

Popliteal Artery Entrapment Syndrome: An Important Differential Diagnosis for Exertional Calf Pain in Athletes

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Abstract

Background: Popliteal Artery Entrapment Syndrome (PAES) is a rare vascular disorder that typically presents with exertional calf pain in young, physically active individuals. Given its clinical similarity to common musculoskeletal conditions such as chronic exertional compartment syndrome and lumbar radiculopathy, diagnosis is frequently delayed. This case report highlights the importance of considering PAES in the differential diagnosis of athletes presenting with exercise-induced calf pain.

Case Presentation: A 28-year-old recreational runner presented with a six-month history of exertional calf pain and intermittent paresthesia during running. Previous physiotherapy, osteopathic treatment, and investigations, including lumbar MRI, failed to identify the source of symptoms. Clinical examination at rest was unremarkable; however, dynamic assessment reproduced the patient's symptoms and revealed transient pallor and diminished distal pulses following exercise. Subsequent vascular investigations demonstrated an abnormal ankle-brachial pressure index (ABPI), duplex ultrasound findings consistent with popliteal artery compression, and confirmation of PAES by CT angiography and MRI. The patient underwent popliteal artery bypass surgery resulting in complete resolution of symptoms and returned to running six months later.

Conclusions: This case emphasizes the importance of maintaining a broad differential diagnosis in athletes

presenting with exertional calf pain, particularly when musculoskeletal findings fail to explain the clinical presentation. Dynamic clinical examination combined with appropriate vascular investigations can facilitate early diagnosis of PAES, reduce diagnostic delay, and prevent potentially serious vascular complications. The case also highlights the important role of physiotherapists in recognizing vascular conditions that mimic musculoskeletal disorders.

Keywords: Popliteal Artery Entrapment Syndrome, Exertional Calf Pain, Athletes, Differential Diagnosis, Vascular Pathology, Physiotherapy, Physical Therapy