretero-cutaneostomy; CIS – carcinoma in situ; TCC – transitional cell carcinoma; SCC – squamous cell carcinoma; PCa – prostate cancer
*among male patients
**among male patients with concurrent PCa
***patients with positive lymph nodes
°among female patients

Table 3. *Post-operative outcomes and complications of patients who underwent palliative RARC*

	Overall
Hospital stay (days)	
Median	7
IQR	6–9
Early p.o. Clavien grade complications	
I	5 (29.4)
II	3 (17.6)
III	0 (0)
IV	0 (0)
V	0 (0)
Early p.o. complications (%)	
UTI	5 (9.5)
Paralytic ileus	3 (9.5)
<30-day readmission rate (%)	3 (17.6)
Late p.o. Clavien grade complications (%)	
I	1 (0)
II	1 (11.8)
III	1 (5.9)
IV	0 (0)
V	0 (0)
Late p.o. complications (%)	
UTI	2 (11.8)
Ureteral stenosis	1 (5.9)
>30 and <90-day re-admission rate (%)	2 (11.8)
90-day mortality (%)	2 (11.8)*
CSM (%)	9 (52.3)
OCM (%)	2 (11.8)
Follow up (months)	
Median	8
IQR	5–11

IQR – interquartile range; p.o.: post-operative; UTI – urinary tract infection; CSM – cancer specific mortality; OCM – other causes of mortality
*deceased due to tumor progression

grade 1 disease, respectively. Positive surgical BC margins were 11.8%, whereas no surgical margins were detected for PCa.

Median hospital stay was 7 days (Table 3). During the first 30 post-operative days, 8 patients developed low- grade complications, with 3 individuals re-admitted for receiving intra-venous antibiotics for urinary tract infections. Two patients developed late post-operative complications, with 1 requiring further hospitalization for receiving intravenous antibiotics and percutaneous nephrostomy placement. 2 patients died at 2 months due to tumor progression. At the median follow-up of 8 months, 9 (52.9%) and 2 (11.8%) patients died due to tumor progression and other causes, respectively.

Table 4 reports pre- and post-operative FACT-BL scores. Functional well-being (pre- vs. post- operative 18 vs. 15, respectively, p. <0.001), social well-being (12 vs. 14, p = 0.001), emotional well-being (16 vs. 12, p <0.001) and functional well-being (14 vs. 18, p <0.001) significantly improved after palliative RARC.

DISCUSSION

Palliative care for BC is a still highly uncharacterized issue, with no precise guidelines and indications. American Society of Clinical Oncology recommends early palliative care for patients affected by advanced malignancies, late-stage disease, distant metastasis or life expectancy of 624 months [8, 18]. Hugar et al. recently reported, though, that only 4% with patients affected by advanced BC or advanced comorbidities actually undergo palliative treatments among Medicare beneficiaries [8].

Table 4. *Pre- and post-operative FACT-BL scores of patients who underwent palliative RARC*

	Pre-operative	Post-operative	p-value
Physical well-being			
Median	18	15	<0.001*
IQR	16–22	11–16	
Social well-being			
Median	12	14	0.001*
IQR	10–15	12–16	
Emotional well-being			
Median	16	12	<0.001*
IQR	14–18	10–14	
Functional well-being			
Median	14	18	<0.001*
IQR	13–17	16–19	

FACT-BL – functional assessment cancer therapy-bladder cancer; IQR – interquartile range
CSM – cancer-specific mortality; SD – standard deviation; IQR – interquartile range; OCM –other causes of mortality

One-fifth of BC in western countries presents as inoperable or metastatic at first diagnosis [19]. The current gold standard for treatment of locally advanced or metastatic bladder cancer remains cisplatin-based chemotherapy with increase in overall survival from 3–6 months to 14 months, with a 40–70% response rate [20]. The best response rate was observed in BC patients with good performance status, preserved renal function, complete response and nodal metastasis as compared to those with visceral metastasis [3, 21]. Surgery is sometimes used to consolidate a good response to first line chemo-therapy, even in cases with limited lymph node (LN) metastases or sometimes solitary lung metastasis [3]. Immunotherapy has further increased the role of surgery to reduce the tumor burden.

As evidenced by Herr et al., in a series of 80 patients with an unresectable tumor (T4NxMx) or an inoperable tumor (T3-T4, N2-N3, M0-M1) immunotherapy allowed tumor resection in 32 patients, of those half received a complete tumor resection and one third of them survived at 5 years [22]. Patients with T4b disease or intractable hematuria may require surgery to relieve symptoms, but due to high morbidity other less invasive treatments such a radiotherapy should be considered as the first line of therapy [3, 23]. Lebret et al. concluded that surgery alone for advanced/metastatic BC is not enough to eradicate a systemic disease and to reduce symptoms, as it should always be a complement to chemotherapy [24]. In our relatively small series we aimed to evaluate the role of RARC in a series of 17 advanced/metastatic BC. Robotic cystectomy was firstly introduced to reducing surgical distress of BC patients undergoing surgery when compared to ORC, aiming at decreasing surgical complications and hospital stay with comparable oncologic outcomes to laparotomic approach.

