Ureterosciatic Hernia Treated with Laparoscopic Intraperitonization of the Ureter

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Abstract

Background: Ureterosciatic hernia (USH) is a rare benign disease. We report a case of USH treated with laparoscopic intraperitonization of the ureter.

Case Presentation: A 70-year-old woman was admitted to our hospital with right abdominal pain lasting for 2 months. CT showed right hydronephrosis and invagination of the right ureter into the right sciatic foramen. She underwent retrograde ureterography, which revealed abnormal tortuosity of the right lower ureter, and was found to have USH. We performed laparoscopic intraperitonization of the ureter and she presented good postoperative course.

Conclusion: Laparoscopic intraperitonization of the ureter can be a useful treatment for USH.

Keywords: flank pain, hydronephrosis, laparoscopy, sciatic hernia, ureter, retrograde ureterography

Introduction and Background

URETEROSCIATIC HERNIA (USH) is a rare disease and rare cause of refractory flank pain. USH is treated with open repair, laparoscopic, or recently robotic. Laparoscopic repair of USH has been described for only five cases, most of them repairing with mesh or connective tissue stabilization.¹ Here we present a case of USH treated with laparoscopic intraperitonization of the ureter.

Presentation of Case

A 70-year-old woman was admitted to our hospital with right abdominal pain lasting for 2 months. Medical and sur-

gical histories were unremarkable. She was afebrile and physical examination showed right costovertebral angle knocking pain. Her serum creatinine was 1.4 mg/dL. Urinalysis was normal. CT scan showed right hydronephrosis and invagination of the right ureter into the right sciatic foramen (Fig. 1). She underwent retrograde ureterography (RU), which revealed abnormal tortuosity of the right lower ureter, and was found to have USH (Fig. 2). Subsequent retrograde ureteral stenting improved her symptom and CT showed improvement of hydronephrosis.

We performed a laparoscopic repair of USH 3 months after placement of ureteral stent. The procedure was started under general anesthesia with the patient in a head down left semilateral position. The first trocar was placed inferior to the

FIG. 1. (a) CT showing right hydronephrosis. (b) CT showing right ureter with herniation into the right sciatic foramen. The arrow shows right ureter with herniation into the right sciatic foramen.

FIG. 2. RU revealed curlicue ureter into the sciatic foramina. RU, retrograde ureterography. The arrow shows curlicue ureter into the sciatic foramina.

umbilicus. A mid-right abdominal port and two lower quadrant abdominal ports were added. The peritoneum overlying the right ureter was incised, and the ureter was encircled with a vessel loop (Fig. 3a). The ureter was invaginated into the sciatic foramen (Fig. 3b). A small defect that appears to be the hernial orifice was identified after mobilizing the ureter from adherent lipomatous tissue and pelvic wall (Fig. 3c). Because the herniated part of the ureter appeared normal, no ureteral resection was performed. After securing ureter mobility, the hernial orifice was closed by reapproximating the peritoneal edges with suture to avoid recurrence of the hernia (Fig. 3d). The postoperative course was uneventful. The ureteral stent was removed at 3 months postoperatively. Later at 3 months follow-up, the patient's abdominal pain resolved and CT revealed improvement of hydronephrosis and ureteral dilation, and there was no recurrence of hernia (Fig. 4).

Discussion and Literature Review

USH is a rare disease, so there are few reports about presentation, diagnosis, and subsequent treatment. To the best of our knowledge, only 36 cases have been reported previously.

FIG. 3. (a) The ureter was encircled with a vessel loop after incising the peritoneum. (b) The ureter was invaginated into the sciatic foramen. (c) The hernial orifice was identified after mobilizing the ureter. (d) The suprapiriformis space was closed by reapproximating the peritoneal edges with sutures and the part of ureter was placed in the abdominal cavity.

FIG. 4. (a) Follow-up CT revealed improvement of hydronephrosis and ureteral dilation. (b) There was no recurrence of hernia on follow-up CT. The arrow shows normal right ureter.

The sacrospinous ligament divides the sciatic notch into the greater and lesser sciatic foramina. The greater sciatic foramina is further subdivided by the piriformis muscle into the suprapiriformis and infrapiriformis foramina, and prolapse of the ureter commonly occurs through the suprapiriformis foramina.²

It has been reported that the predisposing factor for the development of USH is piriformis muscle atrophy, which is caused by hip joint disease or neuromuscular disorders. USH occurs more often in older females due to decrease in muscle mass, larger pelvis, and increased abdominal pressure.² In our case, the patient was healthy and had no medical history, so we could not confirm the exact reason of USH.

The diagnosis is commonly made on imaging, including CT, RU, and intravenous urography. An obstruction of the ureter with U-shaped tortuosity into the sciatic foramina, also referred to as a “curlicue ureter” sign, is considered a characteristic finding.³

The treatment of USH has been reported as surveillance, ureteral stenting, and surgical repair. Surveillance should be reserved for stable and asymptomatic patients with an incidental detection. Ureteral stent placement, which is the most frequently reported in the reports, can be applied for high-risk surgical patients because of relatively easy and minimally invasive procedure.⁴ However long-term follow-up is required for regular stent replacement and it remains possible that the ratio of recurrence is higher in the ureteral stenting than that in surgical therapy.

Surgical correction has been reported with open, laparoscopic, and robotic approaches. The surgical options are reduction of the ureter and repair of the hernia. Methods of closure of the hernia defect include packing the connective tissue, reapproximating the cut peritoneal edges with suture or hemostatic clips, and patching across the mesh.^{1,2} However, artificial materials such as mesh have the possibility of infection or adhesion. In our case, we closed the hernia defect by suturing the peritoneal edges and placed the part of ureter in the abdominal cavity to avoid any complications caused by artificial materials.

Conclusion

There have been no reports regarding long-term prognosis of USH. Since our patient has had no recurrence for 6 months after operation, we consider that laparoscopic intraperitonization of the ureter can be a useful treatment for USH.

Disclosure Statement

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Abbreviations Used

CT = computed tomography

RU = retrograde ureterography

USH = ureterosciatic hernia

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