

# A technique for catheter placement after transurethral resection of the prostate complicated with undermining of the trigone of the bladder

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## KEY WORDS

catheter ► electroresection ► prostate

## ABSTRACT

Authors presented 17 patients in whom two techniques for catheterization of the bladder after transurethral resection of the prostate complicated with undermining of the trigone of the bladder were applied. The first maneuver, used in twelve patients, was the insertion of a rigid stylet made from a 10F pneumatic probe used for percutaneous nephrolithotripsy into the Foley catheter in order to insert the catheter into the bladder in cystoscopic manner. In the remaining five patients, the second maneuver was the insertion of a Dufour catheter over the guide wire left in bladder through the resectoscope sheath. These techniques seemed to be easy and safe.

## INTRODUCTION

Transurethral electroresection of the prostate (TURP) is the traditional way to remove prostate tissue using minimally invasive surgical techniques. No outside incision is needed so there is less pain, fewer complications, and faster healing. However, some complications do occur. One of them is undermining of the bladder trigone. This occurs when there is an excessive resection of the bladder neck and proximal prostatic urethra, especially when a large median lobe is present [1, 2]. When this happens in patients the insertion of a catheter after electroresection may be very difficult or even impossible. The commonly used Foley or Coude catheter is not rigid enough to be elevated over the subtrigonal space and very often stops in it. In this case, inflating the balloon only exaggerates the false passage and worsens the bladder neck–prostatic urethral dissociation. Sometimes a Dufour catheter can be successfully advanced into the bladder over a guide wire, but when the subtrigonal space is very big it also tends to fail [3]. When the introduction of a catheter through the urethra fails, a suprapubic cystostomy still can be performed for the rinsing. It is also possible to introduce a Tiemann or Nelaton catheter into the bladder through the resectoscope sheath and leave it in the bladder, but these catheters do not have an inflatable balloon, which can be very helpful in establishing hemostasis after electroresection.

We describe two possible maneuvers facilitating the introducing of a Foley or Dufour catheter after transurethral electroresection of the prostate with the undermining the trigone of the bladder.

## MATERIAL AND METHOD

In 17 men with undermining of the trigone of the bladder during transurethral electroresection of the prostate, the insertion of

the Foley or Dufour catheter in a simple, traditional way was impossible. In 10 patients a part of the trigone was resected because of a large median lobe and in the remaining seven patients the tissue underneath the trigone was resected too much because of the lack of the surgeon's skill.

In 12 cases we inserted a pneumatic probe (10F), normally used during percutaneous nephrolithotripsy, as a rigid stylet into the lumen of the Foley catheter (Fig. 1). The insertion of this pipe into the lumen of the 22–24F Foley catheter was very easy and it was stiff enough to bend down to leverage the catheter's tip above the edge of the undermined trigone. This maneuver allowed us to introduce a Foley catheter into the bladder in a resectoscopic or cystoscopic manner. To avoid bladder perforation during catheterization, we filled the bladder with 300 ml of irrigative fluid through the resectoscope. Care should be taken to put a lot of lidocaine jelly on the metal surface of the probe in order to facilitate its removal.

In the remaining five cases we introduced a Lunderquist-type guide wire, normally used for percutaneous nephrolithotripsy, into the bladder, through the sheath of the resectoscope, and over this well lubricated wire; a Dufour catheter was then successful introduced. We decided to use a Dufour catheter because of severe bleeding after TURP and to facilitate the need for permanent bladder irrigation.

In all patients the catheter was removed on the third day after electroresection. No bladder damage, false passage or urethral complications were observed during catheterization.

## DISCUSSION

The different methods for difficult male urethral catheterization are well described in selected literature [4, 5, 6, 7]. However, only a few authors discussed the problems with catheterization of patients with undermined trigone after TURP.

Loewe et al. described using a PeelAway® sheath placed on resectoscope or cystoscope into the bladder. A Peel-Away® Sheath (Cook Urological, Spencer, IN) is placed around the cystoscope or resectoscope at the beginning of the case. Once the case is completed, the cystoscope/resectoscope is placed in the bladder and then it is removed leaving the sheath in place. A Foley catheter (with or without a catheter guide) is advanced through the sheath into the bladder, the balloon inflated, and the sheath peeled away

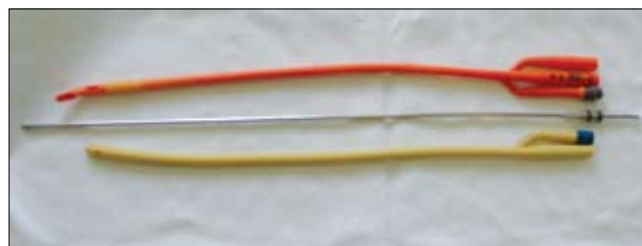


Fig. 1. An ultrasonic probe used as a stylet for Foley and Dufour catheters.

[8]. In our opinion it may be difficult to acquire this kind of sheath because it is not a routine urological equipment.

Rozanski et al. described a technique used in two patients with significant undermining of the trigone after transurethral incision of the prostate. In these patients a wire was introduced into the bladder (into a barely visible opening at the 12 o'clock position), but multiple attempts to place a Council catheter over the wire failed. Consequently they used a 22F Foley with a punch hole at the tip, inserted a 6-F ureteroscope into the Foley with the tip of the ureteroscope several millimeters beyond the catheter tip, and inserted the ureteroscope and the catheter into the bladder under direct vision. The Foley was grasped securely and the ureteroscope was pulled out. They recommended the use of this technique whenever catheterization is difficult or potentially complicated following transurethral surgery [9].

The use of a rigid stylet inserted into the Foley catheter was described by gynecologists for placement of a transcervical Foley catheter for cervical ripening. They used a 5-French rigid catheter guide inserted into the Foley catheter [10]. In our opinion an insertion of the Foley catheter into the bladder is more difficult and a stylet would be much stiffer. A pneumatic probe is ideal for this purpose.

We use a Lunderquist-type guide wire on five patients. This maneuver needs either a special type of Foley catheter (Council catheter, which is not commonly available) or a cut end of a normal Foley catheter. This might be troublesome because cutting the end of the Foley catheter leaves a sharp edge on the end of it. That is why we preferred a Dufour catheter, especially when permanent bladder irrigation is required.

We believe the use of a rigid stylet can be a practical solution to a problem that may be experienced by urologists during electroresection of the prostate.

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