CASE REPORT

Inflammatory abdominal aortic aneurysm: a persistent painful hip

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SUMMARY

The presentation of an abdominal aortic aneurysm (AAA) with isolated hip pain is a rare phenomenon. We present an atypical case of a 58-year-old previously fit man who presented with a 6-month history of progressively worsening left hip pain associated with unintentional weight loss, tender bilateral testicular swellings and a large non-tender palpable mass on abdominal examination. Urgent abdominal CT scan findings revealed a 15 cm infrarenal abdominal aortic aneurysm extending to the aortic bifurcation associated with an extensive left hydronephrosis. In theatre, the diagnosis of inflammatory AAA (IAAA) was confirmed following the presence of pyuria and a successful repair with an open approach using a bifurcated dacron graft was performed.

BACKGROUND

Inflammatory abdominal aortic aneurysms (IAAA) account for 3–10% of all AAA.^{1 2} They predominantly affect the elderly male population, with a male-to-female ratio ranging from 30:1 to 6:1 and the mean age of diagnosis between 62 and 68 years, respectively.³ Notably, the mean age of diagnosis for IAAAs is 5–10 years lower than that of non-IAAAs with atherosclerotic aneurysms accounting for the majority of this cohort. A strong correlation with smoking is suggested with an incidence ranging from 77% to 100%.⁴ Classically, the presentation of IAAAs has been documented as a triad comprising of pain, most commonly reported to occur in the back, flank and abdominal region, weight loss and a raised erythrocyte sedimentation rate (ESR).⁵ Different imaging modalities can be used in the diagnosis of IAAAs including ultrasound, MRI, CT and angiography. Contrast-enhanced CT has been shown to be the most reliable and is associated with a number of distinct features.⁶ On diagnosis, medical management of IAAAs with anti-inflammatory and immunosuppressive agents such as methotrexate, cyclophosphamide and azathioprine can be used to provide clinical and radiological improvement. However, definitive management remains surgical or interventional.⁷ In this case report, we discuss a patient who had an atypical clinical and radiological presentation of IAAA which subsequently affected the clinical management.

CASE PRESENTATION

A 58-year-old previously fit and active man had a 6-month history of progressively worsening and debilitating chronic left hip pain with an associated rapid unintentional weight loss of 38 kg. A musculo-skeletal clinical and radiological review was

unremarkable with only non-specific age-related changes notable on pelvic radiographs. Subsequent development of bilateral tender testicular swellings raised concerns of testicular malignancy, which were ruled out by an unremarkable testicular examination and a subsequent scrotal ultrasonography. However, further continuation of symptoms and new onset gradual loss of appetite raised clinical suspicions of intra-abdominal malignancy. The patient was referred for a colorectal surgical consult and on physical examination, a very large non-tender supraumbilical mass was detected.

INVESTIGATIONS

An urgent abdominal CT scan was requested and revealed a large infrarenal AAA extending to the aortic bifurcation with an anteroposterior diameter of 15 cm (figure 1). This was associated with significant hydronephrosis of the left kidney with surrounding mesenteric fat stranding. In addition, laboratory investigations revealed an elevated C reactive protein and ESR of 114 and 100, respectively.

DIFFERENTIAL DIAGNOSIS

Inflammatory aortic aneurysm.

TREATMENT

While awaiting clinic follow-up, the patient presented as an emergency with increasing abdominal pain and in light of the radiological findings, was

Figure 1 Axial CT image showing a large saccular inflammatory abdominal aortic aneurysms extending posteriorly with minimal calcification of the media and absence of surrounding aortic retroperitoneal soft tissue shadowing.

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Figure 2 Intraoperative view of open repair of inflammatory abdominal aortic aneurysms with excision of large thrombus followed by insertions of a bifurcated dacron graft.

referred to the vascular team. The patient was prepared for surgery and underwent an open AAA repair. Under antibiotic cover and systemic heparin, the infrarenal aorta and the iliac arteries were controlled and the aneurysm was repaired with a bifurcated dacron graft (figure 2). Evidence of pyuria was noted by the presence of frank pus in the urinary catheter after surgery following relief of the ureteric compression (figure 3).

OUTCOME AND FOLLOW-UP

The patient had a successful AAA repair with an uneventful postoperative recovery and at 2 months of follow-up, was pain-free and ambulating well.

DISCUSSION

IAAAs are seldom asymptomatic and are well recognised for presenting with a repertoire of signs that include weight loss, pain, with 80% of patients experiencing either back, flank or abdominal pain and raised inflammatory markers.³ In addition,

physical examination has been documented to be a useful tool for detecting IAAAs with 15–30% of patients with IAAA presenting with a tender pulsatile abdominal mass.¹ In this case, the initial presentation was of constant chronic left hip pain, which is normally secondary to lower limb or spine musculo-skeletal pathology. The presentation of isolated hip pain related to AAA has been reported twice previously and is thought to be referred pain originating from the nerves in the lumbar plexus.^{8–9} This plexus, which is formed by the ventral rami of the first four lumbar spinal nerves supplies sensory innervation to the skin and musculature overlying the hip joint. In our case the distal and lateral extent of the unruptured aneurysm seen on the sagittal and coronal CT views (figure 4) were consistent with lumbar plexus involvement and would explain the symptoms experienced. Furthermore, the testicular tenderness and swelling reported may have been related to the patient's obstructed ureter, urinary stasis and descending urinary tract infection.¹⁰

CT scanning is indeed the most reliable imaging technique for preoperative diagnosis.¹¹ CT findings of IAAAs typically include inflammatory and fibrotic changes in the periaortic regions of the retroperitoneum, soft tissue densities surrounding thickened calcified aneurysmal walls that enhance with intravenous contrast and anterolateral extension of the aneurysm with sparing of the posterior aspect.¹² The CT findings in our case demonstrated atypical features of minimal calcification of the media and absence of inflammatory soft tissue shadowing in the retroperitoneum or surrounding the aorta (figure 1). Furthermore, IAAAs commonly develop as fusiform structures, but in our case, a sacular formation was evident. Unilateral inflammatory changes were seen in the retroperitoneum and were associated with a localised fluid collection posterior to the left kidney. However, these retroperitoneal changes were most likely secondary to the development of the pyohydronephrosis rather than the direct inflammatory nature of the aneurysm. Lastly, the extensive unilateral ureteric obstruction with resulting hydronephrosis is an uncommon occurrence, but was consistent with the perioperative finding of pyohydronephrosis (figure 3).

The initial management of IAAAs is with immunosuppressive agents with definitive treatment being surgical or interventional.⁷ In this case, the patient presented with a large aneurysm with ureteric obstruction and required a surgical approach. In suitable cases, endovascular treatment may be considered.

Figure 3 The presence of pyuria following insertion of urinary catheter confirming pyonephrosis secondary to aortic aneurysmal compression of the left kidney.

Figure 4 Coronal and sagittal CT views demonstrating a large inflammatory abdominal aortic aneurysm extending inferiorly and posteriorly with extensive left hydronephrosis.

Learning points

- ▶ The clinical presentation of IAAA can be atypical depending on aneurysm morphology, size and the structures on which it impinges.
- ▶ Patients presenting with scrotal signs and significant weight loss should have complete radiological evaluation of the genitourinary system, including the abdominal and pelvic organs.
- ▶ Early recognition and vascular surgical referral can facilitate progressive clinical monitoring and optimise operative planning prior to the onset of complications.

Competing interests None.

Patient consent Obtained.

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