

Ultrasound-Guided Injection Treatment of Retrocalcaneal Bursitis

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ULTRASOUND EXAMINATION OF THE RETROCALCANEAL BURSA: ANATOMY OF THE RETROCALCANEAL BURSA AND BRIEF DESCRIPTION OF RETROCALCANEAL BURSTITIS

The retrocalcaneal bursa lies between the calcaneus anteriorly and the Achilles tendon posteriorly (Fig. 1).¹

The synovial lining on the superior aspect separates the retrocalcaneal bursa from the Achilles fat pad.² The anterior wall of the bursa is cartilaginous, and the posterior

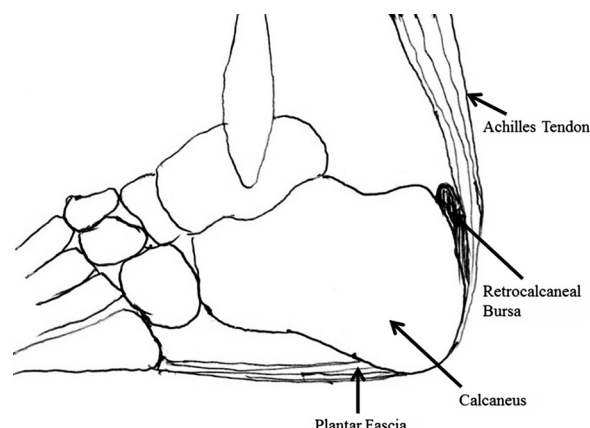


FIGURE 1 Sagittal illustration demonstrating the anatomy of the hindfoot. The retrocalcaneal bursitis is situated between the Achilles tendon and the calcaneus.

wall is tendinous. The content of the bursa is filled with highly viscous fluid rich in hyaluronate.³

Inflammation of the retrocalcaneal bursa can limit function and causes pain in the heel and ankle joint areas. Pain anterior to the Achilles tendon and superior to the calcaneus is the hallmark of retrocalcaneal bursitis.¹ Retrocalcaneal bursitis is also known as Haglund syndrome, Albert disease, calcaneus altus, pump bump, winter heel, and achillodynia.¹

Patients with retrocalcaneal bursitis often have a positive two-finger squeeze test. Pain is elicited when pressure is applied with the fingers placed medially and laterally anterior to the Achilles tendon insertion.⁴ Pain is often induced with dorsiflexion of the foot and on active resisted plantar flexion. Retrocalcaneal bursitis is common in runners because repetitive ankle dorsiflexion augments stress on the bursa. Patients with hindfoot varus and rigid plantarflexed first ray are also susceptible to retrocalcaneal bursitis.¹ When bilateral retrocalcaneal bursitis is present, the diagnosis of inflammatory arthritis is highly possible.⁴

Treatment options of retrocalcaneal bursitis include the application of ice on the pain area, modifying one's activities, taking nonsteroidal anti-inflammatory drugs, and wearing orthoses. Maneuvers that stretch the local Achilles tendon may help in the alleviation of pain symptoms.⁴ Steroid injection into the retrocalcaneal bursa is one of the treatment options. However, a recent study has indicated that steroid injection into the bursa may adversely affect the biomechanical properties of the Achilles tendon.⁵

Ultrasound has been demonstrated to be a valuable tool in examining the retrocalcaneal bursa and in documenting the diagnosis of retrocalcaneal bursitis.⁶ When examining the retrocalcaneal bursa using ultrasound, the patient assumes the prone position with the ankle and foot joint hanging loose from the edge of the bed (Figs. 2A and 3A). Under longitudinal sonographic view, the retrocalcaneal bursa appears

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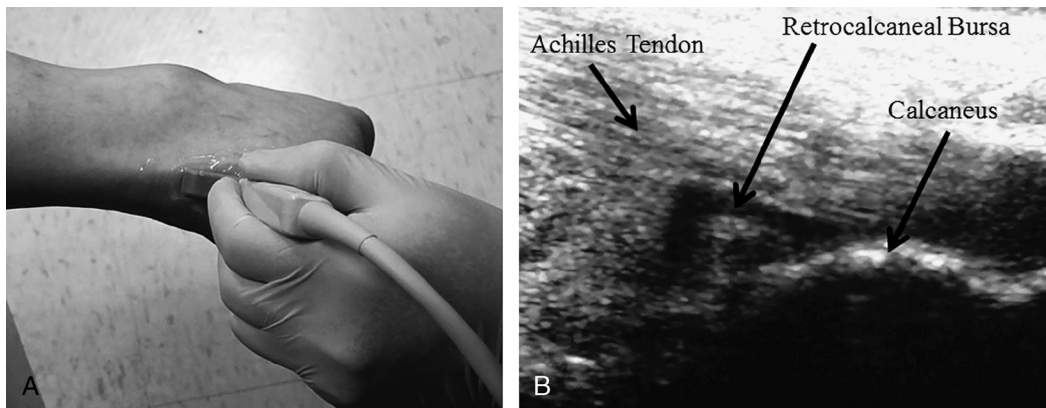


