CASE REPORT

Aneurysm of the common iliac artery presenting as a lumbosacral plexopathy

We describe a case of lumbosacral plexopathy caused by an isolated aneurysm of the common iliac artery. The patient presented with worsening low back pain, progressive numbness and weakness of the right leg in the L2-L4 distribution. This had previously been diagnosed as sciatica. A CT scan showed an aneurysm of the right common iliac artery which measured 8 cm in diameter. Despite being listed for emergency endovascular stenting, the aneurysm ruptured and the patient died.

It is important to distinguish a lumbosacral plexopathy from sciatica and to bear in mind its treatable causes which include aneurysms of the common and internal iliac arteries.

Isolated aneurysms of the common iliac artery are rare. Most present with symptoms related to the compression of adjacent structures. Early diagnosis and elective treatment is essential, because the emergency management of a ruptured aneurysm of the iliac artery carries a peri-operative mortality of more than 50%.

Case report

A 71-year-old man presented to the Emergency Department with a 48-hour history of worsening low back pain with aching, numbness and weakness in his right leg. Three months previously, he had been diagnosed by his General Practitioner as having right-sided sciatica. He had been walking with one stick but had difficulty standing. There was no history of sphincter disturbance or vascular claudication. He had ischaemic heart disease and was on a course of chemotherapy for chronic lymphocytic leukaemia.

On examination he was alert, orientated and haemodynamically stable. The abdomen was soft and non-tender with no palpable masses. There was tenderness over the right sacroiliac joint. Flexion of the right hip and dorsiflexion of the right foot were weak (Medical Research Council grade 3) and he had diminished sensory and anal tone in the right lower limb. Neurological examination of the left leg was normal. Perineal sensation and anal tone were both normal. His feet were warm and the peripheral pulses were palpable in both legs. Laboratory tests revealed a low level of haemoglobin (11.4 g/dl), a normal platelet count (305 x 10^9/l), and a raised white cell count (19.9 x 10^9/l) and C-reactive protein (131.8 mg/l). Renal and liver function tests were normal.

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An urgent contrast-enhanced CT scan of the abdomen and pelvis showed a large aneurysm of the right common iliac artery, 8 cm in diameter, eroding the bodies of the L4 and L5 vertebrae (Fig. 1). There was also a pseudoaneurysm arising from the main aneurysm and an associated haematoma in the right psoas and iliacus muscles. The haematoma had caused anterior displacement of the right kidney. There was some dilatation of the small bowel but with no obvious obstructing lesion. The patient was listed for emergency endovascular stenting of the aneurysm the following day, but unfortunately he died overnight when the aneurysm ruptured.

Discussion

In retrospect, the patient’s history suggests that the progressively worsening symptoms, labelled as sciatica, were due to compression of the lumbosacral plexus by the expanding aneurysm of the common iliac artery. The sudden deterioration in his neurological symptoms was probably precipitated by a retroperitoneal bleed. This heralded the subsequent rupture.

Lumbosacral plexopathy has been described in one case of an aneurysm of the common iliac artery and in a number of patients with aneurysms of the internal iliac artery. The former was in a 66-year-old man who was a smoker and type 2 diabetic. Over a number of months he developed a worsening burning pain in his left buttock radiating to his left ankle. It was not associated with exercise. On
Isolated aneurysms of the common iliac artery are rare, with an estimated prevalence of 0.008% to 0.03% in the general population. The incidence increases with age, and there is a male preponderance. The usual course is for aneurysms to increase progressively in size and to eventually rupture. During the growth phase they often become symptomatic as they compress or erode local structures. Alternatively, they present as a coincidental finding during imaging, or when they finally rupture. The rate of rupture of isolated aneurysms of the iliac artery increases with their size. Richardson and Greenfield reported a 31% rate of rupture in aneurysms with a mean diameter of 5.6 cm. Inflammation is an important pathophysiological feature, so inflammatory markers, such as the C-reactive protein, are usually elevated.

Isolated aneurysms of more than 3 cm in diameter require surgical intervention. Elective endoluminal grafting with exclusion of the aneurysmal sac is the procedure of choice: 90% survive the peri-operative period. The emergency treatment of an aneurysm carries a peri-operative mortality of 33% to 50% and a ruptured iliac aneurysm, a peri-operative mortality of over 50%. The alternative to endoluminal grafting is to use a percutaneous technique such as coil occlusion or stent grafting. These techniques are useful when treating patients who are of high surgical risk.

Lumbosacral plexopathy is defined as the symptoms and signs associated with damage to the plexus of nerves formed by the ventral divisions of the lumbar, sacral and coccygeal nerve roots. The pathophysiology of lumbosacral plexopathy varies according to its cause. The most common cause of intrinsic nerve damage is diabetes mellitus, while the most common extrinsic cause is local compression or invasion of the nerve roots by an abdominal or pelvic neoplasm. Rarer causes include radiation therapy, an abdominal aortic aneurysm and renal transplantation.

The clinical presentation is variable and depends on the aetiology of the plexopathy. Patients usually present with localised pain in the lower back, buttock, hip, or thigh. The pain is unilateral and described as an ache or pressure. It can take a number of months before specific neurological symptoms are apparent. Progressive unilateral sensory loss and motor weakness occur in most patients, but incontinence is rare. The distribution of the motor weakness and sensory impairment offers clues to the specific nerve or nerve root involved.

Renal function may be abnormal if there is ureteric obstruction. Plain radiographs may reveal bone erosion (Fig. 2). Electromyography and nerve conduction studies usually demonstrate changes such as a decrease in amplitude of the evoked motor responses and borderline nerve conduction velocities. Electromyographic findings are often more severe than the clinical picture suggests. CT scanning of the abdomen and pelvis is valuable as it can identify tumours, lymph node enlarge-
ment and bony involvement. MRI gives a more detailed assessment of the soft tissues.

This case typified the progressive nature of most lumbosacral plexopathies. A careful history and examination suggested a mainly lumbar plexopathy rather than involvement of the sacral nerve root to which the patient’s symptoms had been attributed. As this case demonstrates, early diagnosis of symptomatic aneurysms and referral to a vascular surgeon is crucial.

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References