Unusual presentation of more common disease/injury

Chronic contained aortic rupture presenting as anterior thigh pain

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Correspondence to Dr Andrew Keller, frugal_nifty@hotmail.com**Summary**

An 83-year-old man presented with severe left anterolateral thigh and knee pain for several days. He was completely unable to ambulate owing to the pain. The patient reported no history of acute back pain prior to presentation. His history initially confounded diagnosis. Subsequent investigations demonstrated a chronic contained rupture of an infrarenal aortic aneurysm with significant vertebral body erosion and obliteration of the ipsilateral psoas muscle. Proposed symptomatology was compression of the lateral femoral cutaneous nerve and its roots. The patient had multiple medical comorbidities and died of unrelated causes before his aneurysm was able to be repaired.

BACKGROUND

Although we often pride ourselves on the importance and the diagnostic accuracy of a good clinical history and examination, this case demonstrates that uncommon presentations of common conditions can confound diagnosis. Of the classic diagnostic triad of abdominal aortic rupture (back or flank pain, hypotension and pulsatile abdominal mass), back/flank pain and hypotension were wholly absent and the pulsatile abdominal mass was missed as an abdominal exam is not routine in investigation for thigh pain. Cases such as this demonstrate that a less focused approach to diagnostics is sometimes required in order to facilitate timely diagnosis.

CASE PRESENTATION

An 83-year-old man presented with 3 days of severe left anterolateral thigh pain and knee pain. The knee pain had become so severe that he was completely unable to ambulate. He denied concomitant lower-back pain. He had multiple medical comorbidities including emphysema requiring continuous home oxygen, severe aortic stenosis, previous quadruple coronary artery bypass grafting and chronic renal failure. His family also remarked that he had lost 20 kg over the past few months with nausea, vomiting and loss of appetite. The patient was known to have a 5 cm abdominal aortic aneurysm (AAA) under surveillance. The patient had not undergone previous intraabdominal or endoluminal surgery. The patient was admitted under the physicians for further investigation of his weight loss, hypercalcaemia and left leg pain.

INVESTIGATIONS

On examination, the leg was hyperaesthetic to palpation and movement, but otherwise normal, with no swelling, erythema or callor. His admission bloods were notable only for a severely elevated serum calcium. His inflammatory markers and full blood count were normal. The absence of concurrent lumbago initially confounded

diagnosis. He was diagnosed with acute suprapatellar bursitis and treated with non-steroidal anti-inflammatory drugs and steroids unsuccessfully. Knee aspiration was performed and excluded septic arthritis and crystal arthropathies. Suspicion was finally raised of a malignant spinal process causing his hypercalcaemia and radicular thigh pain. CT of his abdomen and pelvis was performed to investigate for the primary site of his presumed malignancy. This investigation was performed 25 days following his initial presentation.

CT scanning demonstrated an infrarenal with a large defect in its otherwise continuous intimal calcification (A) and a contiguous soft tissue mass entirely replacing the left psoas muscle (B). Iodinated contrast media was unable to be administered because of renal insufficiency. An MRI demonstrated a retroperitoneal mass continuous with the aorta eroding the vertebral bodies of L2 and L3 (C). Flow void was present within the mass (D). These appearances were in keeping with a chronic contained rupture with resultant bony erosion and compression of the lateral femoral cutaneous nerve and its roots (figures 1–4).

DIFFERENTIAL DIAGNOSIS

Differential diagnoses included septic arthritis, crystal arthropathies as well as causes of radiculopathy including nerve root compression from malignancy. Ruptured AAA had not been considered prior to review of the CT scan.

TREATMENT

Following his eventual diagnosis, vascular surgery was then consulted. Because of the chronicity of the rupture and the patient's poor current medical status, no acute intervention was planned. The patient died of a hospital-acquired pneumonia 4 days following our consultation and 30 days after his initial admission. No attempt at repair of his aneurysm had been made.

Figure 1 Coronal reconstruction of a non-contrast-enhanced CT demonstrating defect in intimal calcification of the infrarenal aorta representing site of extravasation.

DISCUSSION

Abdominal aortic rupture is a surgical emergency and one of the most commonly fatal surgical emergencies with mortality approaching 90%.¹ AAAs can rupture either intraperitoneally, which will normally result in fatal exsanguination prior to arrival at hospital, or retroperitoneally. A retroperitoneal rupture classically presents with the triad of back/flank pain, hypotension and a palpable abdominal mass.² However, this triad has been found to be present in only 25–50% of all presentations with AAA rupture.³ If the patient's periaortic tissues manage to contain the haematoma and resist further haemorrhage, a chronic contained rupture will result. Chronic aortic

Figure 2 Coronal reconstruction of non-contrast-enhanced CT showing a left-sided contained rupture extending almost to the pelvic brim, and entirely replacing the left psoas muscle.

Figure 3 Sagittal T1-weighted MRI scan showing L3 vertebral body erosion by aneurysm.

rupture is rare, representing roughly 4% of all presentations of aortic rupture.⁴ Among cases of chronic contained AAA rupture, erosion of the vertebral bodies is not uncommon, with studies reporting that vertebral erosion can complicate 25–30% of cases.^{5–7} Lumbar erosion is thought to be causative of lumbago, which is, most frequently, the presenting symptom for chronic contained AAA rupture.⁷ Chronic contained rupture is a differential diagnosis that needs consideration in any elderly patient presenting with severe lower back pain or radicular lower limb pain. The diagnosis can be confidently made with appropriate CT and MRI.

Figure 4 Axial positron dense T2-weighted MRI showing extensive vertebral erosion adjacent to contained aortic rupture. Flow void is present within mass. The psoas muscle on left side is unable to be visualised.

Learning points

- ▶ Abdominal aortic aneurysm (AAA) rupture can masquerade as radiculopathy and significantly delay prompt diagnosis.
- ▶ Rupture of an AAA is a surgical emergency and prompt diagnosis is necessary to improve chances of patient survival.
- ▶ Chronic contained AAA rupture is a rare presentation of AAA rupture and commonly presents with lumbago, but may present as various radiculopathies.

Competing interests None.

Patient consent Obtained.

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