

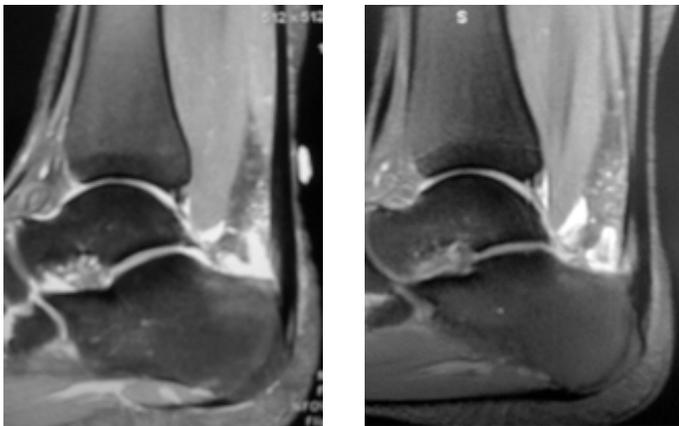
## PRP effective in treating chronic Achilles tendinosis

By Maureen Leahy

### Clinical success achieved in 93 percent of study patients

Study data presented at the 2010 Annual Meeting demonstrated that local platelet-rich plasma (PRP) is a safe and effective treatment for patients with chronic Achilles tendinosis who have been unsuccessfully treated with traditional, nonsurgical techniques.

Although a common condition, chronic Achilles tendinosis remains a complex and difficult orthopaedic challenge, and its pathophysiology is not fully understood, according to **Raymond Rocco Monto, MD**. Moreover, traditional, nonsurgical management of chronic Achilles tendinosis has a reported failure rate of 25 percent, which opens the door to newer treatment methods. One such method is PRP injections, which deliver concentrated bioactive blood components rich in cytokines and growth factors directly to the injury site.



**Fig. 1** (Left) MRI of same patient 6 months post-PRP treatment (AOFAS score 100). Note resolution of signal changes and healing of partial tear. (Right) MRI of Achilles tendinosis pre-PRP treatment (AOFAS score 34). Note signal changes and partial tearing at Achilles insertion. Courtesy of Raymond Rocco Monto,

Dr. Monto conducted a study to evaluate autologous PRP's potential efficacy in promoting healing in severe cases of Achilles tendinosis that did not respond to nonsurgical management. The prospective cohort included 30 patients (17 males and 13 females age 36 to 66 years old, with a mean age of 47 years old). All patients had previously been treated with a minimum 6-month trial of standard nonsurgical measures, including rest, physical therapy, heel lifts, cam walker bracing, cast immobilization, night splinting, and nonsteroidal medications. The severity of the Achilles tendon injuries was assessed using magnetic resonance imaging (MRI) without contrast (18 patients) and ultrasound (12 patients).

For each patient, 26 mL of venous blood was obtained and mixed with 4 mL of no-clot blood. Using a soft spin technique, the samples were centrifuged at 2400 rpm for 12 minutes to obtain a 4-mL PRP unbuffered and unactivated isolate. The isolate was then injected into the injured area of the Achilles tendon, using multiplanar ultrasound guidance, an 18-gauge needle, and local anesthesia. Afterward, patients were placed into a cam walker brace for 48 hours and allowed to return to normal activities as tolerated.

A physical examination and scoring data (American Orthopaedic Foot & Ankle Society [AOFAS] Ankle-Hindfoot Scores) were completed prior to PRP injection and at 1, 2, 3, and 6 months following treatment. In addition, repeat imaging studies (MRI and ultrasound) were performed and compared to pretreatment findings.

### **Significant improvement in AOFAS scores**

At 6 months, 28 of 30 (93 percent) of the PRP-treated patients remained satisfied with their clinical results. Additionally, none of the patients required further treatment. AOFAS scores increased from an initial average of 34 (range: 26–60) to an average of 84 at 1 month. Improvement slowly continued in subsequent months, to an average of 87 at 2 months, 88 at 3 months, and 92 (range: 87–100) at 6 months following treatment. Advanced imaging studies showed normalization in the treated injury zone in 27 of 30 (92 percent) of the patients (Fig. 1). No complications were noted in any of the patients, and all returned to their preinjury occupations.

According to Dr. Monto, the successful use of local PRP injection for chronic Achilles tendinosis where nonsurgical management had failed is likely due to the release of growth factors and chemoattractants from the highly concentrated platelets in the injury zone. "These platelet 'nests' then act as rally points for the local recruitment of macrophages and fibroblasts to gradually repair the damaged collagen of the tendon over the ensuing 4 to 8 weeks following platelet activation," he said. "This induces angiogenesis and collagen processing with immigration of fibroblasts to the injury zone. Consistent with this theory is the finding that most of the improvement seen in our patients occurred in the first 1 to 2 months following the PRP injection."

Dr. Monto is the author of "[Platelet-rich plasma effectively treats chronic Achilles tendinosis.](#)" He reports the following conflicts: Exactech.

[View the AAOS clinical practice guidelines on the diagnosis and treatment of acute Achilles tendon rupture.](#)

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