Ultrasound-Guided Autologous Whole Blood Injection for a Refractory Partial-Thickness Achilles Tendon Tear

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INTRODUCTION

Achilles tendinopathy with partial-thickness tearing frequently fails eccentric loading, immobilization, and anti-inflammatory therapy, leaving surgery as the remaining viable option. Orthobiologic injectates offer an intermediate step, but randomized data for autologous whole blood are largely negative with published techniques,[1,5] and access to platelet-rich plasma[2–4] and extracorporeal shockwave therapy is often limited or cost-prohibitive. Here we describe a patient effectively treated with ultrasound-guided autologous whole blood injection after five years of failed conservative management.

CASE

A 44-year-old female presented with five years of waxing-and-waning left Achilles pain, aching with intermittent sharp exacerbations, limiting weightlifting, hiking, and cycling.

She had failed nonsteroidal anti-inflammatory drugs, repeated four-to-eight-week periods of boot immobilization, and a home stretching program, with recurrence within weeks of resuming activity, and had undergone surgical consultation. She had no prior injection therapy and no red-flag symptoms.

Point-of-care ultrasound demonstrated a partial-thickness tear with surrounding hypertrophic change (Fig. 1), and MRI confirmed partial-thickness tearing involving the middle and distal thirds of the tendon. Baseline pain was a constant 2/10, with functional limitation disproportionate to the pain score.

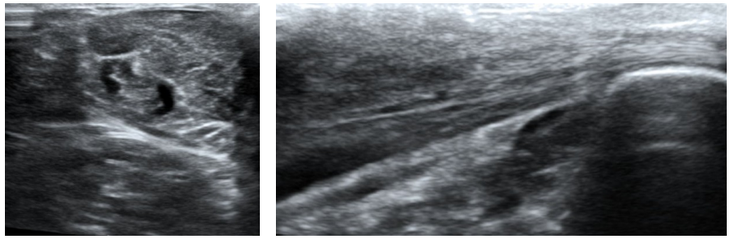


Figure 1. *Diagnostic ultrasound demonstrating the partial-thickness Achilles tear.*

Single whole blood injection restores pain-free, unrestricted activity after 5 years of limiting Achilles tendon pain

RESULTS

	Baseline	6 week follow up
Pain (VAS)	Constant 2/10	**0/10**
Activity-related symptoms	Recurrent with activity	**Resolved**
Activity	Limited weightlifting, hiking, and cycling	**Cycling, resistance training, calf raises, single-leg deadlifts, and stretching 4×/week**
Daily steps	—	**>25,000 without symptoms**
Boot	CAM boot after injection	**Discontinued at ~1 week**

DISCUSSION

After five years of failed conservative care, surgery was the next conventional step. A single ultrasound-guided autologous whole blood injection instead produced pain-free, unrestricted activity within weeks.

Existing randomized trials of autologous blood showed no or minimal benefit, but each injected blindly alongside the tendon.[1,5] Ultrasound guidance and intralesional placement remain untested in a randomized study and may merit consideration as a cost-effective alternative to surgery.

Limitations: single case; lost to follow-up after six weeks; durability unproven.

MATERIALS AND METHODS

Diagnosis was established by point-of-care ultrasound and magnetic resonance imaging. The patient was positioned prone and prepped. Skin was anesthetized with 3 mL of 1% lidocaine via a 25-gauge needle.

Five milliliters of peripherally drawn autologous whole blood was injected under real-time ultrasound guidance using a 21-gauge, 2-inch needle, deposited predominantly peritendinously with a portion placed into the visualized partial-thickness tear.

Post-procedure care included one week of controlled-ankle-motion boot immobilization, three months' avoidance of NSAIDs and corticosteroids, and staged physical therapy. Outcomes were VAS pain and return to activity at six weeks.

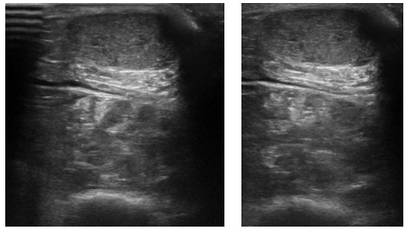


Figure 2. *Ultrasound-guided injection: needle tip (left) and expanding injectate (right).*

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Written informed consent was obtained for submission and publication. Exempt from IRB review per University of Kentucky policy (no patient-identifiable information). Autologous whole blood injection for tendinopathy is off-label. Disclosures: The authors report no relevant financial disclosures.