Department of Radiology
UNIVERSITY OF WISCONSIN
SCHOOL OF MEDICINE AND PUBLIC HEALTH

Musculoskeletal Imaging and Intervention Section Procedures
Common Peroneal Tendon Sheath Corticosteroid Injection

PREAMBLE
• The common peroneal tendon sheath contains the peroneus longus and brevis tendons, originating in the lateral compartment of the calf, with the tendons travelling posterior to the lateral malleolus. The brevis inserts at the base of the 5th metatarsal, while the longus travels deep to the cuboid and inserts at the base of the 1st metatarsal and medial cuneiform.
• Common pathologies include tenosynovitis and tendinopathy, which may be secondary to overuse, trauma, adjacent arthropathy, or hindfoot malalignment.
• Common symptoms include lateral ankle pain or weakness with ankle eversion.

RISKS
• Bleeding
• Infection
• Pain

MODALITY
• Ultrasound

PRE-OPERATIVE WORKUP
• Informed consent

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MATERIALS

- Alcohol, ChloraPrep applicator, sterile drape
- 10 mL syringes for skin anesthetic and steroid/anesthetic mixture
- 1% lidocaine (for skin numbing); buffered with 8.4% sodium bicarbonate
- Ropivacaine HCL 0.5% (Naropin 5 mg/mL)
- 1 mL triamcinolone acetonide (Kenalog 40 mg/mL)
- 30G 0.5” and 22G 1.5” needles

TECHNIQUE

1. The patient is positioned lateral decubitus with the side of injection facing up (i.e., left lateral decubitus for a right peroneal injection). The ultrasound transducer is oriented in the short axis along the tendons at the site of tendinopathy.
2. Mark the skin anterior to the transducer.
3. Prep and drape as per usual and perform local anesthesia.
4. Guide a 22G 1.5” needle into the tendon sheath from an anterior approach. Confirm proper needle tip position with a small volume of 1% lidocaine.
5. Inject 2 mL of a solution containing 1 mL Kenalog and 1 mL 0.5% ropivacaine.

Fig 1. Typical peroneal tendon sheath anatomy. Posterior oblique 3D reformatted CT demonstrates the level of injection (dashed line) at the level of the lateral malleolus

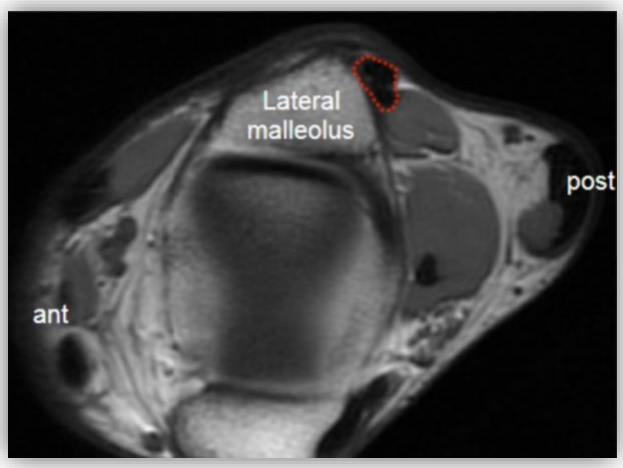

Fig 2. Axial proton-density weighted MR image demonstrates the peroneal tendon sheath (red dashed outline) in the retro-malleolar zone.

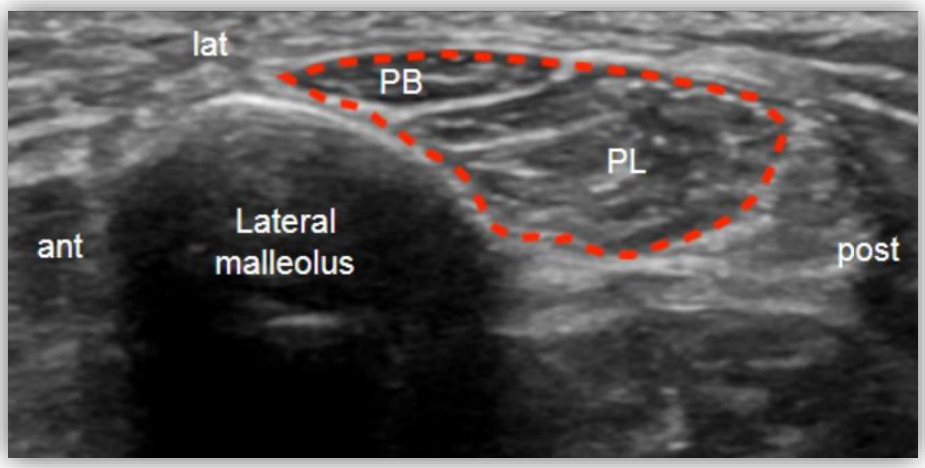

Fig 3. Short-axis US image demonstrating the same anatomy, with the peroneus longus tendon (PL) posterior to the peroneus brevis tendon (PB).

