Inflammation and infection

Upper and lower urinary tract obstruction secondary to inguinoscrotal hernia containing bladder and prostate gland

Jonathon Dawson *,1, Vincent Koo

Alexandra Hospital, Redditch, B78 7UB, United Kingdom

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ABSTRACT

Inguinal hernia is a common clinical presentation, with 1–3% containing some of the urinary bladder. Most cases are asymptomatic and diagnosed intraoperatively at hernia repair. We describe a case of an 84-year-old man presenting with acute urinary retention in a bladder had herniated entirely into his scrotum. He was managed conservatively with urinary catheterisation and discharged home. He re-presented with urosepsis secondary to bilateral ureteric obstruction. This was treated with antibiotics and nephrostomy and his hernia was ultimately repaired. Clinicians should consider both upper and lower urinary tract obstruction in patients with significant bladder herniation.

Introduction

Urinary bladder can be found in 1–3% of all inguino-scrotal hernias. The vast majority of these are small and asymptomatic; they are therefore often diagnosed intraoperatively during routine inguinal hernia repair. Other symptoms include non-specific lower urinary tract symptoms such as dysuria, urinary frequency and urgency, or a palpable scrotal mass. Possible imaging modalities to diagnose bladder herniation include non-contrast CT, CT urogram or ultrasound of the urinary tract and scrotum, however it has been suggested that all patients receive a CT scan at some point due to a weak association with urinary tract malignancy.

Case presentation

An 84-year-old gentleman with no significant past medical history was referred by his General Practitioner to the Emergency Department with a two-day history of pain in a longstanding right inguinoscrotal swelling. It was noted that he had also had difficulty passing urine for the previous 48 h. On examination his abdomen was soft and not tender, and in particular there was no palpable bladder suprapublically. He had a large right inguinoscrotal hernia which contained a large, tender, firm mass.

Bloods on admission were unremarkable other than an acute kidney injury with a creatinine of 136μmol/L from a baseline of 68μmol/L. Computerised tomography of his abdomen and pelvis with intravenous contrast showed herniation of several bowel loops, the prostate gland and the entire bladder into the right hemiscrotum causing obstructive uropathy (Fig. 1). The prostate gland was 123 cc in volume. A 14Ch 2-way Foley catheter was inserted with some difficulty and a residual volume of 2000ml was drained from the bladder. Following discussion with the patient and his family regarding definitive management of the hernia, a joint decision was made to treat conservatively. He remained clinically stable and was subsequently discharged home with long-term catheter in situ.

The patient re-presented to the Emergency Department ten days following discharge in an acute confusional state. Examination was unremarkable other than the hernia which was no longer tender. The patient’s catheter was still in situ and was found to be patent.

Bloods on this occasion revealed high inflammatory markers and a worsening acute kidney injury: C-reactive protein was 211mg/L, white blood cells 30.3 × 10⁹/L, creatinine 298μmol/L, and potassium 6.1mmol/L. The patient was initially medically treated for hyperkalaemia and urosepsis with intravenous insulin, fluids and broad-spectrum antibiotics. Following this potassium improved to 4.9mmol/L before increasing to 5.9mmol/L over the subsequent day.

Ultrasound scan of his urinary tract showed persistent bilateral hydronephrosis, likely due to bilateral ureteric obstruction at the point...
of entry into the inguinal hernia. Emergency nephrostomies were inserted bilaterally. The patient’s clinical condition and blood tests improved with continuing antibiotic and fluid therapy over the subsequent three days.

At this point the management of his hernia was re-assessed and a joint decision was made with the patient that he would have an open mesh repair of his inguinal hernia on the same admission. Following successful repair of his hernia, nephrostogram showed no further obstruction and hence the nephrostomies were removed. He has had no recurrence of symptoms since his operation.

Discussion

In this case the patient initially presented with acute urinary retention, likely secondary to compression of the urethra below the level of the herniated prostate gland. To our knowledge this has not previously been reported in the literature as an initial presentation of bladder herniation. This was successfully decompressed with a urinary catheter. While there have been no randomised controlled trials on the subject, it is thought that preoperative catheterisation and surgical repair are indicated in patients with symptomatic bladder hernias. However, there is a high risk of damage to the bladder and so it was decided to manage this case conservatively.

This patient presented on a second occasion with urosepsis likely secondary to upper urinary tract obstruction given the ultrasound findings of bilateral hydronephrosis. There are few reports of upper tract obstruction secondary to inguinoscrotal hernia in the literature, and all these cases are unilateral.

Conclusion

This case demonstrates a rare presentation of a common pathology. On the patient’s first discharge it was thought that his bilateral hydronephrosis was secondary to vesicoureteric reflux following acute urinary retention rather than compression of both ureters. Clinicians should therefore be alert to this possibility in future and consider repeat imaging and renal function tests to assess for resolution of obstructive uropathy resulting from a herniated bladder. Repair of the inguinal hernia should be considered for all patients with symptomatic herniation of the urinary bladder.

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