

Case Report

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Incidental finding of a rare ureteroinguinal hernia: general surgeons take heed!

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ABSTRACT

Ureteroinguinal hernias are a rare phenomenon where the ureter is found in the hernia sac of an inguinal hernia, with less than 150 cases reported worldwide. They can be asymptomatic or symptomatic, and are commonly found perioperatively. We present a case of a 74-year-old man who was initially referred for consideration of surgery of bilateral inguinal hernias. The patient was relatively asymptomatic and given comorbidities the risk of surgery outweighed the benefits and he was discharged from the clinic. He was re-referred to general surgery after he sustained a fall, and subsequent computer tomography (CT) imaging of his abdomen demonstrated a right inguinal hernia containing the right distal ureter, resulting in ureteric obstruction and hydronephrosis. He subsequently underwent an open right inguinal hernia repair where the ureter was not able to be identified, but was safeguarded with blunt dissection techniques. Post operatively his renal function was stable. Ureteroinguinal hernias are most commonly found perioperatively, and therefore are at risk during dissection. Preoperative CT imaging is invaluable in the detection of ureteroinguinal hernias, and can help in the safeguarding of the ureter during operation. While a clinical diagnosis is usually all that is required for decision-making for an inguinal hernia repair; the surgeon should consider the addition of radiological work-up when the patient presents with atypical symptoms, or the hernia sac may contain intra-abdominal structures. This will ensure correct diagnosis of the contents and subtype of inguinal hernia, and help prevent iatrogenic injury.

Keywords: Ureteroinguinal hernia, Hernia repair, Ureteric obstruction, General surgery

INTRODUCTION

Inguinal hernias are a common occurrence in the general population, and there are over 20 million inguinal hernia repairs performed annually across the globe.¹ Inguinal hernias can be direct, arising from a weakness in the posterior wall of the inguinal canal, or indirect, which protrude through the deep inguinal ring, to enter the inguinal canal.²

As such, inguinal hernias can contain a multitude of intraabdominal contents, ranging from small bowel, large bowel, appendix (Amyand), omental fat, and can even

contain the bladder and pelvic organs.³ Much less commonly, the ureter can be found in an inguinal hernia, and as of 2017, less than 150 cases were reported worldwide.⁴

CASE REPORT

A 74-year-old was referred to the General Surgical Clinic from the GP for consideration of bilateral inguinal hernia repair. He had an ultrasound, which demonstrated "bilateral large fat containing inguinal hernias with the deep inguinal ring measuring approximately 35mm bilaterally". The patient was reviewed and on

examination was noted to have large bilateral inguinoscrotal hernias. The patient was relatively asymptomatic, and given comorbidities including type 2 diabetes mellitus (T2DM), previous stroke, congestive cardiac failure, morbid obesity, and chronic kidney disease stage 3, the risk of surgery outweighed the benefits and he was discharged from the clinic.



Figure 1: CT abdomen demonstrating the right ureter entering right deep inguinal ring, with hydronephrosis of the right kidney.

Three months later the patient had a fall in his nursing home, was taken to Emergency and a computer tomography (CT) scan of the abdomen and pelvis was performed. The CT reported “right hydronephrosis noted and this is secondary to a right inguinal hernia which contains the right distal ureter, resulting in ureteric obstruction. The neck of the hernia measures 37 mm.” (Figure 1)

The patient was re-referred to the general surgical clinic and urology, and subsequently booked for a right sided inguinal hernia repair. Prior to surgery he had a nuclear medicine MAG-3 which demonstrated bilateral impaired renal tract flow on post-frusemide dynamic renal scintigraphy, worse on the right. His creatinine was 106 with an eGFR of 59. Due to comorbidities, the procedure was performed under spinal anaesthetic. At the time of operation, a large inguinoscrotal hernia with retroperitoneal fat and ureter within it was noted, completely destroying the posterior wall. Significant fibrosis was noted, and in order to define anatomy, the decision was made to perform a right orchidectomy. Unfortunately, the ureter was never visualised, but blunt dissection techniques were used to avoid injury. Prolene mesh was used in the extraperitoneal plane.

Post operatively, the patient was well, with a creatinine of 115 and an eGFR of 54. He was discharged from hospital 4 days after surgery, but represented 2 weeks post-surgery with a wound infection. This was treated conservatively.

DISCUSSION

The first described case of a ureteroinguinal hernia was back in the 1880s, and since then less than 200 cases have been reported worldwide.⁵ Ureteroinguinal hernias can occur in one of two ways. The first, and more common (80%) is paraperitoneal, wherein the ureter is adherent to the parietal peritoneum and is pulled down into the inguinal canal with the hernia sac, usually accompanied by other visceral organs within the hernia sac.⁶⁻⁸ The second, and less common (20%) is extraperitoneal, which is due a congenital abnormality of the ureter where there is adhesions to the genitoinguinal ligaments, or abnormal differentiation from the Wolffian duct which results in the ureters descending into the scrotum with the testicles.⁶⁻⁸ This type of ureteroinguinal hernia is characterised by the absence of the peritoneal sac.

Risk factors for the development of a ureteroinguinal hernia include obesity (resulting in increased intra-abdominal pressure), and post kidney transplantation (resulting in the relocation of the ureter to the preperitoneal space).⁸ Ureteroinguinal hernias can be asymptomatic, or present with obstructive uropathy if the hernia has caused hydronephrosis.⁹ If there is bladder involvement, the patient may experience lower urinary tract symptoms such as frequency, urgency, and difficulty emptying.¹⁰ Presentation with obstructive uropathy or strangulation are uncommon due the generally large size of the hernia.⁶ In our case, the patient’s obesity was most likely a key contributor to the development of his ureteroinguinal hernia, and despite his comorbidities, the presents of hydronephrosis tipped the scales in favour of operative fixation.

While the majority of ureteroinguinal hernias are diagnosed intraoperatively, in this case the patient was diagnosed preoperatively with a CT abdomen.⁶ The ureter was not identified on an ultrasound of the inguinal hernia, and given the operative findings may have been difficult to diagnose at the time of operating. Diagnosis of an inguinal hernia is generally made clinically, with the aid of radiological investigations such as ultrasound, and computer tomography (CT) when attempted to differentiate the contents of the hernia sac.^{1,2} The literature suggests that preoperative CT abdomen and pelvis is invaluable in the diagnosis of a ureteroinguinal hernia, and can also provide valuable information on any complications secondary to the hernia, such as hydronephrosis.⁸ This case highlights the importance of preoperative work up of inguinal hernias, and increased diligence of surgeons in identifying and safeguarding critical structures during an inguinal hernia repair.

CONCLUSION

Inguinal hernias are a frequent occurrence across the globe, and surgical repair remains the definitive treatment. While a clinical diagnosis is usually all that is required for surgery, the surgeon should consider the

addition of radiological work-up when the patient presents with atypical symptoms, or the hernia sac may contain intra-abdominal structures. This will ensure correct diagnosis of the contents and subtype of inguinal hernia, and help prevent iatrogenic injury.

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