

Giant popliteal aneurysm presenting with foot drop

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Popliteal aneurysms are the most common peripheral arterial aneurysm and occur most commonly among older men with established cardiovascular disease. Popliteal aneurysms are asymptomatic or otherwise present with intermittent claudication, pressure symptoms in the popliteal fossa, distal embolization, and, rarely, rupture. We present a patient with a remarkably large popliteal aneurysm of 10 cm presenting as a popliteal swelling with foot drop and no signs of limb ischemia. According to our literature search, it is the largest reported popliteal aneurysm, and its corresponding symptoms are unusual. The diagnostic workup and treatment are presented. (*J Vasc Surg* 2006;44:882-3.)

Popliteal aneurysms (PAs) are the most common peripheral aneurysms and occur almost exclusively in men. They are seen more commonly in older men with established cardiovascular disease and are associated with contralateral PA in 64.1% and abdominal aneurysm in 41%.¹ We present a case of the largest reported PA presenting with foot drop and no clinical features of limb ischemia.

CASE REPORT

A 58-year-old man presented with a 3-week history of a pulsating painful swelling in the right popliteal fossa. It had gradually increased in size with associated numbness in the right lower limb and right foot drop. There was no history of trauma, claudication, or surgery for any previous aneurysms. On examination, he had a large pulsatile swelling in the popliteal fossa; all peripheral pulses were palpable in the right lower limb, and pulses were absent in his left lower extremity. There were no signs of ischemia in his right lower limb. Paresthesia was present in the L4 and L5 dermatomes of the right leg. He was unable to flex his right knee because of pain and mechanical obstruction and was also unable to dorsiflex his right foot. A computed tomographic angiogram revealed an unruptured large PA of the right popliteal artery measuring 10.1 × 8 cm with a mural thrombus compressing the popliteal vein and a left PA measuring 3.5 cm (Figs 1 and 2).

Emergency surgery of his right PA was performed after the long saphenous vein was harvested, first starting from the groin. A posterior approach was used, and a large adherent aneurysm (Fig 3) was exposed by using a lazy S incision, with the proximal part of the incision starting medially. The proximal arterial control was obtained above the neck of the aneurysm on the popliteal artery below the adductor hiatus, and distal control was obtained on the popliteal artery above the trifurcation. Dissection was extremely difficult, especially to obtain distal control. Heparin 5000 U was given intravenously before clamps were applied, and the aneurysm sac was

opened and decompressed to relieve the compressive symptoms. There was very little back-bleeding from the outflow ostium, which improved considerably after large amounts of thrombus were retrieved with a Fogarty catheter. An end-to-end anastomosis was performed by using the proximal part of the reversed saphenous vein as an inlay graft. The foot was well perfused, with palpable foot pulses, and compartment pressures were normal after the procedure. The postoperative period was uneventful, and the patient was discharged a fortnight later with a splint for the persistence of foot drop. At the most recent follow-up, dorsiflexion of the right foot was continuing to improve, although recovery was not complete. His right foot remained well perfused, and pulses were still palpable; he was able to walk with the foot splint.

DISCUSSION

Analysis of recent studies has suggested that 25% to 80% of PAs are asymptomatic at the time of operation.² Symptoms include intermittent claudication, rest pain, thrombosis, distal embolization, and, rarely, rupture and pressure symptoms in cases of large aneurysms compressing

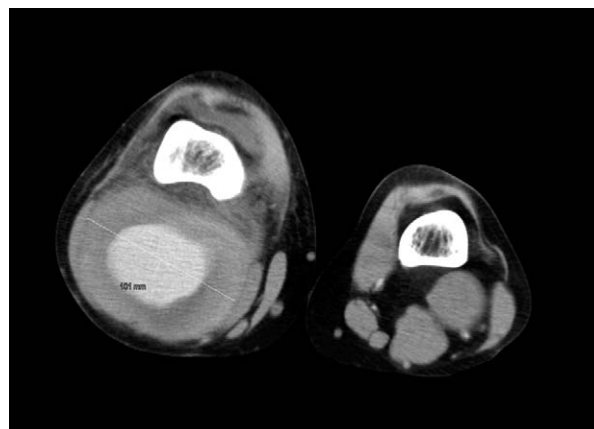


Fig 1. Computed tomography scan obtained during the initial evaluation, showing a large 10.1 × 8-cm right popliteal aneurysm with mural thrombus and a contralateral left popliteal aneurysm measuring 3.5 cm.

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Fig 2. Three-dimensional reconstruction computed tomographic angiogram scan of the lower limbs, showing a large right popliteal aneurysm.

the medial popliteal, distal sciatic, and common peroneal nerves.³ The common peroneal nerve was compressed in our case, presenting as foot drop, which is seen in less than 5% of cases. Popliteal vein compression presents as or mimics deep vein thrombosis,³ and the rare case of vein rupture has also been reported.⁴ Acute limb ischemia is present in approximately one third of patients whose PA requires repair.²

The decision to operate electively on an asymptomatic PA is quite variable. A diameter greater than 2 cm, thrombus within a PA, and poor distal runoff have been suggested as ways of identifying patients at high risk of developing complications without surgery. Studies by Galland et al² combining a size of aneurysms more than 3 cm with greater than 45° of distortion produced positive and negative predictive values for thrombosis of 83% and 94%, respectively. The degree of distortion is the most proximal angle

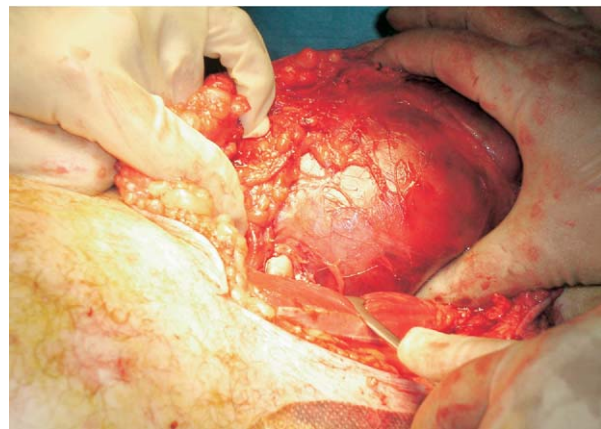


Fig 3. A perioperative view into the adherent large right popliteal aneurysm.

of distortion of the aneurysm measured with the angiogram in the anteroposterior plane. They also followed up 17 PAs 2 to 3 cm in diameter for 26 months, and none had thrombosed. Aneurysms producing compression within the popliteal fossa had a mean diameter of 3.45 cm.²

In our case, we were able to obtain adequate access via the posterior approach, although various approaches (such as the medial, lateral, and posterior) have all been described. A new approach integrating the medial and posterior approaches in the modified Sims position has been reported by Moro et al.⁵ Although exclusion, ligation, and bypass have been performed, in our case we decompressed the aneurysm and performed an end-to-end inlay graft. According to our literature search, this case is unusual because it is the largest reported PA presenting as foot drop without any signs of ischemic limb.

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