Parekh et al., recently reported data from the first randomized trial comparing RARC to ORC and thus confirming a non-inferiority of robotic approach, with reduced EBL, blood transfusion, hospital stay but similar complication to ORC.

Though, as reported for prostate cancer treatment, despite being related to significantly higher costs, it could still improve functional and emotional outcomes of patients affected by a neoplastic disease [25, 26, 27].

In our study we attempted to assess the benefit of robotic surgery in a palliative care context. Hence, our goal wasn't curative, but we aimed to palliate symptoms and reduce general distress in a subset of patients with very poor life expectancy.

Despite a small number of patients included, some results should be underlined. First, when consid-

ering surgical outcomes median EBL (200 ml), the number of intra-operative transfusion (5.9%), positive surgical margins (11.8%), median operative time, despite advanced local, with median hospital stay of 7 days are remarkable. Pasadena Consensus Panel indicated that RARC surgical proficiency is reached generally after 20–30 procedures, with EBL <400 ml with <15% of positive surgical margins and operative time <400 minutes as proofs of proficiency [28]. Our series was performed throughout the learning curve of a single surgeon, thus further affirming the need of a skilled mentorship to begin performing this highly challenging procedure and the importance of a high surgical volume to master this technique [29]. In fact, RARC, especially in case of advanced BC, should be limited to only tertiary high-volume centers.

Second, complication rates were quite low, with 9 (42.9%) complications overall during first 90 post-operative days, of those only 3 were high Clavien grade and required a further surgical procedure. According to many authors [30, 31, 32], despite mini-invasiveness, RARC is nonetheless related to a 60–80% post-operative complications. Furthermore, the only randomized controlled trial available comparing RARC to ORC confirmed a comparable rate of post-operative complications between laparotomic and robotic approach [13]. Patients included in our study, though, shared a poor prognosis given advanced BC and/or comorbidities, with most deemed as unfit for neo-adjuvant chemotherapy, with only 6 individuals still alive at 8 post-operative months. A short hospital-stay and low complication rates could afford a relatively quicker recover and the chance of undergoing eventual further therapies. The only high-grade late complication recorded was ureteral stenosis, which is one of the most common late complication after RC. Despite open surgery being still considered as the gold standard, its management could still be 'less-invasive' with good surgical results, as reported by other authors [33, 34], without adding further surgical distress.

Third, pre- and post-operative FACT-BL scores significantly improved despite a nonetheless poor prognosis. FACT-BL is a validated, bladder cancer specific questionnaire, with different items exploring physical, social, emotional and functional well-being [17]. The removal of the primary tumor in some cases partially palliated symptoms, thus improving overall quality of life.

A significant proportion of patients undergoing palliative RARC in our series reported pre-operative chronic hematuria, unbearable pelvic pain or frequent urination and, despite being adequately informed about potential surgical complications and the palliative nature of surgery itself, still were strongly determined to undergo RARC.

On the other hand, despite acknowledging a short life expectancy, the chance of receiving a palliative treatment without major surgical drawback improved patients' morale and perhaps improved their quality of life.

Our study presents several limitations, including the low number of patients enrolled, the lack of a control group, the high costs of robotic procedures related to minimal survival advantage.

CONCLUSIONS

Robot- assisted radical cystectomy is a feasible and relatively safe technique, with potential indications also for advanced/metastatic bladder cancer (BC) , though with a palliative and not curative purpose. Palliation care for BC should be more extensively evaluated and further studies should be needed to define precise guidelines, as already described for other tumors.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

Below is a list of statements that other people with your illness have said are important. Please circle or mark one number per line to indicate your response as it applies to the past 7 days.

