CASE REPORT

Ruptured aneurysm of the common iliac artery as a cause of unilateral hip pain

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Rupture of an aneurysm of the common iliac artery is a rare cause of pain in the hip. We describe an elderly hypertensive patient with an aneurysmal rupture of the left common iliac artery who presented with unilateral hip pain masquerading as septic arthritis.

Aneurysms of the common iliac artery are rare, affecting less than 0.01% of the general adult population and accounting for 1% of intra-abdominal aneurysms. In 71% of patients they develop silently with a typical presentation of haemodynamic instability after rupture, which carries a high peri-operative mortality. Rupture of common iliac artery aneurysms may be encountered in various specialties, with non-specific symptoms such as abdominal pain, genito-urinary symptoms, back pain, or sciatica. Early diagnosis of these atypical presentations is important, since prompt intervention can considerably improve the outcome.

We describe an elderly hypertensive patient with an aneurysmal rupture of the left common iliac artery which presented as hip pain masquerading as septic arthritis.

Case report

An 82-year-old man was referred to the orthopaedic unit from the emergency department with a three-day history of acute, non-traumatic pain and stiffness of the left hip. His symptoms had intensified acutely while walking to the extent that he was unable to bear weight or move the affected joint. He was known to have moderate hypertension and bilateral osteoarthritis of the hip. Examination of the left hip revealed tenderness over the greater trochanter with general reduction in passive movement.

Examination of the chest and abdomen revealed no abnormality and urine analysis was positive for nitrites. Blood tests revealed mild anaemia with a haemoglobin level of 11.4 g/dl and raised inflammatory markers with a white cell count of 16 x 10⁹/l and a CRP of 112 mg/l. There was a coexisting acute renal failure with a blood urea of 10.2 mmol/l and a serum creatinine of 158 μmol/l. Radiographs of the pelvis showed mild bilateral osteoarthritis of the hip (Fig. 1). Overnight, he developed hypotension with a blood pressure of 74/50 mm Hg, metabolic acidosis (pH 7.26) and pyrexia (38.5°C). The overall picture was consistent with a systemic inflammatory response due to septic arthritis. Since immediate ultrasonography was not available at night, empirical treatment with the administration of intravenous benzylpenicillin and flucloxacillin was commenced along with gentamicin to cover possible urinary sepsis. Subsequent ultrasonography did not identify a purulent collection in the hip and cultures from blood and urine taken before antibiotic therapy commenced were negative. Despite an improvement in his blood pressure after aggressive fluid management, his renal function deteriorated and his urinary output failed to improve.

Following ultrasonography, re-examination showed mild left-sided renal angle tenderness. The possibility of a renal cause was questioned and spiral CT of the abdomen was arranged. This unexpectedly showed rupture of a left common iliac artery aneurysm measuring 10 cm in diameter, adjacent to an intact abdominal aortic aneurysm of 3.2 cm with a contained retroperitoneal haematoma extending along the left psoas muscle into the inguinal region (Fig. 2). There was no evidence of hydronephrosis. An immediate referral was made to a vascular surgeon. Subsequent examination showed diminished peripheral pulses in the left femoral artery and lower limb, with a pulsatile mass palpable on careful abdominal examination. He underwent urgent open grafting of the affected artery with evacuation of the haematoma. He made a successful recovery.
Aneurysmal rupture of the common iliac artery is a rare cause of pain in the hip. Potential mechanisms include irritation of the psoas muscle, extension of a haematoma into the inguinal canal or pelvis and direct compression of the lumbosacral plexus by the aneurysmal sac. With hindsight, the three-day history of worsening hip pain may be explained by progressive leakage from a rupture of the left common iliac artery, with an enlarging retroperitoneal haematoma extending into the psoas muscle and inguinal canal. There is evidence to associate a significantly raised CRP with the extent of the aneurysmal tissue and pyrexia and leucocytosis with formation of a retroperitoneal haematoma. The combination of acute unilateral symptoms in the hip with hypotension, pyrexia and raised inflammatory markers shows that, in addition to causing acute hip pain, rupture of the common iliac artery can also be difficult to distinguish from septic arthritis.

Despite the extent of arteriosclerotic calcification seen on an abdominal CT scan, this was not evident on the anteroposterior pelvic radiograph (Fig. 1). Although calcification of the aneurysmal wall on pelvic radiographs may be helpful in diagnosis, its absence does not exclude an aneurysm of the common iliac artery and CT may therefore be warranted.

The importance of early diagnosis of the aneurysm is reflected in improved rates of survival. From data collected over a period of 21 years by Hiromatsu et al., the rates of rupture of the common iliac artery was found to approach 42%, which was significantly higher than that of 8% for abdominal aortic aneurysm. Emergency surgery was associated with a post-operative mortality of 20% to 33% at 30 days. Salhab, Farmer and Osman correlated the delay in surgery after rupture of an abdominal aortic aneurysm with increasing mortality. This is not surprising given the potential for haemodynamic collapse and therefore a ruptured common iliac artery should be treated urgently.

Pain in the hip may indicate a leaking or ruptured aneurysm and rupture of the common iliac artery may present with a clinical picture which mimics arthritis. Palpation of the abdominal and peripheral pulses should be part of the clinical examination. In view of the high rate of rupture of common iliac artery aneurysms, there should be a high index of suspicion in patients with established cardiovascular disease who present with acute symptoms such as abdominal and hip pain. Earlier detection can facilitate surgical repair and reduce mortality.

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References