

Chronic Superficial Achilles Bursitis Treated with Percutaneous Bursectomy and Platelet-Rich Plasma Injection: A Case Report

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Introduction

The Achilles tendon is the largest tendon in the body, connecting the gastrocnemius and soleus muscles to the calcaneus. It contains both a retrocalcaneal bursa anterior to the tendon when it is inserted and a larger and more superficial subcutaneous bursa posterior to the tendon. Although Achilles superficial bursitis is not related to a specific injury, it is usually due to repetitive stress on the insertion of the tendon on the calcaneus. There are several causes for this, including a sudden increase in exercise regimen, tense gastrocnemius muscles, and calcaneal spurs. In addition, it can be seen in active middle-aged people who play recreational sports or who suddenly increase their intensity or training time. Treatments include physical therapy, strengthening exercises, anti-inflammatory drugs, orthotics, heel lift and activity modification.

Case Summary

A 23-year-old active man presented complaints of chronic right ankle pain over a three-year period localized on the posterior aspect of the ankle and the hindfoot. The patient described severe pain, swelling and tenderness in the posterior calcaneus which had worsened in the past few months. He indicated that the pain was exacerbated by playing recreational sports and wearing tight shoes. He denied any recent or acute injuries, although he admitted that he recently spent more time studying at university and playing sports sporadically. The patient described the pain on initial presentation as mild to moderate and sometimes severe, acute and stabbed. In recent weeks, the pain had worsened while walking as well as going up and down. The patient had consulted several doctors for this pain

which had already been diagnosed with Achilles tendinitis. He had followed several months of physical therapy, oral anti-inflammatory drugs, and used a shoe shoe and heel lift shoes without much relief. On examination, the patient had a severe sensitivity to palpation throughout the Achilles superficial bursa, from the medial to the lateral and from the proximal to the distal. On ultrasound, his superficial Achilles bursa was chronically inflamed and there was no pathology in the real tendon. Patient had Haglund deformity.

Given the chronicity of his symptoms and the failure of conservative measures, the patient was offered a surgical consultation for an open bursectomy and a Haglund resection; however, the patient indicated that he was not interested in surgery at this time due to scarring issues and wanted to exhaust the minimally invasive options. The patient was informed of the possibility of injecting platelet rich plasma (PRP) into the bursa to stimulate the healing of tissues compared to the achievement of percutaneous bursitis using the Topaz EZ Microdebrider (Smith & Nephew, London, UK) to eliminate chronic tissue degeneration, as compared to the combination of the two treatment options. The patient was more informed that these treatments are new and therefore considered experimental due to the lack of incontestable evidence in the literature on their benefits. He has also been educated about the risks associated with these treatment options, including bleeding, infections, tendon rupture and the possibility of an inflammatory post-injection reaction. The patient chose to perform a percutaneous right superficial Achilles bursectomy guided by ultrasound and an injection of PRP into the bursa.

After obtaining written informed consent, 25 ml of whole blood was taken from the antecubital fossa, mixed with 5 ml of dextrose acid citrate-A (ACD-A) and centrifuged (single centrifugation) using the system EmCyte (EmCyte Corporation, Fort Myers, FL) to form 3 ml of PRP rich in leukocytes (no activator used). This was achieved by manually aspirating the buffy coat layer, following the manufacturer's directions.

The patient's skin and soft tissue surrounding the posterior aspect of the right ankle and hindfoot were prepared and cleaned in a sterile manner with a solution

of betadine and isopropyl alcohol. Live ultrasound imaging using a portable ultrasound imaging device was used with a sterile ultrasound gel to avoid any surrounding neurovascular structure (Sonosite M-Turbo with linear transducer HFL50X, 15-6 MHz by FUJIFILM SonoSite Inc., Washington, USA). A total of 2.5 ml of 1% lidocaine and 2.5 ml of 0.25% marcaine were injected into the surrounding soft tissue for local anesthesia. An 18 gauge 1 ½ inch needle was used to puncture the skin. Then, the coblation rod was advanced in the plane with the ultrasound probe in a sagittal view towards the superficial Achilles bursa. A percutaneous superficial Achilles bursectomy was then performed on the posterior surface of the tendon by activating the instrument about twenty times over the entire bursa, covering from the proximal to distal, medial to lateral and superficial to deep bursa.

The patient was then injected with PRP rich in leukocytes into the treated site. Under live ultrasound; a 1 ½ inch 22 gauge needle was used to inject a total of 3 ml of plasma concentrate into the soft tissue around the Achilles tendon and Achilles superficial bursa. At no time was the Achilles tendon punctured with needles or the instrument or injected with PRP, confirmed by live ultrasound. The drug was seen to enter the correct tissue space. Hemostasis was obtained and the patient tolerated the procedure well without any noted complications.

The patient was equipped with crutches and a walking boot to immobilize the ankle after the completion of the procedure and was asked to wear the boot at all times during the first week. After a week, he completed a 7-day start-up withdrawal protocol. A post-PRP physiotherapy program was administered to the patient and started two weeks after the procedure. The patient was advised not to take any anti-inflammatory medication for two weeks to avoid counteracting the effect of the PRP injection. During his four-week follow-up, the patient

reported mild intermittent walking pain, but significant improvement in pain when at rest and when sitting. At eight weeks after the intervention, his foot pain had completely disappeared, the patient declaring that it was "100% better". Ultrasound imaging showed a healed superficial Achilles bursa (Figure 3). Overall, the patient's analog visual scale (VAS) improved from 6/10 before the procedure, to 2/10 both at 4 and 8 weeks, and finally 0/10 at the 7 month mark without any residual sensitivity to palpation on the superficial Achilles bursa. The patient was very satisfied with his improvement in the interval after three years of ankle pain.

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