FACT-BL ver. 4

Di seguito sono riportate una serie di espressioni comunemente utilizzate da persone con il Tuo stesso problema. **Applica una croce accanto alla risposta che più rappresenta il Tuo stato di salute durante gli ultimi 7 giorni.**

BENESSERE FISICO	Mai	Raramente	Abbastanza	Spesso	Sempre
Mi sento debole	0	1	2	3	4
Ho nausea	0	1	2	3	4
Ho difficoltà a interagire con la mia famiglia a causa del mio problema	0	1	2	3	4
Ho dolore	0	1	2	3	4
Gli effetti collaterali della terapia sono molto limitanti	0	1	2	3	4
Mi sento ammalato	0	1	2	3	4
Devo passare molto tempo a letto	0	1	2	3	4

BENESSERE SOCIALE/FAMIGLIARE	Mai	Raramente	Abbastanza	Spesso	Sempre
Mi sento vicino agli amici	0	1	2	3	4
Ho il supporto dalla mia famiglia	0	1	2	3	4
Ho il supporto dei miei amici	0	1	2	3	4
La mia famiglia ha accettato la mia malattia	0	1	2	3	4
Sono soddisfatto della comunicazione con la mia famiglia riguardo alla malattia	0	1	2	3	4
Mi sento vicino al mio partner	0	1	2	3	4
Sono soddisfatto della mia vita sessuale	0	1	2	3	4

Please circle or mark one number per line to indicate your response as it applies to the past 7 days.

Applica una croce accanto alla risposta che più rappresenta il Tuo stato di salute durante gli ultimi 7 giorni.

BENESSERE EMOTIVO	Mai	Raramente	Abbastanza	Spesso	Sempre
Mi sento triste	0	1	2	3	4
Sono soddisfatto di come affronto la malattia	0	1	2	3	4
Sto perdendo fiducia nell'affrontare la malattia	0	1	2	3	4
Mi sento nervoso	0	1	2	3	4
Ho paura di morire	0	1	2	3	4
Ho paura che la mia condizione peggiorerà	0	1	2	3	4

BENESSERE FUNZIONALE	Mai	Raramente	Abbastanza	Spesso	Sempre
Sono in grado di lavorare (anche da casa)	0	1	2	3	4
Il mio lavoro è appagante (anche da casa)	0	1	2	3	4
Sono in grado di apprezzare la vita	0	1	2	3	4
Ho accettato la mia malattia	0	1	2	3	4
Dormo bene	0	1	2	3	4
Apprezzo le cose che faccio abitualmente per divertirmi	0	1	2	3	4
Sono soddisfatto della mia qualità di vita	0	1	2	3	4

References

1. Antoni S, Ferlay J, Soerjomataram I, Znaor A, Jemal A, Bray F. Bladder Cancer Incidence and Mortality: A Global Overview and Recent Trends. Eur Urol. 2017; 71: 96-108.
2. Stein JP, Lieskovsky G, Cote R, et al. Radical cystectomy in the treatment of invasive bladder cancer: long-term results in 1,054 patients. J. Clin Oncol. 2001; 19: 666-675.
3. Abufaraj M, Dalbagni G, Daneshmand S, et al. The Role of Surgery in Metastatic Bladder Cancer: A Systematic Review. Eur Urol. 2018; 73: 543-557.

4. Abufaraj M, Gust K, Moschini M, Foerster B, et al. Management of muscle invasive, locally advanced and metastatic urothelial carcinoma of the bladder: a literature review with emphasis on the role of surgery. Transl Androl Urol. 2016; 5: 735-744.

5. Kamat AM, Hegarty PK, Gee JR, et al. ICUD-EAU International Consultation on Bladder Cancer 2012: Screening, diagnosis, and molecular markers. Eur Urol. 2013; 63: 4-15.

6. Moschini M, Karnes RJ, Sharma V, et al. Patterns and prognostic significance of clinical recurrences after radical cystectomy for bladder cancer: A 20-year single center experience. Eur J Surg Oncol. 2016; 42: 735-743.

7. Shariat SF, Karakiewicz PI, Palapattu GS, et al. Nomograms provide improved accuracy for predicting survival after radical cystectomy. Clin Cancer Res. 2006; 12: 6663-6676.

8. Hugar LA, Lopa SH, Yabes JG, et al. Palliative Care Use Among Patients with Bladder Cancer. BJU Int. 2019; 123: 968-975

9. Davila JA, Duan Z, McGlynn KA, El-Serag HB. Utilization and outcomes of palliative therapy for hepatocellular carcinoma: a population-based study in the United States. J Clin Gastroenterol. 2012; 46: 71-77.

10. Mulvey CL, Smith TJ, Gourin CG. Use of inpatient palliative care services in patients with metastatic incurable head and neck cancer. Head Neck. 2016; 38: 355-363.

11. Menon M, Hemal AK, Tewari A, et al. Nerve-sparing robot- assisted radical cystoprostatectomy and urinary diversion. BJU Int. 2003; 92: 232-236.

12. Witjes JA, Comperat E, Cowan NC, et al. EAU guidelines on muscle- invasive and metastatic bladder cancer: summary of the 2013 guidelines. Eur Urol 2014; 65: 778-792.

13. Parekh DJ, Reis IM, Castle EP, et al. Robot-assisted radical cystectomy versus open radical cystectomy in patients with bladder cancer (RAZOR): an open-label, randomised, phase 3, non-inferiority trial. Lancet (London, England). 2018; 391: 2525-2536.

