

Case Report

Unilateral Inguinoscrotal Herniation of the Ureter, Colon and Small Bowel Associated with Ipsilateral Renal Failure and Urinary Retention in an Asymptomatic Patient: Case Report and Literature Review

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Abstract

Introduction: Inguinoscrotal herniation of the ureter is a rare and often misdiagnosed condition that is frequently found in obese patients or in cases of anatomical variation whether congenital or postoperatively of the urinary system.

Case Presentation: A 69-year-old man was referred to our Emergency Room by his family physician due to a large left inguinoscrotal hernia, despite the fact that the patient had no complaints. Imaging revealed that it contained the ipsilateral ureter, loops of small bowel, and colon and highlighted changes in the prostate, probably due to malignancy. The patient presented associated ipsilateral renal failure manifested by urinary retention and ureteral dilation.

Discussion: During the surgery, the patient was found to have a massive indirect sliding inguinoscrotal hernia, which was repaired using the Liechtenstein herniorrhaphy technique. A ureteral stent was not placed during the procedure pending further urological investigations. In concordance with the literature, an anterior deviation of the ureter (by 3cm) was documented by CT imaging.

Conclusion: Ureteral herniation may be found in asymptomatic patients. In obese patients with no past medical or surgical history of urological disease (namely renal transplantation), the surgical management of such cases is the same as in symptomatic inguinal hernias.

Introduction

Inguinal ureteral herniation is a rare and often misdiagnosed condition. When found intraoperatively, it may be challenging for a general surgeon performing a routine herniorrhaphy. As described in the literature, we can distinguish two types of ureteral herniation: intra- or extra- peritoneal. Up until October 2018, 166 cases were described in the English literature [1-15]. From an epidemiological viewpoint, this condition is often found in obese patients in their 50s-60s. As Allam et al. suggest, the abundant retroperitoneal fat that separates the ureter from the ipsilateral psoas muscle in obese patients with no urological disease may be the principal cause of herniation. Congenital anatomical abnormalities and postoperative variations of the urinary system have also been identified as risks factors.

In this case report, we describe the rare case of a patient presenting with a massive yet asymptomatic left inguinoscrotal hernia containing the ipsilateral ureter, loops of small bowel and colon, associated with complete left renal failure, urinary retention (3L were subsequently drained) and signs of prostatic malignancy documented by CT imaging.

Case Presentation

A 69-year-old hypertensive man was referred to our Emergency Room by his family physician following his annual check-up during which a massive left inguinoscrotal hernia was found, associated with a palpable abdominal mass. It is worthy to note that he had been previously followed for his hernia but had refused a herniorrhaphy back in 2016. The patient was completely

asymptomatic, was voiding normally and explained that the hernia had increased in size over the past 3 weeks.

Clinically, he was obese and a suprapubic mass was palpable, compatible with a distended bladder. Laboratory tests showed an elevated creatinine value of 140 micromol/L. Abdominal CT scan (Figure 1,2) revealed a distended bladder (containing 3L of urine) and a left inguinoscrotal hernia containing the ipsilateral ureter, the left colon and loops of small bowel. It also showed left hydronephrosis causing renal failure, most likely due to mass effect from possible malignancy arising from the prostate, in addition to two pulmonary nodules.



Figure 1, 2: Injected abdominal computed tomography in coronal (Figure 1) and sagittal (Figure 2) view (in venous phase) demonstrating herniation of ureter (arrow), small bowel (SB) with left hydronephrosis (*) and distended bladder (B).

A urinary catheter was placed and the patient was taken to the operating room. He was found to have a massive indirect sliding inguinoscrotal hernia associated with intraperitoneal ureteral herniation, which was repaired according to the Rutkow herniorrhaphy technique. A ureteral stent (pigtail catheter) was not placed during the intervention as the patient was scheduled to undergo further urological investigation following the herniorrhaphy in order to rule out underlying prostatic malignancy. It is interesting to note that the value of the creatinine normalized in the postop phase, once the hernia was reduced.

Discussion

As in the above case, inguinoscrotal ureteral herniation can be asymptomatic and only discovered intraoperatively, leading to a higher risk of iatrogenic ureteral lesions [16]. There are two types of ureteral hernias: para-peritoneal (80%) and extra-peritoneal (20%). According to Sidiqi MM et al, the para-peritoneal herniation is characterized by a peritoneal sac that indirectly engulfs the ureter into the wall of the hernia. This sac is not found in the extra-peritoneal hernia. When multiple structures are found in the hernia, it is important for the surgeon to be meticulous during the dissection as the ureter is often contained within the fat and must be reduced back into the retroperitoneal space following cord separation [9]. Abdominal CT imaging in the preoperative phase allows for characterization of the contents within the hernia. Allam et al. report that anterior deviation of the ureter may predict inguinoscrotal herniation (at the level of L4) [15]. In Figure 3, we can see that our patient had a ureteral deviation of 3cm at the level of L4-L5, in accordance with the above statement.

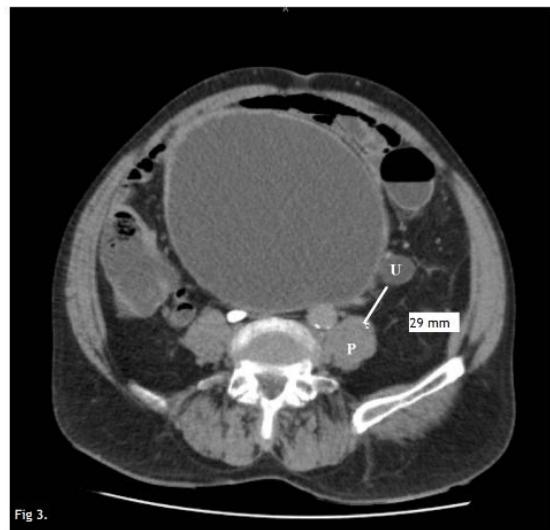


Figure 3: Abdominal computed tomography in axial view (injected, venous phase) showing the anterior ureteral deviation with a distance of 29 mm at L4-L5 level between psoas (P) and left ureter (U).

Intestinal ischemia and renal insufficiency are potential complications of this type of herniation. Ipsilateral hydronephrosis due to ureteral herniation should be monitored in the postoperative phase and a Pigtail stent should be placed if the renal function does not recover. As described by Eilber et al., incarceration is uncommon due to the size of the hernia [14].

Conclusion

In this case report, we described a rare condition that can be found in asymptomatic patients. In obese patients with no past medical or surgical history of urological disease (namely renal transplantation), the surgical management of such cases is almost the same as in symptomatic inguinal hernias. According to the algorithm described by Yahya et al. [17], the surgeon should systematically investigate (via ultrasound and then CT) unexplained renal failure or urinary tract infections in patients presenting an inguinal hernia. Furthermore, they suggest that in cases of ureteral inguinal herniation, ureterocystoscopy with stenting should be realized before the inguinal hernia repair.

We believe that it is important to repair the hernia and restore the patient's normal anatomy by open herniorrhaphy before proceeding with urological investigations as others urological procedures may not be necessary in the postoperative setting. As for the surgical technique, the literature agrees on using a tension free technique for the hernia repair. A laparoscopic approach is still not described in cases of ureteral inguinal herniation and we believe that further research in this domain is needed.

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