TenJet™

CLINICAL CASE REPORT

Treatment of Painful Right Achilles Calcific Tendinosis

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Patient History

A 60-year-old, male patient presented with right Achilles pain that had worsened over a period of nine months without any inciting event. The pain was at the posterior calcaneus, with or without weight bearing, but worse while standing and walking. He had undergone four weeks of physical therapy, had tried shoe inserts and a stretching program.

Examination

On physical examination, the patient had tenderness at the insertion of the right Achilles tendon; dorsiflexion was 12 degrees. Lateral radiographs showed three linear calcific densities through the mid-Achilles tendon, and numerous calcific densities at the distal Achilles. The patient noted pain at both the mid-Achilles and distal Achilles with ultrasonographic palpation. Ultrasound examination confirmed the calcifications both at the mid- and the distal Achilles combined with a hypoechoic tendon appearance.

Treatment with the TenJet™ device was ultimately recommended to treat the numerous calcifications using a minimally invasive approach.

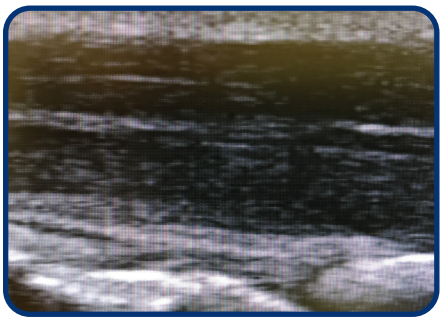

Figure 1.
Pre-procedure ultrasound

Ultrasound-guided Tenotomy

The diseased portions of the tendon were identified using ultrasound imaging and marked. After delivery of local anesthetic, three small stabbing incisions were made.

The TenJet needle was placed within the calcific bands, longitudinal and parallel to the tendon fibers. Using the TenJet device for approximately 2 minutes, the mixed hyper- and hypoechoic areas were removed, leaving an isoechoic and healthy appearance to the mid-tendon. The distal Achilles was then treated, and after approximately 3 minutes run time, it was estimated that 75% of the diseased tendon had been removed. Some calcific debris remained, but the procedure was stopped because additional incisions would have been necessary to provide access, which seemed excessive in a high stress area. The patient was instructed to use a walking boot until the 2-week follow up visit.

Post-procedure Follow-Up

The patient was non-compliant and stopped wearing the walking boot 7 days post-procedure since his pain had begun to improve. As such, he presented at the 2-week follow up visit up with a pain rating of 7/10, the same as prior to the procedure. One of the stab incision sites was noted to have slight drainage and slough. This was debrided in the office, and Steri-strips™ were re-applied. The patient was prescribed Keflex 500 mg QID for seven days, and was instructed to continue wearing the boot until the next follow--up visit. The patient was instructed to begin an eccentric strengthening program once he was pain-free at rest.

Follow-Up

The patient was seen again at 3 weeks post-procedure and doing quite well. He was pain-free at rest, and had minimal discomfort in the right heel when standing. The wound had healed, and the infection had resolved.

At the 4-week post-procedure visit, the patient was pain-free with static standing. He had a dull ache with a few degrees of stretch at the insertion of the Achilles. However, the pain had improved to 3/10 compared to 7/10 pre-procedure. He was off prescription pain medication, and had just begun the eccentric physical therapy program of two weekly sessions for four weeks. His walking boot had been discontinued.

At the 3-month post-procedure visit, the patient had completed physical therapy and returned to work. He reported no pain at rest, a dull ache with few hours of standing, and little pain while walking.

6-month post-procedure ultrasound demonstrated complete healing of the entire tendon without any residual calcifications.

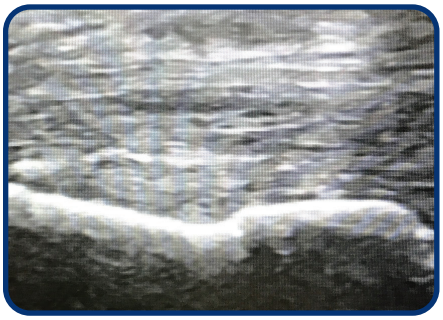

Figure 2.
6-Month follow-up ultrasound

The TenJet System

The TenJet Tenotomy System, developed by HydroCision™ Inc., North Billerica, MA is designed to provide the benefits associated with surgical debridement of a diseased tendon tissue using a minimally invasive, ultrasound guided approach.

The technology utilizes a two channel, 12-gauge needle specifically engineered to deliver a pressurized. high velocity stream of saline for resecting tissue. TenJet's patented design uses the principles of flow dynamics to create an in-line Venturi suction effect to pull in degenerative tendinopathic tissue into a 1.5 mm window while leaving the healthy tendon fibers unharmed providing physicians with a safe and effective option to treat patients with chronic tendinopathy.

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