



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

Musculoskeletal Imaging and Intervention Section Procedures
Retrocalcaneal Corticosteroid Bursa Injection

PREAMBLE

- Retrocalcaneal bursitis may be secondary to numerous causes, including: overuse, inflammatory or crystalline arthropathy, infection, or mechanical impingement (i.e., Haglund deformity). Achilles tendinopathy usually occurs concurrently with retrocalcaneal bursitis.
- Symptoms include swelling, erythema, and pain exacerbated with ankle dorsiflexion.
- A relative contraindication to corticosteroid injection is partial tearing of the Achilles tendon, as it may increase the risk of tear progression.

RISKS

- Bleeding
- Infection
- Pain

MODALITY

- Ultrasound

PRE-OPERATIVE WORKUP

- Informed consent

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MATERIALS

- Alcohol, ChloroPrep applicator, sterile drape
- 10 mL syringes for skin anesthetic and steroid/anesthetic mixture
- 1% lidocaine (for skin numbing); buffered with 8.4% sodium bicarbonate
- Additional 1% lidocaine for corticosteroid mixture
- 1 mL dexamethasone sodium phosphate (10 mg/mL)
- 30G 0.5" & 22G 1.5" needles (or a 27G 1.5" needle may be used for both local anesthesia and injection)

TECHNIQUE

1. The retrocalcaneal bursa is located deep to the Achilles tendon, but superficial to the posterior angle of the calcaneus.
2. The patient is positioned prone, with the foot lying off the end of the stretcher. A lateral approach is utilized, in which the short axis of the Achilles tendon is parallel with the ultrasound transducer.
3. The transducer is placed just superior to the calcaneus overlying the Achilles tendon. The bursa should be visualized directly deep to the tendon. Assess for traversing vessels with Doppler. Mark the skin at the lateral aspect of the transducer.
4. Prep and drape as per usual and perform local anesthesia.
5. Guide a 27G 1.5" needle within the bursa, just deep to the Achilles. Distend the bursa slightly with a small volume of 1% lidocaine.
6. Inject 2 mL of a solution containing 1 mL dexamethasone (10 mg/mL) and 1 mL 1% lidocaine.

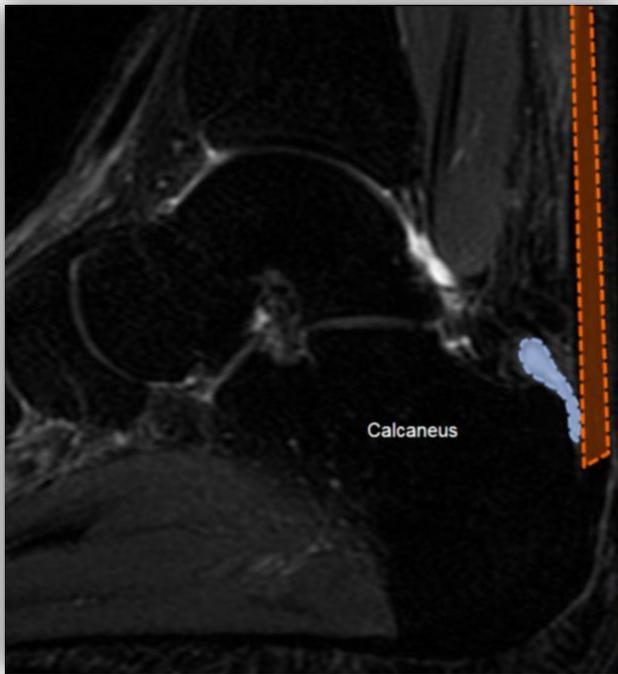


Fig 1. Retrocalcaneal bursa anatomy. Sagittal T2 weighted fat-suppressed MR image demonstrates distension of the bursa (blue dashed outline), which is located between the Achilles tendon (orange dashed outline) and calcaneus, in a patient with bursitis.

