Functional medicine

Not just a simple inguinal hernia. A rare case of an inguino-scrotal ureter!

Joshua Winston a,*, James Salinas b, Fadi Nuwayhid b

a The Alfred Hospital, 55 Commercial Road, Melbourne, VIC, 3004, Australia
b Royal Hobart Hospital, Department of Urology, 48 Liverpool Street, Hobart, TAS, 7000, Australia

ABSTRACT

Inguinal hernias involving the ureter or inguino-scrotal ureters are a rare and infrequently described finding with both clinical and surgical consequence. While the majority are asymptomatic and rarely cause obstructive uropathy our case aptly highlights the risk to a general surgeon prior to an elective hernia repair. A review of the literature outlines a systematic approach of investigation if clinical suspicion of an inguino-scrotal ureter is raised, with careful operative planning and a multidiscipline approach for repair recommended.

Introduction

This case report is based upon a 75 year-old gentleman who was referred to a General Surgeon by his GP for management of a reducible inguino-scrotal hernia progressing over one year. This is on a background of morbid obesity, hiatus hernia and alcohol-induced hepatitis.

Case presentation

Prior to the surgeons review an ultrasound was performed which showed an elongated simple fluid filled “structure” in the right groin which was thought to be a patent processus vaginalis with no herniation. Clinically he had an inguinoscrotal ‘hernia’ in the right groin with reducibility from the scrotum proximally. Further investigations were arranged including a CT abdomen, which revealed the right hernia sac, contained the right ureter and consequent right hydroureter and hydrenephrosis.

He was then referred to the supervising author Urologist who ordered an urgent CT Urogram, which revealed the rare diagnosis of a right-sided uretero-inguinal hernia (Figs. 1–3).

Discussion

While uretero-inguinal hernias are not uncommon, herniation of the ureter and other urological organs is incredibly rare, further more they are commonly asymptomatic and often found incidentally during the work up for other abdominal pathology.

On review of the literature there are under 140 cases of ureteral inguinal hernias have involved native kidneys. Fewer than 10 of these cases of ureteral inguinal hernias have involved native kidneys.

It is unclear how and why the ureter was dragged towards the internal ring, through the inguinal canal, into the hemiscrotum and then to course back to the retroperitoneal to drain into the bladder. Could have it occurred early in development or acquired? The most common cohort of this pathology is older obese males.

Uretero-inguinal hernias can be separated anatomically as para-peritoneal (80%) or extraperitoneal (20%). Paraperitoneal can also be described as the acquired variant which is thought to be caused by the traction of other abdominal organs surrounding the hernia causing the ureter to be delivered into the scrotum. Extraperitoneal conversely can be described as congenital due to the malformation of ureter to the genitofemoral ligaments causing the pathology. Unlike extraperitoneal which usually cause urinary symptoms, paraperitoneal are nearly always asymptomatic due to large size of the hernia and fatty constituent.

With many cases being found intra-operatively during hernia repair, it’s vital the clinician thoroughly works up a patient with any clinical suspicion to prevent ureteral damage. In patients with an inguinal hernia the routine pre-operative assessment should at least include a urine MCS plus UECs with baseline and trend comparison, however this might not be performed in the routine hernia repair. We suggest that any
Patient with an abnormality from the above investigations should undergo an ultrasound of the renal tract as the first line modality as it can reliably without radiation identify abnormalities such as hydronephrosis or hydroureter.\textsuperscript{2,6} From here a CT intravenous pyelogram/urogram can be used to accurately assess the patient and should include a urology referral.\textsuperscript{2}

Beyond a troublesome symptomatic inguinal hernia, from a urological perspective repair is indicated to prevent obstructive uropathy and its associated sequelae.\textsuperscript{5} Temporary management can include nephrostomy tube placement for operative planning in uropathic patients, or regular clinical review with renal function results for patients without biochemical obstruction.

Optimum definitive management includes an open hernia repair with mesh with pre-operative ureteric stents to aid careful dissection and prevent iatrogenic injury. From a urological perspective surgical techniques involve an open approach, attempting to retract the ureters to cut abundant distal ureter and careful re-implantation with great caution due to risk of ureteric ischemia. We also recommend all cases are conducted as a multidisciplinary approach between Urology and General Surgery departments.\textsuperscript{3} It is important to remember as shown in the case presented, consideration of a patient’s co-morbidities and risk of complications should be reflected prior to intervention.

**Conclusion**

In conclusion our case shows the need for an elevated index of suspicion in the ‘high risk patients’ who may have a ureter containing hernia despite its rarity. This illustrates the importance of preoperative assessment based on basic screening, multidisciplinary management and never assuming each presentation will be a ‘textbook’ case.
Disclosure statement

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of competing interest

There are no conflicts of interests to declare.

Acknowledgements

Nil.

References

1. Allam ES, Johnson DY, Grewal SG, Johnson FE. Inguinoscrotal herniation of the ureter: description of five cases. Int. J. Surg. Case Rep. 2015;14:160–163.
2. Yahya Z, Al-habbal V, Hassen S. Ureteral inguinal hernia: an uncommon trap for general surgeons. BMJ Case Rep. 2017. https://doi.org/10.1136/bcr-2017-219288, bcr2017219288.
3. Giuly J, François GF, Gialy D, et al. Intrascrotal hernia of the ureter and fatty hernia. Hernia. 2003;7:47–49.
4. Lu A, Burstein J. Paraperitoneal inguinal hernia of ureter. J Radiol Case Rep. 2012;6:22–26.
5. Hong LE, Tan C, Li J. Obstructive uropathy secondary to uretero-inguinal hernia. J Clin Imaging Sci. 2015;5:33. https://doi.org/10.4103/2156-7514.159448. Published 2015 Jun 29.