Video Article

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Key Steps in Robotic Simple Prostatectomy for Benign Prostatic Hyperplasia

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Abstract

Open prostatectomy is still an option for the surgical treatment of benign prostate hyperplasia (BPH). In this video, key steps in robotic simple prostatectomy are summarised. Robotic surgery provides a reasonable alternative for BPH management when open surgery is indicated.
Keywords: Benign prostatic hyperplasia, robotic surgery, robotic assisted laparoscopic prostatectomy

Under general anaesthesia, urethral catheter and orogastric tube are inserted to keep the bladder and stomach empty before accessing the abdomen. Five or six port technique can be used for robotic assisted laparoscopic simple prostatectomy. After access and port placement in the supine position, docking of the robot between the legs is done in the Trendelenburg position. The monopolar scissors is positioned on the right hand and the prograsp and fenestrated bipolar forceps are on the left.

The bladder is dropped starting from lateral to the medial umblical ligaments down to the level of vasa deferens using a blunt and sharp dissection, and the space of retzius is developed. Removal of the periprostatic and perivesical fat provided a clean surgical field.

Access to the prostatic adenoma can be achieved transvesically or by direct incision to the prostatic pseudocapsule. As shown in this video, a vertical cystotomy can be used, which can be extended to the proximal 1-2 cm of the prostate when necessary. Vertical cystotomy provides a good exposure to the trigone and ureteric orifices and facilitates bladder stone removal.

Using a monopolar scissors, mucosal incision was made at 6-position of the bladder neck. A stay suture is placed on the median lobe and held up by fourth arm for upper traction to achieve a better exposure. Dissection plane between adenoma and surgical capsule is developed. Care is taken not do dissect too deep in the posterior plane to avoid capsular laceration. Dissection plane is also developed circumferentially to the anterior commissure and proceeds distally toward the apex. The fourth arm is very helpful for traction and exposure during dissection. "The apical shoulders" is an important landmark for distal limit of dissection and approaching the urethral sphincter. Thermal energy should be kept at minimum and avoided at the apex and urethra. Adenoma is divided proximal to the urethral sphincter, freed and removed and put in a specimen bag. Urethral Foley catheter acts as a guide for better identification of the urethra at this level. Prostatic fossa should be inspected carefully for bleeders and remaining small adenoma tissues that be cleaned. Haemostatic sutures are placed at 5- and 7-position to control the main arteries.

Trigonization is a key step of the operation. Mucosal edges of the bladder trigone and the urethra are approximated with 3/0 absorbable barbed suture. Occasionally the gap between two edges may be too long to establish a tension-free approximation. Three rows of sutures through the posterior surgical capsule between the bladder neck and urethral edge will fascilitate a tension-free reconstruction.

Cystotomy incision is closed using 2/0 or 3/0 barbed suture in continuous full-thickness sutures. Seromuscular Lembert sutures are also used as a second layer. The bladder is filled with 100 cc saline to confirm water-tight closure. A 22 Fr 3-way Foley catheter is inserted with the balloon filled with 35 cc and kept in continuous irrigation for the first 24 hours. A pelvic drain is placed and removed usually on the first postoperative day.

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