

Trauma and reconstruction

Patient with duplex ureter injury underwent robot assisted laparoscopic common sheath ureteral reimplantation single docking: Case report

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A B S T R A C T

Ureteral injury is common complication that need comprehensive understanding of ureteral injury management from minimal invasive intervention to ureteral reimplant in both early and late presentation. However, ureteral injury in duplex system rarely reported in literature. Here we are sharing our techniques and challenging in a patient who had a duplex ureteral injury with late presentation underwent robot assisted ureteral reimplantation.

Background

Ureteral injuries are an uncommon surgical complication, it is estimated that 52–82% of iatrogenic injuries occur during gynecologic surgery.^{1,2} The rate of ureteral injury for vaginal hysterectomy is 0.2 injuries per 1000 cases, and 1.3 injuries per 1000 cases for total abdominal hysterectomy.³ Ureteral duplication is not an uncommon condition, described in approximately 1 in 125 people (0.8%) based on autopsy series.⁴ There is a slightly higher incidence in females, estimated to be approximately 1.6: 1.⁴ A robot-assisted apply in duplex system for reconstructive purposes either for recurrent UTI or worsening hydronephrosis and function mainly in children.⁵ Here we would like to share our experience of rear presentation patient post cesarean section complicated by duplex system injury treated with robotic reimplants.

Case report

A 40 year old lady with eleven pregnancy and four abortions with a known history of three cesarean sections before. Presented to gynecology with vaginal bleeding and an estimated loss of 5 litter underwent emergency abdominal hysterectomy due to placenta previa percreta. Postoperatively the patient was having persistent left flank pain, nausea, and vomiting. Day 6 IVP was done by gynecologist and show left ureter

was not visualized. The patient referred to a urologist in were CT urogram done the next day show left vesicoureteric junction lack of contrast. Nephrostomy tube was inserted after that by interventional radiology. Nephrostogram was done and shows a duplex system sharing a common sheath with no contrast reaching bladder [Fig. 1]. A cystoscopy and retrograde pyelography, robot-assisted laparoscopic duplex ureter reimplantation, psoas hitch was performed, using a 5-port laparoscopic approach, single docking. After 3 month of insult, with console man of 180 min with estimated blood loss of 300ml, 4 days of hospitalization. 6 weeks later, double J stent removed and VCUG show contrast reflux into the duplicated left collecting system. No contrast leak or strictures are seen during the scan [Fig. 2].

Discussion

Duplex kidney and ureter are a developmental condition of incomplete fusion of the upper and lower poles of the kidneys. Additionally, an accessory ureteral bud creates complete duplication of the excretory system, with the upper ureter usually protruding into the bladder more medially and inferiorly than the lower ureter (Weigert-Meyer law). Patient in lithotomy position first for a cystoscopy to assess it a complete duplicate system or there is a common sheath. after that patient position to Semilithotomy and Trendelenburg position for dropping bowel to the outside of interest field. placing port initially

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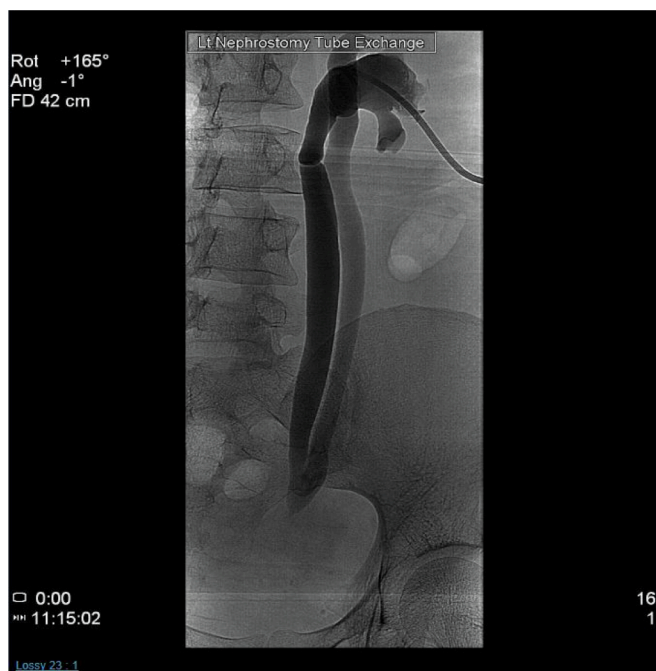


Fig. 1. Nephrostogram shows duplex system and sharing a common sheath with no contrast reaching the bladder.

with Veress needle and remaining ports under direct vision [Fig. 3], robotic docking between legs of the patient. During mobilization and identification, the two ureters joining a common sheath to that level is not an uncommon procedure to do in a duplex system. A decision was to do anastomosis separately with two spatulation vs one common sheath anterior spatulation and posterior wall of two ureters attach together using non-touch technique minimizing devascularization and mobilize bladder to a target level to minimize devascularization. So, intraoperative we mobilize the common sheet and spatulate each ureter anteriorly and re-implant on the bladder. The area was distally ligated to the common sheet. Dissection of the proximal common sheath and free it from ligation site and adequate mobilization of bladder. We able mobilize bladder and to spatulate ureters anteriorly and challenges were not separate ureters posteriorly to unsure anastomosis site have a good blood supply to minimize stricture in the future. Also, to identified which is upper and lower ureters, we inject through nephrostomy with methylene blue coming from the lower part guide ass in stenting of both ureters. Then reimplant of both ureters to the bladder. Omentum wrap done around it and leak test with 150 ml saline show no leak.

