

Endourology

Laparoscopic Single Site Surgery for Repair of Retrocaval Ureter in a Morbidly Obese Patient



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ABSTRACT

This is to describe a case of a morbidly obese (BMI = 40) female with retrocaval ureter treated with laparoendoscopic single-site surgery. A JJ stent was positioned. A 2 cm umbilical access was created. A single port platform was positioned. The entire ureter was mobilized posterior to the vena cava and transected where the dilated portion ended. The distal ureter was repositioned lateral to the inferior vena cava. Anastomosis was done. A 3 mm trocar was used to assist suturing. At 4-month follow-up, CT revealed no evidence of obstruction of the right kidney and the patient was symptomless. Although challenging, in a morbidly obese patient, LESS repair for retrocaval ureter is feasible.

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Introduction

Retrocaval ureter is a rare congenital anomaly. It results from persistence of the posterior cardinal vein caudal to the renal vein. It usually presents in middle to old age with renal pain, urinary tract infection or secondary stones.¹

Open surgery was the first line successful treatment of this condition.² However, laparoscopic surgery is now used for a variety of urological procedures including reconstructive ones and is associated with decreased postoperative pain and hospital stay.³

Laparoscopic correction of retrocaval ureter has been successfully described in small number of cases.⁴ Classically, laparoscopic ureteric reconstruction depends on the use of several (3–6) ports. Recently, laparoendoscopic single-site surgery (LESS) have been used to improve the cosmetic outcome and further reduce morbidity.⁵

LESS is emerging in an effort to raise the standard of laparoscopic procedures through a scar-free approach.⁵ In this report, we describe a case of retrocaval ureter corrected with LESS in a morbidly obese patient.

Patient data

A 45-year-old G3 P3 female (body mass index 40) with no previous surgical history presented to our department with complaints of intermittent right-sided flank pain. Moderate right-sided

hydronephrosis demonstrated via abdominal ultrasound and multiphasic computed tomography scan confirmed the presence of a retrocaval ureter. Decision was for LESS repair of retrocaval ureter.

Operative data

Initially, 6/26 JJ stent was inserted in the right ureter using 20F cystoscope in lithotomy position. The patient was then positioned in rightside-up 60° modified flank position. Open Hasson technique used to place Covedien single-port access device through 2 cm umbilical incision. Covedien single-port access device includes two 5-mm ports and one 10 mm port and an insufflation cannula, through which CO₂ pneumoperitoneum was achieved and set at 15 mm Hg. An EndoEYE (Olympus, Center Valley, PA) endoscope was used for visualization.

The colon was dissected medially. The proximal ureter lateral to the inferior vena cava was dissected. Then, the distal ureteric segment medial to the vena cava was dissected as well. The ureter was mobilized and transected at the point where the dilated portion of the proximal ureter ended.

The distal segment of the ureter was spatulated laterally and the proximal segment medially. Two 4-0 Vicryl sutures were used to perform a running anastomosis. After finishing the anastomosis of the posterior ureteral wall, 6/26 JJ stent was inserted using through the abdominal wall using puncture needle and sensor guide wire. After ensuring the JJ into the renal pelvis, running suture anastomosis of the anterior ureteral wall was completed. An additional 3-mm port placed in the right upper quadrant was used to assist in suturing.

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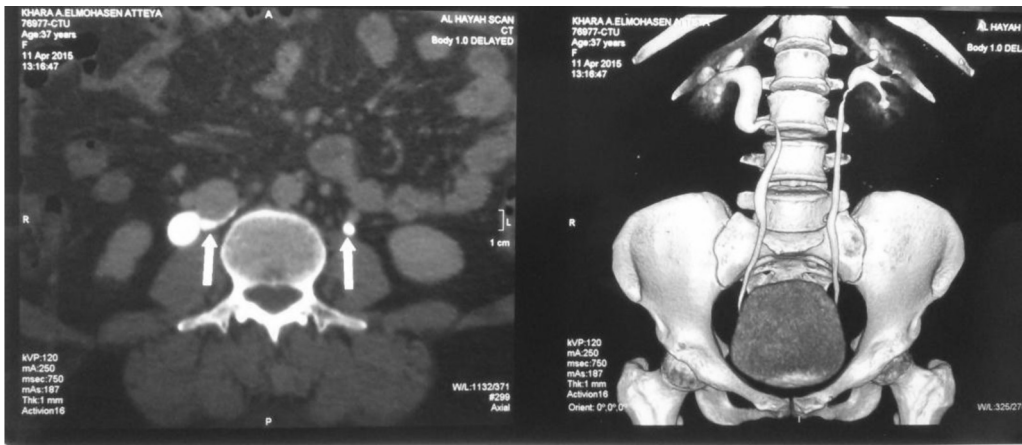


Figure 1. Contrast CT study showing opacified right ureter curving around IVC (lazy S pattern) – a case of retrocaval ureter.

