
Non-Surgical Repair of High Grade Achilles Tendon Tear by Autologous Platelet Graft Placement: A Case Report

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Clinical History:

38 YO male was playing softball and was running around bases when he felt like someone hit him in the back of his ankle. He felt sharp pain radiating from the back of his ankle up to his mid calf. Exam Date: 5/16/07

Patient Symptoms:

Pain, stiffness, cannot push down on foot and demonstrates foot slaps when walking.

MRI Diagnosis - 5/16/07 (fig.1):

High-grade tear of left Achilles tendon. Only a few fibers remain intact. The tear originated 7cm from its insertion upon the calcaneus and extends for approximately 2cm in length. The remainder of the Achilles tendon demonstrates severe tendinopathy. There is associated inflammation within Kager's fat pad. Diffuse subcutaneous edema.

Description of Procedure – 5/17/07:

- Anesthesia: left leg popliteal block
- Left Achilles tendon sterilely prepped and draped
- 10cc of autologous platelet concentrate prepared from 60cc of whole blood (SmartPREP System, Harvest Technologies Corp., Plymouth, MA)
- 3cc of APC⁺ (Autologous Platelet Concentrate Plus) were placed in distal & proximal fragment of tendon, near edges of tear with a 22 gauge 3 ½" needle under ultrasound guidance
- With patient maintain a complete plantar flexion the tendon's torn edges were abutted, and in this area, 4cc of APC⁺ was injected
- 1cc of thrombin/calcium chloride was introduced from the other side of the tear to form a clot matrix to keep the platelet proteins attached to the injury site.

Physical Therapy:

A physical therapy program was implemented, designed to improved strength and range of motion; including ROM active strengthening isometrics, stretching, cold laser, and stationary bike. This program was started three weeks after the procedure.

Patient Follow-Up - 6/21/07:

Patient stated that he is doing well, does not have any significant pain and does not need crutches

Post MRI – 7/2/07 (fig.2):

MRI shows interval healing of the high-grade tear with some tendon thickening.

Patient Follow-Up - 7/16/07:

Patient reports that he does not have much pain at all; no swelling, no clicking, no locking and patient reports that his ankle does not give out

Physical exam:

- Anterior draw – negative
- Squeeze – negative
- Fibular Proximal Tenderness – negative
- Talar Tilt – negative
- Strength of planter flexion 5/5 & symmetrical with uninvolved side
- Neurologically intact
- Joint Effusion – No
- ROM – normal



Fig.1 (5/16/07)
High-grade Achilles tendon tear



Fig.2 (7/2/07)
Healed tear

Conclusion:

Autologous platelet concentrate releases growth factors and adhesion molecules that are necessary for wound healing. Autologous platelet concentrate injection with ultrasound guidance should be considered as a treatment option in patients with high-grade Achilles tendon tears. The Harvest SmartPREP process for concentrating autologous platelet rich plasma is a fairly simple outpatient procedure.