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## Robotic revision of vesicourethral stricture after robot-assisted radical prostatectomy

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Vesicourethral anastomotic stenosis is an uncommon complication following radical prostatectomy (RP). The incidence is 1–26% and after surgery most strictures occur within the first 6 months and are rare after 24 months. In 2007, the CAPSURE study, on 3310 men, found an incidence of vesicourethral anastomotic stenosis in 8.4% of patients following RP. Nathan et al. reported an incidence rate between 22 and 26% in salvage RARP (robot-assisted radical prostatectomy) post radiotherapy or brachytherapy. The exact pathophysiology needs to be better defined. There are different factors involved: patient-related factors such as body mass index (BMI) and age; and technical factors such as number of surgical procedures performed by the surgeon, absence of mucosal eversion, poor vesicourethral mucosal apposition, urinary extravasation, increased blood loss, ischemia of the bladder neck/membranous urethra, or excessive narrowing of the urethral anastomosis at the time of the procedure. The first-line treatment of vesicourethral anastomotic stenosis includes endoscopic dilation, internal urethrotomy, and transurethral resection of the strictured fragment. Further treatment options are bladder neck reconstruction or urinary diversion. We present a case of robotic revision of urethro-

vesical stricture in a 62-year-old man treated with robot-assisted radical prostatectomy for acinar adenocarcinoma of prostate International Society of Urological Pathology (ISUP) 2, pT2c R1.

Oncological follow-up was negative. The last prostate-specific antigen (PSA) level was 0.03 ng/mL.

The postoperative course was complicated by stenosis of vesicourethral anastomosis.

The patient underwent transurethral resection (TUR) of the stenotic vesicourethral anastomosis, followed by urethrotomy for stenosis 2 cm before anastomosis. During the urethrocytography, no micturition occurred, so it was necessary to position an epicycstostomy.

A standard transperitoneal robotic approach was planned to correct the vesicourethral anastomotic stenosis. After removing the suprapubic catheter, the first step was the dissection of the bladder from the walls of the pelvis, anteriorly and laterally, trying to identify the levator ani muscle and the correct anatomy, which was very difficult due to fibrosis and adhesions.

We opened the cystotomy site close to the bladder neck to highlight the anatomy of the bladder neck and the bladder more clearly regarding the position of the urethral orifice.

Then the next step was to reach the site of the bladder neck and of the stenotic anastomosis location with white light from the cystoscope inserted from the urethra.

The robot's light was reduced to see the light from the cystoscope: the diameter of the urethra was very narrow even after these first incisions. The dissection of the stenotic fibrotic part of the anastomosis was not excessively close to the bladder trigone to avoid injury. The bladder neck was separated from the urethra to dissect this fibrotic tissue and then make the anastomosis on healthy, well-vascularized tissue, paying attention to the rectal wall posteriorly.

The scar tissue was excised. We then inserted a 20 Fr silicone catheter on a wire.

We developed a posterior plane between the bladder neck and the rectum in the pouch of Douglas, rejoining the lateral and the anterior planes of the dissection started at the beginning of the surgery. We obtained an isolated bladder neck from the urethral stump gaining healthy tissue to redo the vesicourethral anastomosis.

Performing the vesicourethral re-anastomosis is similar to the standard surgery, but the posterior

reconstruction should lower the tension in the new anastomosis. When the stricture is too close to the ureteral ostia, postoperative edema could obliterate them. To avoid this, the placement of Bracci ureteral catheters is needed and the ureteral orifices should be checked during surgery.

The operative time was 150 minutes.

The hospital stay was 3 days.

The urethral catheter was kept indwelling for 12 days. At the removal of the urinary catheter, micturition resumed.

Five months after surgery, urethrocytography demonstrated regular bladder walls, better bladder lumen expansion, and complete bladder emptying after micturition, with bladder neck within radiological limits.

#### **CONFLICTS OF INTEREST**

The authors declare no conflicts of interest.

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