FIGURE 2 *Ultrasound examination of the retrocalcaneal bursa. A, Patient pursues the prone position. The ultrasound probe is placed longitudinally to the Achilles tendon and the retrocalcaneal bursa. B, Longitudinal sonographic view showing the hypoechoic triangular area of the retrocalcaneal bursa that is situated between the Achilles tendon and the calcaneus.*

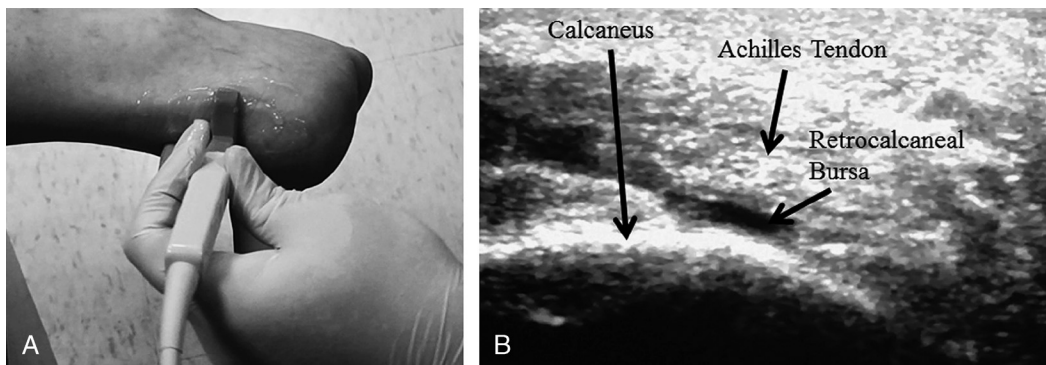


FIGURE 3 *Ultrasound examination of the retrocalcaneal bursa. A, The ultrasound probe is then rotated 90 degrees and placed transversely to the Achilles tendon and the retrocalcaneal bursa. B, Transverse sonographic view showing the hypoechoic area of the retrocalcaneal bursa that is situated between the Achilles tendon and the calcaneus.*

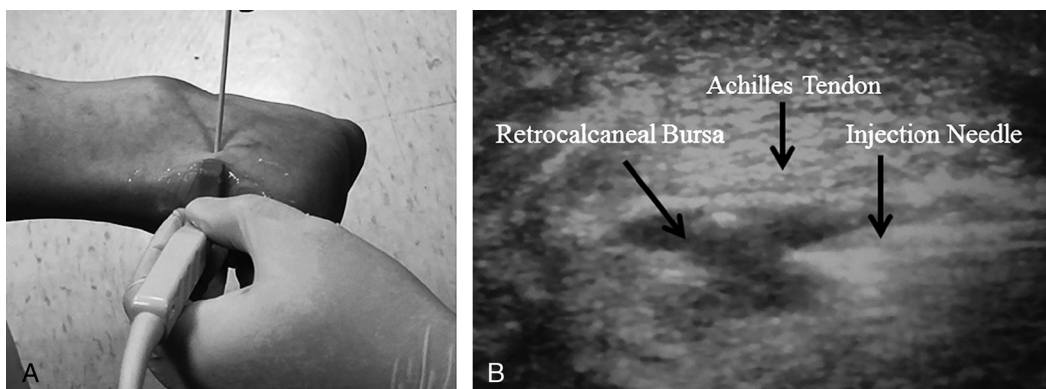


FIGURE 4 *Ultrasound-guided injection treatment of retrocalcaneal bursitis. A, With the ultrasound probe under transverse view, the needle is inserted from a lateral approach. B, Under transverse sonographic view, the needle is accurately guided into the retrocalcaneal bursa for subsequent injection treatment.*

as a triangular hypoechoic lesion situated between the Achilles tendon and the calcaneus (Fig. 2B).

ULTRASOUND-GUIDED INJECTION TREATMENT OF RETROCALCANEAL BURSITIS

It is recommended that ultrasound-guided injection treatment of retrocalcaneal bursitis be performed under the transverse sonographic view (Figs. 3B and 4B).⁶ Both the 21- and 23-gauge needles are feasible for the injection purpose. Under the transverse view, sonographic-assisted injection of betamethasone (as dipropionate) 5 mg/mL was performed into the retrocalcaneal bursa using a lateral approach (Fig. 4A). With ultrasound, the Achilles tendon and the retrocalcaneal bursa are easily distinguished, and the injection needle can be accurately guided into the retrocalcaneal bursa under direct real-time visualization without traumatizing the tendon and other nearby soft tissue structures.⁶

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