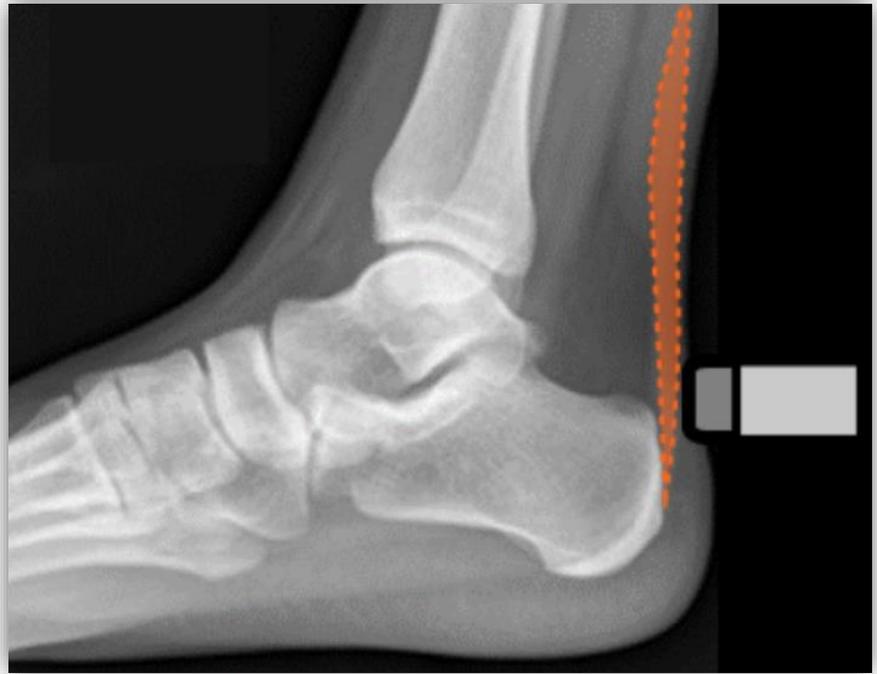


Fig 2. Lateral radiograph demonstrating the transversely oriented US transducer positioned just superior to the calcaneus, overlying the Achilles tendon (orange dashed outline).

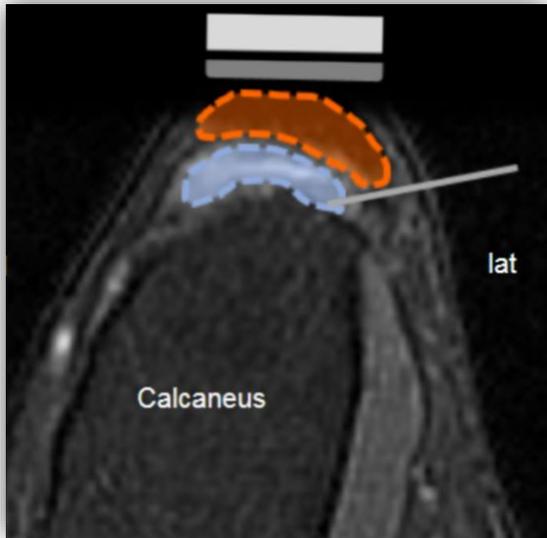


Fig 3. Axial T2-weighted fat-suppressed MR image at the level of the US transducer as seen in Figure 2 depicts the retrocalcaneal bursa (blue) deep to the Achilles tendon (orange). The planned needle trajectory into the bursa is shown from a lateral approach.

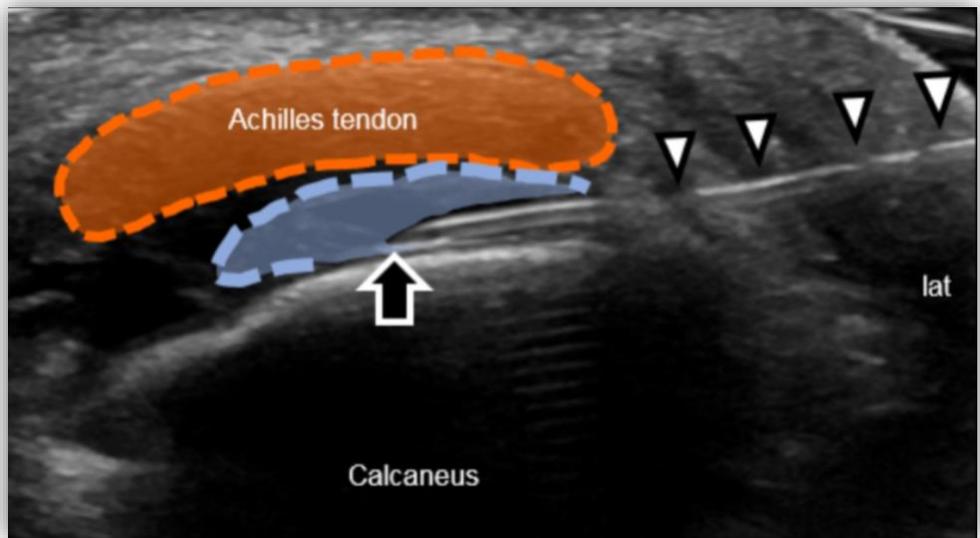


Fig 4. Corresponding transverse US image demonstrates the needle (arrowheads) and tip (black arrow) within the retrocalcaneal bursa.