14. Bannay A, Chaignot C, Blotiere PO, et al. The Best Use of the Charlson Comorbidity Index With Electronic Health Care Database to Predict Mortality. Med Care. 2016; 54: 188-194.

15. Porreca A, Chessa F, Romagnoli D, et al. Robot assisted radical cystectomy with totally intracorporeal urinary diversion: initial, single-surgeon's experience after a modified modular training. Minerva Urol Nefrol. 2018; 70: 193-201.

16. Hosseini A, Adding C, Nilsson A, Jonsson MN, Wiklund NP. Robotic cystectomy: surgical technique. BJU Int. 2011; 108 (6 Pt 2): 962-968.

17. Zahran MH, Sheir K, Zidan EM, Ali-El-Dein B. Validation of the Arabic version of the Functional Assessment of Cancer Therapy-Bladder questionnaire in Egyptian patients with bladder cancer. Arab J Urol. 2017; 15: 110-114.

18. Ferrell BR, Temel JS, Temin S, et al. Integration of Palliative Care Into Standard Oncology Care: American Society of Clinical Oncology Clinical Practice Guideline Update. J Clin Urol. 2017; 35: 96-112.

19. Svatek RS, Siefker-Radtke A, Dinney CP. Management of metastatic urothelial cancer: the role of surgery as an adjunct to chemotherapy. Canadian Urol Assoc J. 2009; 3 (6 Suppl 4): S228-231.

20. Shelley M, Cleves A, Wilt TJ, Mason M. Gemcitabine for unresectable, locally advanced or metastatic bladder cancer. Cochrane Database Syst Rev. 2011: Cd008976.

21. Bajorin DF, Dodd PM, Mazumdar M et al. Long-term survival in metastatic transitional-cell carcinoma and prognostic factors predicting outcome of therapy. J Clin Oncol. 1999; 17: 3173-3181.

22. Herr HW, Donat SM, Bajorin DF. Post-chemotherapy surgery in patients with unresectable or regionally metastatic bladder cancer. J Urol. 2001; 165: 811-814.

23. Alfred Witjes J, Lebret T, et al. Updated 2016 EAU Guidelines on Muscle-invasive and Metastatic Bladder Cancer. Eur Urol. 2017; 71: 462-475.

24. Lebret T, Mejean A. Metastastic urothelial carcinoma: is there a role for surgery? Prog Urol. 2008; 18 (Suppl 7): S285-288.

25. Gacci M, Noale M, Artibani W, et al. Quality of Life After Prostate Cancer Diagnosis: Data from the Pros-IT CNR. Eur Urol. 2017; 3: 321-324.

26. Noale M, Maggi S, Artibani W, et al. Pros-IT CNR: an Italian prostate cancer monitoring project. Aging Clin Exp Res. 2017; 29: 165-172.

27. Porreca A, Noale M, Artibani W, et al. Disease-specific and general health-related quality of life in newly diagnosed prostate cancer patients: the Pros-IT CNR study. Health and quality of life outcomes. 2018; 16: 122.

28. Wilson TG, Guru K, Rosen RC, et al. Best practices in robot- assisted radical cystectomy and urinary reconstruction: recommendations of the Pasadena Consensus Panel. Eur Urol. 2015; 67: 363-375.

29. Marshall SJ, Hayn MH, Stegemann AP, et al. Impact of surgeon and volume on extended lymphadenectomy at the time of robot-assisted radical cystectomy: results from the International Robotic Cystectomy Consortium (IRCC). BJU Int. 2013; 111: 1075-1080.

30. Yuh BE, Nazmy M, Ruel NH, et al. Standardized analysis of frequency and severity of complications after robot-assisted radical cystectomy. Eur Urol. 2012; 62: 806-813.

31. Novara G, Catto JW, Wilson T, et al. Systematic review and cumulative analysis of perioperative outcomes and complications after robot-assisted radical cystectomy. Eur Urol. 2015; 67: 376-401.

32. Gandaglia G, Karl A, Novara G, et al. Perioperative and oncologic outcomes of robot-assisted vs. open radical cystectomy in bladder cancer patients: A comparison of two high-volume referral centers. Eur J Surg Oncol. 2016; 42: 1736-1743.

33. Moeen AM, Safwat AS, Elderwy AA, Behnsawy HM, Osman MM, Hameed DA. Management of neobladder complications: endoscopy comes first. Scand J Urol. 2017; 51: 146-151.

34. Schiavina R, Zaramella S, Chessa F, et al. Laparoscopic and robotic ureteral stenosis repair: a multi-institutional experience with a long-term follow-up. J Robot Surg. 2016: 10: 323-330. ■