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Sciatic Artery Aneurysm

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A 59-year-old female with a history of diabetes mellitus presented to the emergency department complaining of three weeks of an enlarging pulsating mass to her left buttock. The patient denied any associated trauma, leg pain, back pain or previous episodes. Physical exam was remarkable for a bounding non-tender pulsatile mass over the lateral left buttock. Skin examination over this area was unremarkable. There were no sensory and motor deficits, and pulses were 2+ distally. A bedside ultrasound of the affected area revealed a pulsatile aneurismal vessel measuring 6cm. Computed tomography (CT) abdomen/pelvis with intravenous contrast confirmed a 7.8 x 4.1cm aneurysm arising from the left internal iliac artery suggestive of a persistent sciatic artery. A persistent right sciatic artery was also identified on CT of the lower extremities, although there was no evidence of aneurysm noted in that extremity (Figure 1 and 2). The vascular surgical service was consulted, and the patient underwent left sciatic aneurysm repair with a polytetrafluoroethylene interposition graft. The patient was discharged from the hospital on post-operative day three without any complications.

Persistent sciatic artery is a rare congenital vascular anomaly estimated to occur in 0.03-0.06% of the population. During embryogenesis, the sciatic artery runs along the sciatic nerve and comprises the major blood supply to the respective lower extremities. As the femoral artery is formed, the bilateral sciatic arteries start to regress. This process continues until the femoral artery completely takes over as the major lower limb blood supply, leaving only remnants of the sciatic artery.^{1,2} A persistent sciatic artery may occur when there is either a failure of involution of the sciatic artery or failure of the proper development of the femoral artery during normal development. Most cases of persistent sciatic artery are clinically silent and detected only after a vascular complication. Aneurysms develop in approximately a quarter of cases, likely due to the vessel's anatomic predisposition to minor trauma with sitting. Other complications include thrombosis, embolism and rupture of the artery resulting in ischemia and pain of the lower extremity.²

Ultrasonography and CT are the preferred diagnostic modalities for identifying a suspected sciatic artery aneurysm.



Figure 1. Computed tomography angiogram of lower extremities highlighting extent of left sciatic artery aneurysm and illustrating distal anatomy of the artery.

CT angiography is useful to delineate the proximal and distal anatomy of the vessel and assist in preoperative planning. A vascular surgeon should be consulted in all cases. Treatment options include surgical exclusion or excision of the aneurysm, endovascular stenting, and endovascular coiling.³

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Figure 2. Computed tomography of abdomen/pelvis showing unilateral left sciatic artery aneurysm at its greatest diameters of 7.8 x 4.1cm.