DOI: https://doi.org/10.4038/jmj.v38i1.261

Case Report

Persistent Sciatic Artery Occlusion Presenting as Acute on Chronic Limb Ischemia in a Diabetic Elderly Male: A Rare Vascular Anomaly

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Abstract

Persistent sciatic artery (PSA) is a rare congenital vascular anomaly that can lead to limb-threatening ischemia when thrombosed. It is often misdiagnosed due to its rarity and overlapping symptoms with peripheral arterial disease (PAD). A 72-year-old male with a history of diabetes mellitus, hypertension, and ischemic heart disease presented with a 5-day history of progressive left lower limb weakness and calf pain exacerbated by walking over 200 meters. Examination revealed warmth of the limb, palpable left popliteal pulse, but absent dorsalis pedis and posterior tibial pulses. Duplex ultrasound revealed peripheral vascular disease with non-detectable flow in the distal posterior tibial artery (PTA) and dorsalis paedis artery (DPA). Enoxaparin 60 mg twice a day and atorvastatin 40 mg were initiated, assuming acute on chronic limb ischemia. A subsequent CT angiogram revealed an occluded persistent sciatic artery with subacute thrombosis. This case highlights the importance of considering rare vascular anomalies like PSA in atypical presentations of limb ischemia. Early imaging with CT angiography is essential for diagnosis. Management may require anticoagulation, surgical intervention, or endovascular therapy depending on severity.

Introduction:

Persistent sciatic artery (PSA) is a rare congenital vascular anomaly resulting from the failure of normal embryological regression of the sciatic artery(1). During early fetal development, the sciatic artery serves as the primary axial artery supplying the lower limb, but it typically regresses as the femoral artery develops. Persistence of this vessel can result in a dominant or supplementary arterial supply to the lower extremity(2). The reported incidence of PSA is between 0.025% and 0.06% in the general population, and it is frequently underdiagnosed due to its rarity and asymptomatic nature(3).

Clinically, PSA can remain silent or present with complications including aneurysm formation, thrombosis, embolization, or limb ischemia. Most symptomatic cases present later in life, often in association with other comorbidities such as atherosclerosis or diabetes(4). PSA can be misdiagnosed as typical peripheral arterial disease (PAD), especially when distal pulses are absent but proximal pulses are preserved, such as a palpable popliteal artery despite diminished femoral flow(5).

Early recognition of PSA is essential due to its risk for significant vascular compromise, and diagnosis often requires high-resolution imaging such as CT angiography or MR angiography(6). Management strategies vary depending on symptom severity and can range from anticoagulation and conservative monitoring to surgical revascularization or endovascular repair, especially in cases complicated by thrombosis(7).

In this report, we describe a rare case of subacute thrombotic occlusion of a PSA in an elderly male with multiple cardiovascular risk factors, presenting as acute on chronic limb ischemia. The case underscores the importance of considering vascular anomalies in the differential diagnosis of lower limb ischemia and highlights the role of advanced imaging in prompt diagnosis and tailored management.

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Case Presentation:

A 72-year-old male with a past medical history of type 2 diabetes mellitus, hypertension, and ischemic heart disease presented with a five-day history of progressive left lower limb weakness accompanied by calf pain that worsened upon walking distances greater than 200 meters. He reported no history of similar symptoms previously. On examination, the left lower limb was warm, with absent popliteal , PTA and DPA pulses. There was localized calf tenderness, without thigh tenderness or signs of skin discoloration or ulceration. Arterial duplex ultrasound revealed peripheral vascular disease with undetectable distal PTA and DPA flow. Based on these findings, he was started on enoxaparin 60 mg subcutaneously twice daily and his atorvastatin dose was increased to 40 mg/day. A working diagnosis of acute on chronic limb ischemia was made. To further investigate the etiology, a CT angiogram was performed, which showed PSA with subacute thrombotic occlusion. (Figure 1) The superficial femoral artery was noted to be hypoplastic, and the PSA was serving as the dominant arterial supply to the lower limb. Given the absence of critical limb ischemia and the stable condition, the patient was managed conservatively with close vascular follow-up and consideration for future intervention depending on symptom progression.

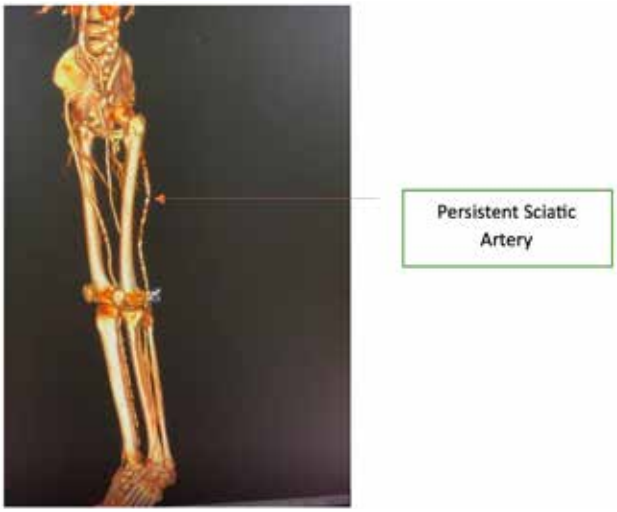

Figure 1: CT angiogram was performed, which showed PSA with subacute thrombotic occlusion

Discussion:

PSA is a rare congenital vascular anomaly resulting from the failure of the embryonic sciatic artery to regress(1). The incidence of PSA is approximately 0.025%–0.06%, making it an important but often overlooked differential in cases of peripheral vascular disease with atypical presentations(3). In a normal embryologic process, the external iliac artery assumes the main blood supply to the lower limb as the sciatic artery regresses. In PSA, this regression fails, leading to a persistent vessel running along the sciatic nerve(2).