Department of Radiology

Musculoskeletal Imaging and Intervention

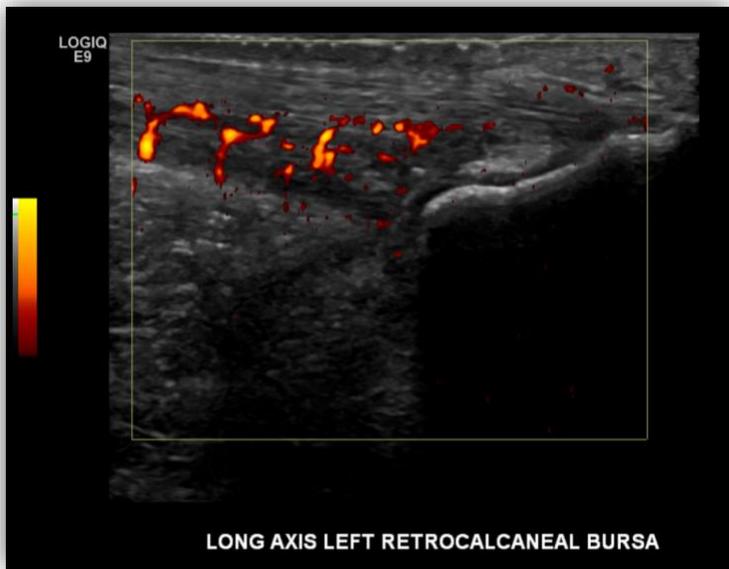


Fig 5. Long-axis US image of the left retrocalcaneal bursa demonstrating a small amount of fluid and hyperemia just deep to the Achilles tendon.

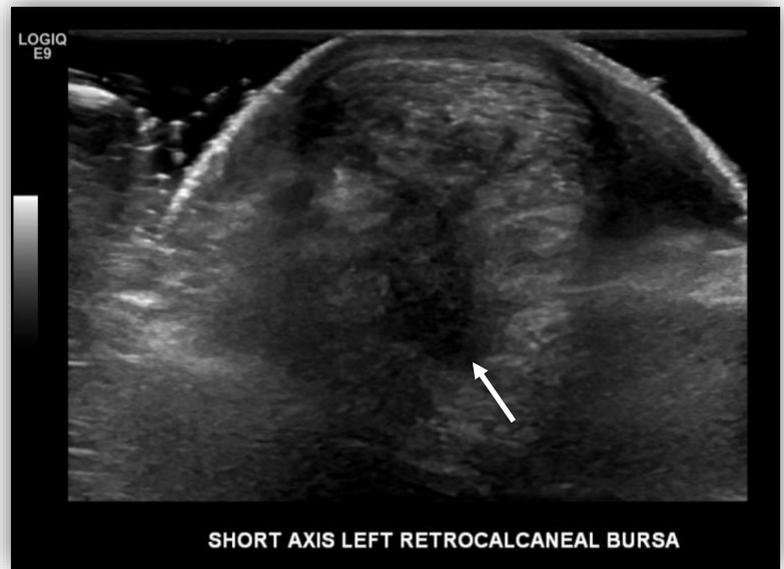


Fig 6. Short-axis US image at the same location in Figure 5 demonstrating the small amount of fluid within the retrocalcaneal bursa.



Fig 7. Short-axis US image demonstrates the needle tip just deep to the Achilles tendon within the retrocalcaneal bursa.



Fig 8. Short-axis US image demonstrates injection of the corticosteroid mixture within the retrocalcaneal bursa.



Fig 9. Long-axis US image of the right retrocalcaneal bursa demonstrates slight fluid and minimal hyperemia just deep to the Achilles tendon.



Fig 10. Short-axis US image of the right retrocalcaneal bursa demonstrates the needle tip just deep to the Achilles tendon.



Fig 11. Short-axis US image demonstrating air within the retrocalcaneal bursa following injection of corticosteroid mixture.

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