On the assumption, that they share a common vascular supply. The challenges were immobilization of ureter and not to separate two ureters from each other to assure adequate vascularization. postoperative patient hospitalize for 4 days, monitoring drain and foley catheter output, day 3 of surgery the nephrostomy clamp and patient was doing fine, vitally stable and minimal output. Decision-taking to remove drain and nephrostomy on day 4 and discharge home.

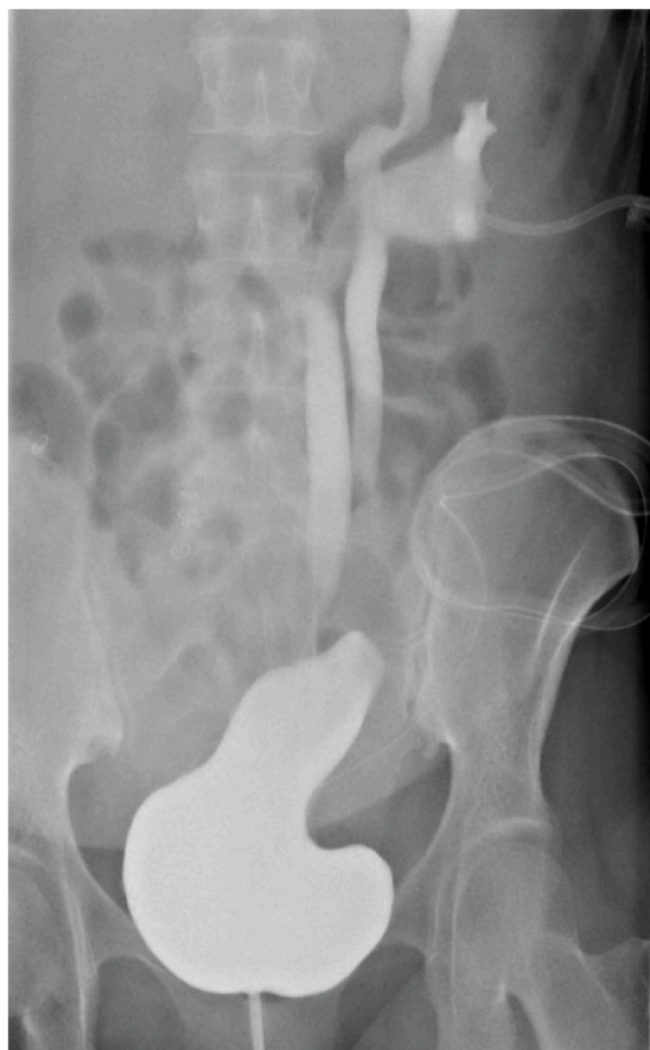


Fig. 2. Post-operative VCUG show contrast reflux into the duplicated left ureter.

Conclusions

From our search in PUBMED and SCHOLAR. GOOGLE this is very rare condition of common sheath ureteric injury, here we are sharing techniques and the challenges that we face. The reason for Robot-assisted laparoscopy is due to weak abdominal muscle and redundant [Fig. 3] as she has a history of multiple pregnancies and minimizes dissection, bleeding and devascularization, optimize anastomosis and rapid recovery, Robot laparoscopic common sheath reimplantation with psoas hitch for the treatment of the common sheath ureter injury is possible, safe, and effective with minimally invasive surgery with good functional results in adults and should be preferred in selected cases. Robot-assisted laparoscopy is becoming the standard approach to urologic pelvic reconstructive procedures.

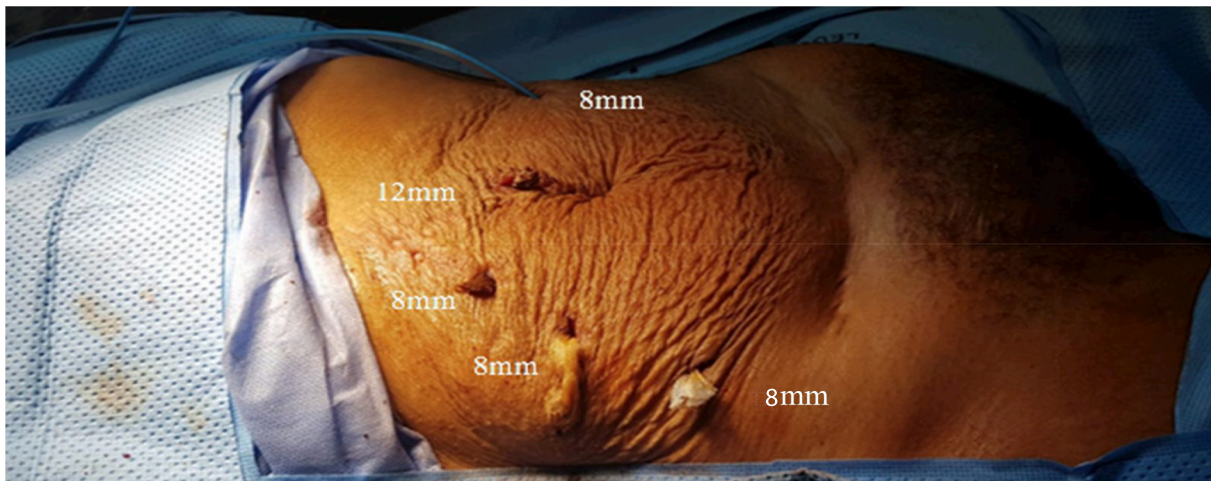


Fig. 3. Port sites.

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