HOW TO PRESERVE BLADDER NECK DURING ROBOTIC RADICAL PROSTATECTOMY?

Abdullah Erdem Canda*

Department of Urology, Yildirim Beyazit University, School of Medicine, Ankara Ataturk Training & Research Hospital, Ankara, Turkey

*Dr. Canda is a board member European Association of Urology (EAU) Robotic Urology Section (ERUS)

ABSTRACT

Preservation of the bladder neck is an important step during performing robot-assisted laparoscopic radical prostatectomy (RARP). Removal of periprostatic fat tissue leads to a better exposure of the bladder neck and prostatic junction. It is important not to use too much cautery and not to enter a deeper plane initially that could lead to damaging bladder neck and the surrounding tissues thus disrupt the normal anatomy. When the bladder neck is seen, bipolar forceps is used on both sides of it in order to isolate it. Following exposure of the bladder neck, monopolar scissors is used on both sides in order to dissect the plane between the bladder and the prostate. For obtaining a bladder neck with a maximum length, prostate is pushed forward before cutting it. Bladder neck and urethra is cut close to the prostate without using any cautery application. Bladder neck preservation is easy to perform in small prostates without a median lobe or prostates without previous TURP/prostate surgery history. Preserving bladder neck facilitates the anastomosis between urethra and bladder neck following completion of RARP and might provide decreased postoperative cystographic leakage, early removal of urethral catheter and early recovery of urinary continence.

Key Words: Bladder neck sparing, Robotic surgery, Prostate cancer

ABDOMINAL PORT PLACEMENT

A total of 5 abdominal ports are placed, four 8 mm sized robotic trocars for robotic instruments and for 3D-HD camera and a 12 mm sized trocar for bedside assistance. Da Vinci Xi Surgical System (Intuitive Surgical, Sunnyvale, CA, USA) is used (Figure 2). Maryland bipolar forceps is used on the left side of the umbilicus. Whereas, monopolar curved scissors (Hot Shears™) and Prograsp™ forceps are used on the right side of the umbilicus. Whereas, monopolar curved scissors (Hot Shears™) and Prograsp™ forceps are used on the right side of the umbilicus. In addition, a large needle driver is also used on the right side of the umbilicus. A 0° lens is used in most of the procedure.

PATIENT POSITIONING

A transperitoneal approach is used patient in the steep (30°) Trendelenburg position (Figure 1).
TIPS AND TRICKS IN IDENTIFICATION AND ISOLATION OF THE BLADDER NECK

I. REMOVAL OF PERIPROSTATIC FAT TISSUE

Removal of periprostatic fat tissue leads to a better exposure of the bladder neck and the junction between prostate and bladder neck. Therefore, the author suggest that the surgeon spends some time during surgery in order to excise and remove all the periprostatic fat which is one of the crucial steps of bladder neck preservation (Figure 3). When the periprostatic fat tissue is excised, the surgeon better identifies the anatomical structures.

II. USING 4TH-ARM IN ORDER TO RETRACT THE BLADDER POSTERIORY

Bladder is retracted posteriorly with 4th-robotic arm holding the Prograsp forceps and this manoeuvre shows the intersection point of bladder neck and the prostate (Figure 4).

III. DISSECTING BLADDER NECK

Monopolar scissors is used in order to dissect the superficial tissues overlying the bladder neck and during this dissection bipolar forceps on the left hand is used in order to further retract the bladder posteriorly that clearly shows the anatomy (Figure 5). Small bleeders could be cauterized to obtain a clear vision. It is important not to use the cautery too much and not to enter a deeper plane initially that could cause a charring effect on the tissues thus disrupt and damage the normal anatomy.
Bipolar forceps on the left hand is used in order to further dissect the tissues surrounding the bladder neck as if using a right angle forceps during performing open surgery (Figure 6). This manoeuvre is very helpful in isolation and exposure of the bladder neck. When the bladder neck is seen, bipolar forceps is used on both sides of the bladder neck in order to completely isolate it. For a better exposure, the 4th-arm further retracts the bladder posteriorly that elongates the bladder neck.

When the bladder neck is exposed, monopolar scissors is used on both sides of the bladder neck in order to enter the plane between the bladder and the prostate (Figure 7).

The assistant surgeon pulls the urethral catheter back and forth that nicely shows and exposes the bladder neck and the urethra (Figure 8). In addition, assistant surgeon aspirates smoke and clears any bleeding during the dissection that provides a nice vision for the operating console surgeon.

In order to obtain a maximum length of bladder neck, prostate is pushed forward before cutting (Figure 9). Cauterization of the bladder neck is avoided in order to prevent thermal injury that could have a negative impact on postoperative urinary continence.

Following obtaining a bladder neck with a maximal length, bipolar forceps is passed under it (Figure 10). Thereafter, bladder neck and urethra is cut close to the prostate without using any cautery application (Figures 10 and 11). Following appearance of the urethra Foley catheter, assistant surgeon

![Figure 5: Using monopolar scissors in order to dissect the superficial tissues covering the bladder neck.](image1)

![Figure 6: Using bipolar forceps in order to isolate the bladder neck.](image2)

![Figure 7: Dissecting the plane between the prostate and the bladder.](image3)

![Figure 8: Exposing the bladder neck and the urethra.](image4)
How to Preserve Bladder Neck During Robotic Radical Prostatectomy?

withdraws the catheter. Lastly, the posterior part of the bladder neck is cut and bladder neck is completely separated from the prostate.

Thereafter, the plane between the bladder neck and prostate is further dissected, seminal vesicles and vas deferences are identified. The other steps follow in order to complete the RARP procedure.

Previously, other authors presented their technique of bladder neck preservation during RARP (5,6).

Bladder neck preservation is easy to perform in small prostates without a median lobe or prostates without previous TURP/prostate surgery history. Preserving bladder neck might provide decreased postoperative cystographic leakage, early removal of urethral catheter and early recovery of urinary continence.

TAKE HOME MESSAGES

1. Removal of periprostatic fat tissue leads to a better exposure of the bladder neck. It is important not to use the cautery too much and not to enter a deeper plane that could lead to damaging the bladder neck and disruption of the surrounding tissues that could damage the normal anatomy.

2. When the bladder neck is seen, bipolar forceps is used on both sides of the bladder neck in order to isolate it. For a maximum length of bladder neck, prostate is pushed forward before cutting.

3. Bladder neck and urethra is cut close to the prostate without using any cautery application.

4. Bladder neck preservation is easy to perform in small prostates without a median lobe or prostates without previous TURP/prostate surgery history.

5. Preserving bladder neck facilitates the anastomosis between the bladder neck and the urethra and might provide decreased postoperative cystographic leakage, early removal of urethral catheter and early recovery of urinary continence.

REFERENCES


