Unusual presentation of more common disease/injury

An unusual case of chronic urinary retention and bladder diverticulum presenting with unilateral lower limb swelling

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Summary

A 64-year-old man presented with 1 month of gradual-onset left leg swelling and lower urinary tract symptoms including enuresis, frequency and poor stream. He was initially treated for suspected cellulitis, however, he returned 2 weeks later with persistence of his symptoms. Routine biochemical investigation revealed renal failure (Cr 623, Ur 29.9) and hyperkalaemia (K 7.2). Abdominal examination revealed a distended urinary bladder and an ultrasound scan revealed hydronephrosis, confirming the diagnosis of chronic high-pressure urinary retention. A urinary catheter was passed that initially drained 1.5 litre of clear urine. Shortly after insertion, this became heavily blood stained. A CT kidney ureter bladder (CTKUB) revealed a large mass behind the bladder thought to represent either an abscess or tumour. Cystoscopic correlation showed this to be a large, narrow-necked bladder diverticulum tensely distended with clot. Following successful clot evacuation and decompression of the bladder the leg swelling resolved and renal function improved.

BACKGROUND

Lower limb swelling is a common problem presenting to medical professionals across many disciplines. Although cases of leg swelling presenting as a consequence of chronic urinary retention have been previously documented^{1 2} this is the first case of a large posterior bladder diverticulum causing sufficient venous compression and consequent venous congestion to cause leg swelling. The prompt recognition of this constellation of symptoms could have expedited appropriate treatment and ultimately preserved renal function.

CASE PRESENTATION

A previously well 64-year-old man presented to his general practitioner with a 1-month history of gradual-onset left leg swelling and lower urinary tract symptoms including enuresis, frequency and poor stream, he denied any visible haematuria in the past. He was treated for suspected left leg cellulitis with oral flucloxacillin; however, he returned 2 weeks later with persistence of his symptoms. Routine biochemical investigation at this time revealed renal failure (Cr 623, Ur 29.9) and hyperkalaemia (K 7.2) following which he was urgently referred to the care of the local hospital.

On arrival his vital signs were within normal limits and cardiovascular and respiratory examination was normal. Abdominal examination revealed a soft abdomen with a smooth suprapubic mass arising from the pelvis that was dull to percussion. Rectal examination revealed a 40 g smooth, non-tender flat prostate gland with no other rectal masses. Examination of the lower limbs revealed a neurovascularly intact left leg with pitting oedema to the upper thigh, the right leg examination was normal. A urethral catheter was inserted that drained 1.5 litres of clear urine; however, he developed haematuria during the first night of his admission.

An ultrasound scan on the second day of admission confirmed bilateral hydronephrosis and revealed a distended bladder containing an echogenic mass approximately 10 cm×8 cm in size (figure 1), it also excluded a left sided deep vein thrombosis. He went on to have a CTKUB on the third day of his admission to exclude proximal obstruction to his renal tracts and this revealed the presence of a mass behind the bladder measuring 10 cm×10 cm, which appeared to be separate from the bladder, and was thought to represent either an abscess or tumour (figure 2). There was also noted to be a lytic lesion in the left ilium.

DIFFERENTIAL DIAGNOSIS

- ▶ Pelvic malignancy
- ▶ Pelvic abscess

Figure 1 Ultrasound showing large pelvic mass.

Figure 2 Unenhanced CT scan revealing large mass posterior to the urinary bladder.

TREATMENT

Despite bladder wash-outs and continuous bladder irrigation the patient's catheter regularly blocked and he was taken to theatre for a cystoscopic evacuation of bladder clots on the third day of his admission. This revealed the presence of a large, narrow necked diverticulum, tensely distended with clot on the posterior wall of the bladder. The remaining bladder mucosa was normal.

Following this intervention and successful decompression of the diverticulum, the serum urea and creatinine fell (Ur 10.1, Cr 250) and the left leg returned to normal size. An MRI scan postbladder decompression confirmed the absence of any pathological lymphadenopathy and a cystogram 2 weeks after discharge confirmed the presence of this diverticulum, which drained completely in the prone position (figures 3 and 4).

OUTCOME AND FOLLOW-UP

The patient remains catheterised and is waiting for a transurethral resection of prostate. Following this, we will repeat his cystogram to evaluate its emptying with a view to diverticulectomy in the future. In the interim, to ensure the adequate drainage of his bladder diverticulum

Figure 3 Cystogram showing large posterior diverticulum

Figure 4 Cystogram following prone position for 5 min.

he is encouraged to sleep in the prone position. The lytic lesion in the left ileum was reviewed by our radiology department and in light of the benign unifying diagnosis was considered non-significant.

DISCUSSION

High-pressure chronic retention of urine has previously been defined as the maintenance of voiding, with a bladder volume of >800 ml and an intravesical pressure of >30 mm Hg with associated hydronephrosis.⁵ The true incidence of this condition, owing to the heterogeneity of presentations, is still not known. The most common sequelae of high-pressure chronic retention are the progression to acute-on-chronic retention and renal failure. Bladder diverticuli are common findings in patients with chronic bladder outflow obstruction and can vary greatly in number, size and location.

Figure 5 Annotated pelvic unenhanced CT displaying normal calibre right external iliac vessels and compressed left external iliac vein. Note left displacement of bladder diverticulum against iliacus muscle.

The combination of concurrent onset of enuresis and leg swelling and cessation of leg swelling following evacuation of clot from the diverticulum (rather than following initial insertion of a urinary catheter) in the case described suggests that the posterior bladder diverticulum, while distended, was large enough to cause compression of the left external iliac vein. This compromises the lower limb venous return causing venous stasis and oedema. Review of the pelvic unenhanced CTKUB revealed that the posterior diverticulum is displaced towards the left side of the pelvis and compresses the external iliac vein with normal calibre external iliac vein on the right-hand side (figure 5).

There are cases in the literature of chronic urinary retention presenting as leg swelling resembling a proximal deep vein thromboses.^{1 2} This is, however, the first description of a posterior bladder diverticulum causing such symptoms.

Learning points

- ▶ Leg swelling is a rare, but recognised, presentation of chronic urinary retention.
- ▶ Delay in arriving at the diagnosis could lead to consequences of chronic urinary retention, namely renal failure and hyperkalaemia.
- ▶ Routine abdominal examination in patients presenting with unilateral leg swelling is always advocated.

Competing interests None.

Patient consent Obtained.

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