Oncology

Ureteric inguinal herniation with obstructing bladder tumour

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ABSTRACT

While ureteric orifice obstruction by bladder tumour is common, an inguinal hernia containing ureter is rare. The simultaneous occurrence of both has not previously been reported and made management both challenging and unique. We present the case of a 75-year-old man who presented with a symptomatic right inguinal hernia, which was found on imaging to include the right ureter. Cystoscopy to perform right ureteric stent insertion revealed bladder tumour obstructing the ipsilateral ureteric orifice. A multi-disciplinary approach involving urology, general surgery and interventional radiology was successful in achieving tumour resection, ureterolysis with preservation of ureter and inguinal hernia repair.

Introduction

Inguinal herniation is ubiquitous, with 0.3% of Americans undergoing inguinal herniorrhaphy annually.1 Ureteral involvement is rare, however, with fewer than 140 reported cases.2,3 The concurrent presentation of both ureteric inguinal herniation and bladder malignancy is rarer still and has not previously been reported.

Case presentation

A 75-year-old male presented with right inguinoscrotal discomfort and swelling. He denied all other symptoms. On physical inspection, the patient was obese, ambulated easily and had normal vital signs. Abdominal examination revealed a right inguinoscrotal hernia. The hernia measured approximately 10 × 4 × 4cm and was irreducible, non-tender and without cough impulse. Both testes were present and has not previously been reported.
transferred intubated and sedated to the general operating theatre. Midline lower laparotomy was performed, followed by extra-peritoneal right ureterolysis to the deep inguinal ring. The ureter was found adherent to scrotal skin and irreducible. A separate right inguinal incision was performed, with successful scrotal ureterolysis (Fig. 2). The ureter was then reduced into the pelvis, and the inguinal hernia repaired in the Lichtenstein method.

Rigid cystoscopy was performed, with no further bladder tumour visible. The universal guidewire was exchanged for a 0.038 inch diameter Boston Scientific Sensor™ guidewire, and the ureteric access sheath removed. Right flexible ureteroscopy was unsuccessful due to a distal ureteric stricture. Retrograde placement of a 6-French 30cm ureteric stent was initially also unsuccessful due to the > 30cm ureteric length. However, manual manipulation via the laparotomy incision to shorten the ureter successfully facilitated placement. The patient recovered well and was discharged day nine post-operatively.

Six weeks later, right ureteroscopy was again unsuccessful despite stent dilatation, and the stent was removed. The patient's eGFR remained at baseline. CT IVP two days post-operatively confirmed prompt passage of contrast to bladder, and the patient was discharged.

Two months postoperatively, the patient remains asymptomatic, with normal renal function. Close monitoring is planned to detect the development of either obstructive uropathy or recurrent urothelial carcinoma.

Discussion

Ureteric inguinal herniation is rare. Most patients suffer symptoms only from the hernia itself, without flank pain, lower urinary tract symptoms or sequelae of obstructive uropathy. Risk factors are male gender and obesity (factors shared by bladder cancer), with most cases occurring aged 40–60 years and involving the right ureter. Our patient, therefore, comprised a classic presentation of this uncommon disease.

Imaging investigations classically reveal redundant ureter looping into the inguinal region. However, the diagnosis may not be made pre-operatively, due to the frequent absence of urological symptoms, and the non-specific sonographic appearance of the ureter in the hernial sac. Inadvertent ureteric injury during herniorrhaphy may ensue, with loss of the renal unit.

Treatment goals are symptom resolution and renal preservation. The most common approach involves retrograde ureteric stent placement (although often unsuccessful), followed by open ureterolysis and hernia repair. Pre-stenting is prudent to help distinguish sac from ureter. If retrograde attempts are unsuccessful, the authors recommend attempted antegrade stenting, rather than proceeding without a stent.

Ureterolysis is frequently challenging due to ureteric-scrotal adhesions. Adequate ureterolysis to allow stenting is unlikely to be possible via a purely an abdominal approach. An extra-peritoneal combined inguinal and lower midline laparotomy allows comprehensive ureteric access and rapid patient recovery.
The authors were only able to identify one other case of urothelial carcinoma synchronous with ureteric inguinal herniation. Urothelial carcinoma in this case however was located in the right renal pelvis. Therefore, we believe our patient represents the first report of ureteric inguinal herniation simultaneous with bladder tumour.

Conclusion

Ureteric inguinal herniation is rare. The diagnosis may not be apparent pre-operatively, and the surgeon must be cautious during every herniorrhaphy. Management goals involve symptom relief and protecting renal function. Operative repair ideally occurs in a multi-disciplinary setting and consists of ureteric stent insertion, laparotomy ± inguinal incision, ureterolysis and hernia repair.

Author contributions

HY and NK conceived the research idea. FH wrote the first manuscript. All authors refined the final manuscript and were involved in the patient’s care.

Declarations of interest

None. Written consent was obtained for publication of this case report.

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None.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.eucr.2019.100924.

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