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“Persistent Sciatic Artery”

Background:

A Persistent Sciatic Artery (PSA) has a reported incidence of 0.03-0.06% making it a rare entity. However, it carries a significantly high risk for aneurysmal degeneration in up to 40% of cases. Rupture, thrombosis and distal embolisation are known complications with risk of lower limb amputation.

Presentation:

A 66-year-old male presented with 9-month history of left posterior buttock and thigh pain. Cowie sign was negative as he had palpable femoral and popliteal pulses on the indexed limb. A pulsatile mass was present in the left buttock.

Imaging:

Arterial duplex identified left superficial femoral artery (SFA) that deviated from the femoral vein. The popliteal artery was noted patent distally, however, when tracked proximally demonstrated occlusion leading to a partially thrombosed fusiform aneurysm in the gluteal region. Computed tomography angiogram confirmed the diagnosis of a partially thrombosed persistent sciatic artery aneurysm measuring 4.5 cm with an incomplete SFA (Pillet-Gauffre classification 2a).

Management:

Endovascular approach was decided and occlusion of the PSA aneurysm sac achieved. Follow-up arterial duplex 8 weeks post-treatment confirmed occlusion of the PSA aneurysm.

Conclusion:

Arterial duplex scans can identify aberrant anatomy with sufficient information to make the initial diagnosis of this rare clinical entity.

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“Popliteal Artery Entrapment Syndrome – Using Ultrasound to Determine What is Normal vs Pathogenic”

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Introduction:

Popliteal Entrapment Syndrome (PAES) is a rare condition whereby musculoskeletal structures compress the popliteal artery (POPA) leading to vascular or neurogenic symptoms. This study investigates dynamic plantar and dorsal loading to develop a diagnostic ultrasound-based protocol.

Methods:

Healthy individuals, elite athletes, and symptomatic PAES patients were recruited with triplex ultrasound imaging of both legs being performed (n=112). Proximal and distal POPA's in dorsi- and plantar- flexion in erect and prone positions were imaged at rest and with loading.

Results:

Full compression most commonly occurred in the distal POPA whilst prone during plantar-flexion (70%) compared to the proximal vessel. When prone, control (n=22, 55%), athletes (n=28, 70%), and patients (n=23, 77%) had distal compression in plantar-flexion. When prone, control (n=1, 2.5%), athletes (n=2, 5%), and patients (n=6, 20%) had distal compression under dorsi-flexion. When erect, compression was only noted in the patient group under both dorsi-flexion (n=7, 17.5%) and plantar-flexion (n=8, 20%).

Conclusion:

Compression of the POPA seen by ultrasound should not be the sole diagnostic criteria for PAES. POPA compression exists in healthy, asymptomatic individuals, primarily in prone plantar-flexion. The use of triplex ultrasound imaging is ideal for functional PAES diagnosis due to its dynamic and real-time capabilities.

① Full comp D POPA Prone Plantar (70%)
cf prox to equal annts all 3 groups

② prone low res had dist comp dorsi flex

③ erect comp only noted in pt gp under both
pl. + dorsi flexion, to equal annts 7+8pts