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CASE REPORT

An Aneurysm at the Back of a Thigh: a Rare Presentation of a Congenitally Persistent Sciatic Artery

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Introduction

Persistent sciatic artery (PSA) is a very rare congenital vascular abnormality characterised by a large-calibre artery which is a continuation of the internal iliac artery. PSA may be asymptomatic, but most frequently presents with symptoms due to aneurysm formation.[1] This is the first reported case of an aneurysm at the distal end of a PSA.

Case Report

A 66-year-old gentleman presented with a four-week history of a painful swelling at the back of his left thigh. There was no history of trauma. Examination demonstrated a 3-cm expansile, pulsatile swelling on the posterior aspect of his lower left thigh with normal femoral, popliteal and distal pulses. Angiography demonstrated normal right iliac, femoral, and popliteal arteries with a large tortuous left PSA (Fig. 1) originating from the internal iliac artery and running down the posterior aspect of the thigh, to form the popliteal artery. The left superficial femoral artery was hypoplastic, but distal vessels were normal. A fusiform aneurysm was demonstrated at the distal end of the sciatic artery (Fig. 2) and measured 4 cm on duplex scanning.

Exploration under general anaesthetic revealed a sciatic-artery aneurysm with the sciatic nerve laterally.

Fig. 1. Angiogram showing tortuous left persistent sciatic artery (PSA) which continues into the popliteal artery with a hypoplastic left superficial femoral artery (SFA) and normal anatomy on right side.

The aneurysm sac was opened, an 8-mm woven Dacron graft inserted and the sac closed over the graft. Histology demonstrated atherosclerosis. Postoperatively the patient made an uncomplicated recovery and remains asymptomatic on aspirin, 2 years after surgery.

Discussion

The sciatic artery represents a persistent embryological axial artery present in 0.05% of the population.[2] It is a continuation of the internal iliac artery running through the greater sciatic foramen along the dorsal

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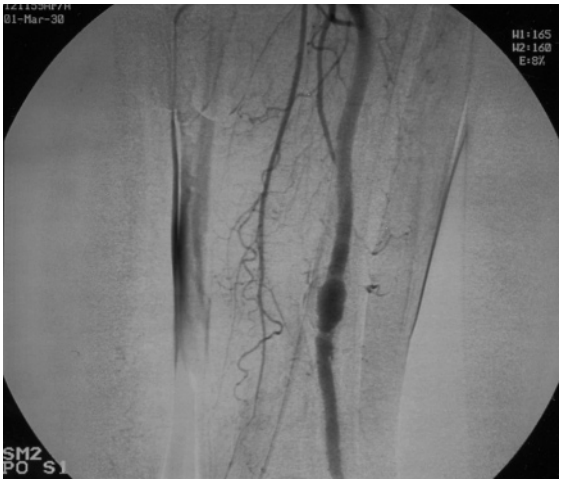

Fig. 2. Angiogram showing left PSA aneurysm and hypoplastic superficial femoral artery (SFA).

aspect of the lower limb.[3] Mean age at presentation is 54 years, with equal sex incidence, and 12% are bilateral.[4] The sciatic artery supplies the lower limb during early development, but involutes following development of the femoral from the external iliac artery.[3] Complete PSA (63% of cases) continues directly into the popliteal artery, usually with hypoplasia of the superficial femoral artery[4] whereas with incomplete PSA connection with the popliteal artery is interrupted or by small colaterals.[4]

Aneurysm formation occurs in 15% to 44% of cases of PSA secondary to hypertension, infection, atherosclerosis and chronic trauma.[2,4] Most aneurysms typically present as painful, pulsatile buttock masses, with sciatic pain caused by sciatic-nerve irritation or lower limb ischaemia secondary to thrombosis or distal embolisation.[2,4,5] The diagnosis can be confirmed by angiography which demonstrates the iliac, femoral and distal vessels.[2,5]

Treatment depends upon the anatomy and presenting complications[4] but it is important to distinguish sciatic from gluteal artery aneurysms, as the latter can be embolised or ligated proximally without ischaemic complications.[1] This is also the case when PSA aneurysm is associated with a patent superficial femoral artery. When the femoral artery is hypoplastic, as in our case, the favoured surgical approach is femoropopliteal bypass with proximal and distal ligation or embolisation of the aneurysm.[2,5] However, the hypoplastic femoral artery is sometimes inadequate for bypass inflow. Our patient had a patent sciatic artery, without ischaemic symptoms, so interposition grafting was undertaken.[1] There have been no reports of multiple PSA aneurysms, so interposition grafting appears to be acceptable for revascularisation. The PSA, however, remains subject to trauma and must be monitored by regular physical examination and annual duplex imaging.

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