GUNDERSEN/LUTHERAN ULTRASOUND DEPARTMENT POLICY AND PROCEDURE MANUAL

SUBJECT: Sonographic Evaluation of Popliteal Artery Entrapment Syndrome
SECTION: Vascular Ultrasound
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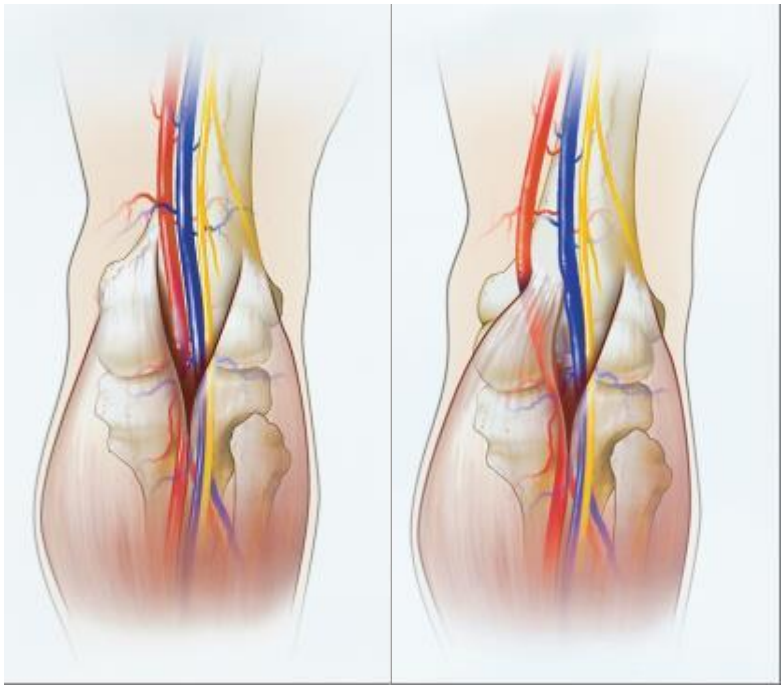
Purpose: Popliteal artery entrapment syndrome is caused by an abnormal anatomic relationship of the popliteal artery and the adjacent/surrounding muscles/tendons. This abnormal relationship may cause arterial compression with exercise. Popliteal artery entrapment syndrome often occurs in young athletes that do not have any cardiovascular risk factors. Common symptoms are coldness and tingling in the foot and intermittent claudication. If not diagnosed in a timely fashion popliteal artery entrapment can cause arterial damage and/or arterial thrombosis.

Exam Protocol: Bilateral popliteal arteries will be evaluated with the patient in the prone position –first with the leg/foot in a neutral position and then during forced active plantar flexion or dorsiflexion of the foot against resistance (e.g. a hand). Evaluate the popliteal arteries for patency, normal vs. abnormal waveforms, and thrombus, as thrombus is often seen in patients that are positive for popliteal artery entrapment.

Imaging Protocol: The following images will represent the sonogram for evaluation of popliteal artery entrapment syndrome. Additional images may be necessary for proper documentation.

The popliteal arteries will be evaluated bilaterally – RT side first, then LT

- Longitudinal image of the popliteal artery demonstrating the correct or incorrect anatomic location (please refer to the pictures below)
- Transverse image of the popliteal artery demonstrating the correct or incorrect anatomic location
- Longitudinal popliteal artery at rest with color and angle-corrected spectral Doppler and PSV measurement: proximal, mid, and distal
- Longitudinal image popliteal artery with forced dorsi/plantar flexion with color and angle-corrected spectral Doppler and PSV measurement: proximal, mid, and distal



Normal (Above)

Different variations of anomalous anatomy that can cause entrapment (above right and below)