Patients with PSA may remain asymptomatic or may present with complications such as aneurysm formation, thrombosis, embolism, or even limb ischemia, as in the present case(8). Our patient had typical risk factors for peripheral arterial disease—diabetes mellitus, hypertension, and ischemic heart disease. The absence of thigh tenderness and localized calf pain supported distal ischemia. Duplex ultrasonography initially suggested peripheral arterial disease; however, it was CT angiography that clearly demonstrated the occluded PSA with subacute thrombosis.

Several case reports and reviews have emphasized the diagnostic utility of CT angiography or MR angiography for PSA. The sciatic artery can present in two forms: complete (where the PSA persists as the dominant supply to the lower limb) or incomplete (coexisting with a dominant superficial femoral artery) (7). In our patient, the complete form was suggested by the absence of flow in distal branches and the dominance of PSA in perfusion.

Comparatively, a study by Yamamoto et al. (2014) described similar findings in elderly patients with thrombosed PSA, emphasizing the importance of prompt recognition and the role of anticoagulation or revascularization in limb salvage(9). Another review by Gabelmann et al. (2001) highlighted endovascular stenting and embolization as effective treatment strategies for PSA-associated aneurysms and thrombosis(10).

In our case, the patient was started on therapeutic enoxaparin and high-dose atorvastatin, with a plan for close vascular follow-up and possible intervention based on symptom progression. Given the subacute presentation and limited tissue compromise, conservative management was initially preferred.

Conclusion:

This case highlights the need to consider persistent sciatic artery in the differential diagnosis of acute on chronic limb ischemia, especially when the clinical presentation does not align with typical peripheral arterial disease. Early recognition through CT angiography is essential to avoid misdiagnosis and ensure timely management, which may range from anticoagulation to surgical or endovascular intervention. PSA remains a rare but clinically significant cause of limb ischemia that requires heightened awareness among clinicians and radiologists alike.

References

1. Panda AK, Rai S, Mukhopadhyay S, Nafe ZM. A Rare Embryonic Arterial Anomaly: Thrombosis of Persistent Sciatic Artery. 2024;
2. Wojcik MK. Persistent Sciatic Artery: Embryological Development and Clinical Considerations in Vascular Surgery. Int J Anat Var (Internet). 2025 Jan 31 (cited 2026 Jan 26);18(1). Available from: https://www.pulsus.com/scholarly-articles/persistent-sciatic-artery-embryological-development-and-clinical-considerations-in-vascular-surgery-13129.html
3. Alsaadoun AR, Aldhafeeri WF, Almomen EA, Aldhafeeri OM. Bilateral persistent sciatic arteries complicated by a unilateral aneurysm: A case report. Radiol Case Rep (Internet). 2020 Aug 1 (cited 2026 Jan 26);15(8):1354. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC7327428/
4. Rasmussen ATN, Duvnjak S. Persistent Sciatic Artery Aneurysm With Distal Embolization Treated Endovascular - A Case Report. Vasc Endovascular Surg (Internet). 2025 Apr 1 (cited 2026 Jan 26);59(3):298–302. Available from: https://pubmed.ncbi.nlm.nih.gov/39293066/
5. Cardona Ortegón JD, Yepes MM, Rivero Rapalino OM, Torres Cortes DF, Montaño Rozo GA, Muñoz Quiroga LM. Persistent Sciatic Artery with Peripheral Arterial Disease: A Case Report. Curr Med Imaging (Internet). 2023 Jan 3 (cited 2026 Jan 26);19(7). Available from: https://pubmed.ncbi.nlm.nih.gov/36593697/
6. Assefa RA, Silassie Zeleke HT, Aboye AG. Triple case report of persistent sciatic artery in Ethiopia: a rare vascular anomaly. J Surg Case Rep (Internet). 2024 Aug 1 (cited 2026 Jan 26);2024(8). Available from: https://dx.doi.org/10.1093/jscr/rjae474
7. Cacioppa LM, Rosati M, Macchini M, Rossini N, Boscarato P, Vento V, et al. Different Manifestations of Persistent Sciatic Artery and Possible Treatment Options: A Series of Four Cases. Diagnostics 2024, Vol 14, (Internet). 2024 Oct 25 (cited 2026 Jan 26);14(21). Available from: https://www.mdpi.com/2075-4418/14/21/2383
8. Koyama E, Tobita K, Sawada S, Kai M, Mityashita H, Saito S. Endovascular treatment of acute limb ischemia for persistent sciatic artery aneurysms: a report of 2 cases. CVIR Endovascular 2025 8:1 (Internet). 2025 Jun 18 (cited 2026 Jan 26);8(1):53-. Available from: https://link.springer.com/article/10.1186/s42155-025-00568-5
9. Hayashi Y, Mizuguchi K, Takayama K. Hybrid Revascularization for Critical Limb Ischemia Triggered by Multiple Organ Dysfunction Due to Acute Pneumonia; Urgent Catheter Intervention Followed by Low-Density-Lipoprotein Apheresis and Elective Peripheral Bypass Surgery. Ann Vasc Dis (Internet). 2014 (cited 2026 Jan 26);7(2):159. Available from: https://pmc.ncbi.nlm.nih.gov/articles/PMC4072867/
10. Gabelmann A, Krämer SC, Wisianowski C, Tomczak R, Pamler R, Görich J. Endovascular interventions on persistent sciatic arteries. J Endovasc Ther (Internet). 2001 Dec (cited 2026 Jan 26);8(6):622–8. Available from: https://pubmed.ncbi.nlm.nih.gov/11797980/