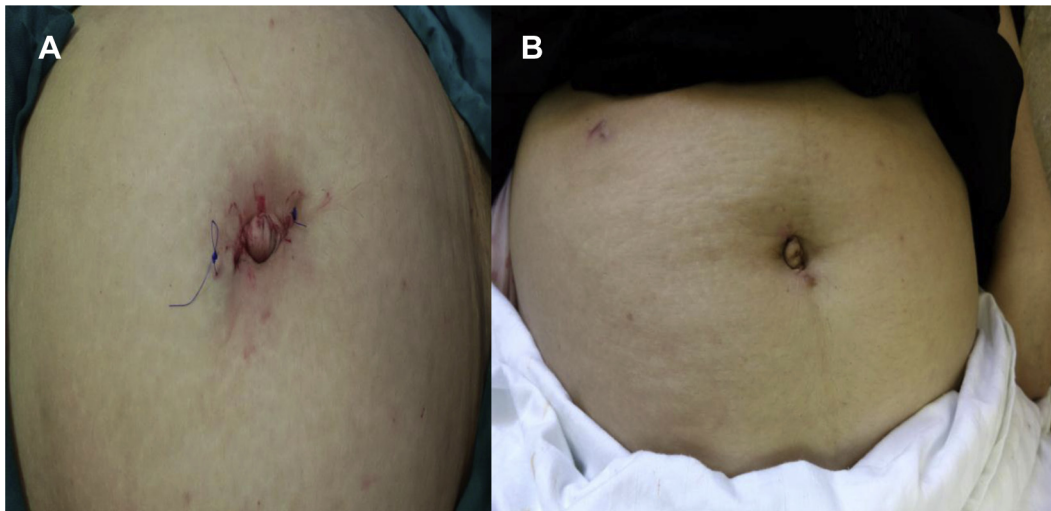


Figure 2. A) Immediate post operative; closure of umbilical port. B) Scar 6 months postoperatively.

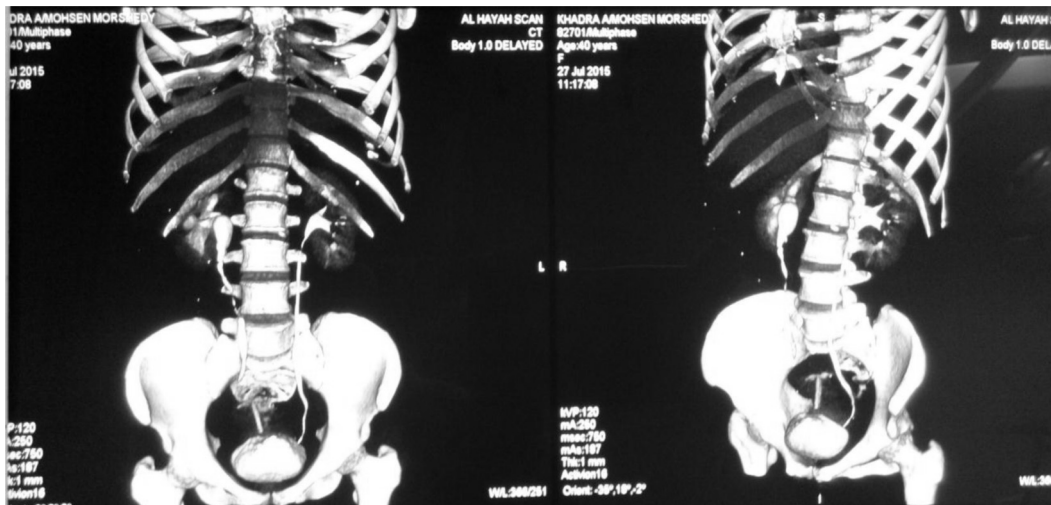


Figure 3. CT contrast study 4 months postoperatively.

Total operative time was 4 hours with minimal blood loss and no intraoperative complications.

Postoperative data

Postoperatively, there was no complications and the Foley catheter and the drain were removed on the first postoperative day and patient discharged on the second postoperative day. The JJ stent was removed 4 weeks postoperatively.

At 3-month follow-up, CT scan revealed no evidence of obstruction of the right kidney, and the patient also remained symptom-free (Figs. 1–3).

Comment

Retrocaval ureter is a rare congenital anomaly (1/1000 live births).¹ Few cases of minimally invasive repair of this anomaly were reported.

Laparoscopic transperitoneal repair of retrocaval ureter was first described by Baba and colleagues in 1994. They reported suturing as the most challenging part of the procedure.¹

Salomon et al., reported the first case of retroperitoneoscopic repair of retrocaval ureter in a young man.² They reported that operative duration was shorter than that for the transperitoneal approach. Xu et al.,³ concluded that retroperitoneal access seemed safer, easier, and less time-consuming, providing direct access to the ureter and inferior vena cava.

On the opposite side, Ramalingam et al.,⁴ concluded that transperitoneal suturing is less time-consuming and easier.

Recently, there has been growing interest in performing urologic procedures using LESS. LESS is practical and affords a scarless result. Experience is increasing and by far we have done more than 100 LESS procedures at our department.

A solid background in laparoscopic surgery is essential before starting LESS. Special obstacles of LESS (i.e., crossing or collision of

instruments, lack of triangulation, and in-line vision) act as additive challenges for the surgeon. These tasks become even more tough in cases when suturing is needed i.e., reconstructive procedures.⁵

In this report, we describe a successful case of LESS repair of retrocaval ureter using the Covedien port in a morbidly obese patient (BMI 40). The procedure was technically successful and operative time at 4 hours was comparable to that of reported standard laparoscopic series. Six months postoperatively, scar assessment was done using patient and observer scar assessment scale (PSAS & OSAS) that revealed PSAS of 8 and OSAS of 7 signifying excellent cosmetic outcome. To this point in our experience we had to use an additional 3-mm port to aid in triangulation for delicate reconstructive suturing and was used at the end for drain placement.

Conclusions

Although challenging, specially in a morbidly obese patient, LESS repair for retrocaval ureter might represent a feasible option for this rare anomaly.

Conflict of interest

There is no conflict of interest.

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