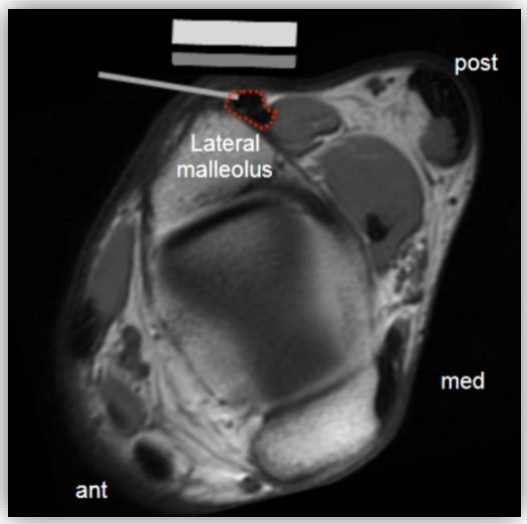

Fig 4. Peroneal tendon sheath injection technique. Axial weighted proton-density weighted MR image demonstrates transducer positioning and planned needle trajectory into the peroneal tendon sheath (red dashed outline).

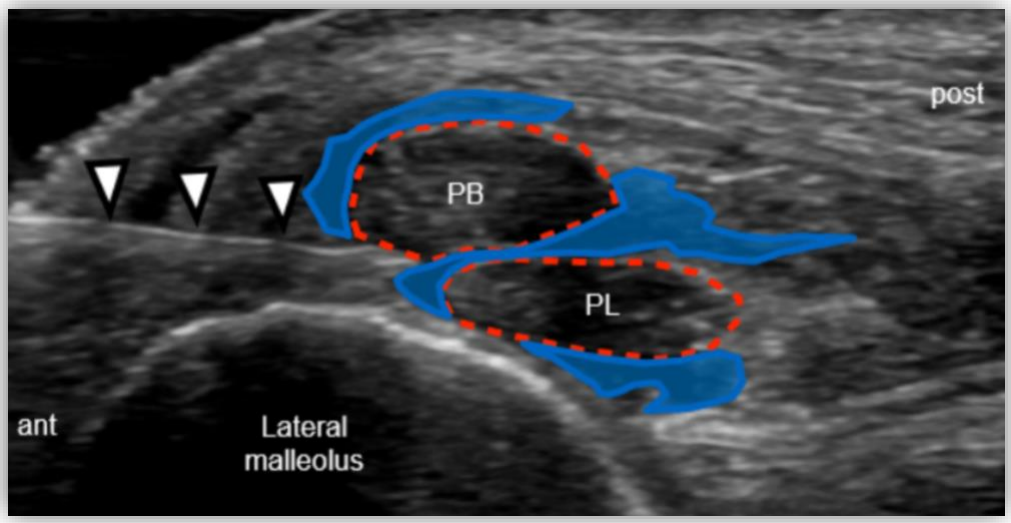

Fig 5. Corresponding short axis US image demonstrates the needle (arrowheads) entering the peroneal tendon sheath, with injectate (blue dashed outline) disseminating within the tendon sheath.

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Fig 6. Short axis US image of the left peroneal tendon sheath demonstrates a slight amount of intra-sheath fluid and heterogeneity of the tendon fibers. Doppler interrogation does not show hyperemia.

Fig 7. Short axis US image of the left peroneal tendon sheath demonstrates the needle tip in position (arrow) with a small amount of injectate present within the sheath.

Fig 8. Short axis US image of the left peroneal tendon sheath demonstrates increased volume of corticosteroid injectate within the sheath.

Fig 9. Short axis US image of the left peroneal tendon sheath following needle removal, demonstrating corticosteroid mixture within the sheath and surrounding the peroneal tendons.

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