

# Injectable PURION® Processed Dehydrated Amniotic Membrane Use in Patient with Rupture of the Plantar Fascia

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## Abstract

- ❖ A 26 year old athletic female with three month history of heel pain and swelling presents after extensive physical therapy treatment for plantar fasciitis. Tear of the plantar fascia documented by ultrasound.
- ❖ Treatment with immobilization, extensive physical therapy and orthotic management failed to improve her symptoms. Visual Analogue Scale (VAS) for pain remained at a 6/10.
- ❖ Options for surgical care, Platelet Rich Plasma injection or PURION® Processed Amniotic membrane allograft injection were reviewed and offered. She elected allograft injection.
- ❖ At six weeks post injection, pain reduced to VAS of 0-2/10. She has returned to short periods of running without exacerbation of symptoms.
- ❖ PURION® processed Amniotic Membrane Allograft injection may be a valuable treatment option for intractable plantar fasciitis with or without fascial tear.

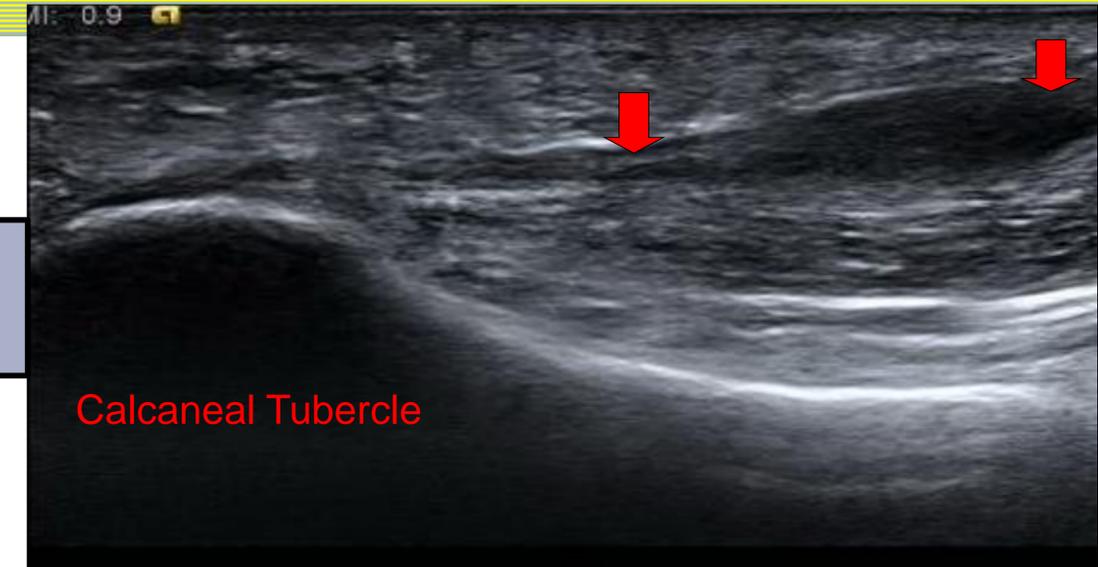
## Patient History

- ❖ A 26 year old athletic female runner presented for assessment to the Loyola University Outpatient Center in January 2012 due to intractable left heel pain. She is a physical therapist by training. She had multiple attempts to treat her pain, prior to being seen, with physical therapy including joint mobilization, taping, dexamethasone ionto- and phonophoresis as well as using a night splint. Her pain VAS score was a constant 6-8/10. She was unable to run. Her exam showed intact N-V status. No Tinel's sign at the tibial nerve. No calcaneal pain. Radiographs were normal. She had marked pain along the medial fascial band just distal to the calcaneal tubercle.
- ❖ An ultrasound was performed (**Image 1**) and a fascial rupture was diagnosed. She was made non-weight bearing in a cast boot for eight weeks. Custom orthotics were manufactured during that time so that she could transition to those after immobilization.
- ❖ After immobilization was complete, she was restarted on physical therapy. After two months, she had persisting pain in the fascia as well as a persisting palpable mass along the fascia secondary to the tear. An MRI was obtained due to the severity of her symptoms (**Image 2**). As the fascia appeared to be healing, physical therapy and activity restriction was advised.
- ❖ Three months later (September 4, 2012) she returned with persisting soreness and the inability to jog without pain of VAS 7-8/10. Options of plantar fascia release, Platelet Rich Plasma injection or amniotic membrane allograft injection were reviewed with her. She elected to have the amniotic membrane allograft injection performed.

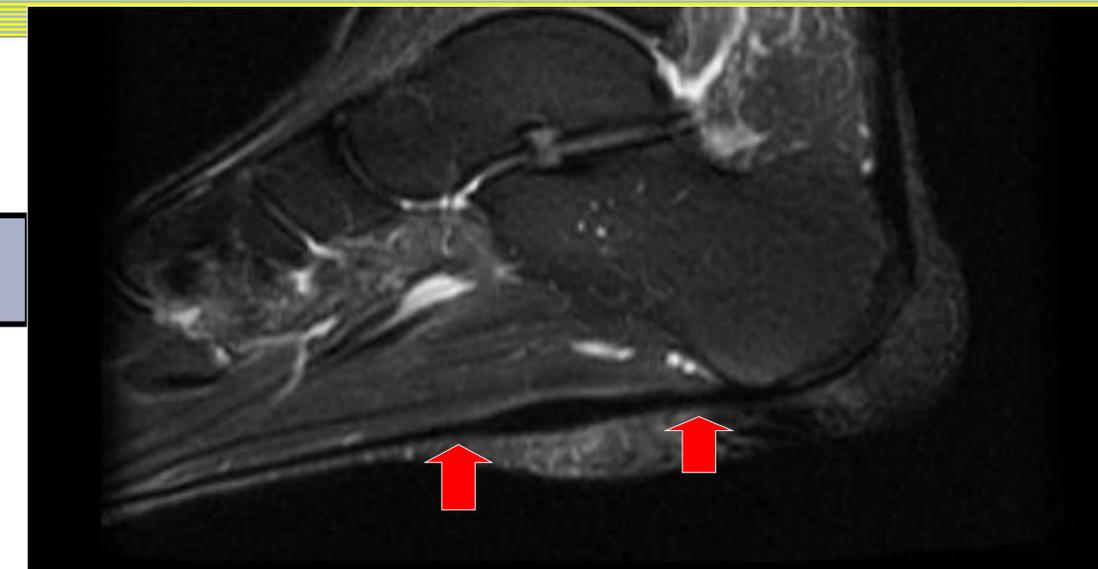
## Methods

- ❖ 1.25 ml graft was prepared by mixing this with 1.25 cc of 0.5% bupivacaine plain. The mixture was shaken for 45 seconds. An antiseptic prep of the area of fascia tear had been performed. Using aseptic technique, the graft was injected 50:50 above and below the fascia. Ultrasound guidance was not used. She tolerated the injection very well without complications. She was advised to use acetaminophen for pain relief and to call if her pain was significant. She did call the next day for pain medication and acetaminophen with hydrocodone 5mg was prescribed. This provided satisfactory relief and was needed for two days every 6-8 hours.
- ❖ At six week follow up from injection she noted significant reduction in pain with a VAS of 0-2. She could jog a short distance using orthotics without significant pain increase. Her soft tissue mass palpable at the site of the tear was reduced by greater than 50%. She is continuing with therapy to slowly increase her strength and running time.

**IMAGE 1:** Initial Ultrasound image showing fascia tear between two red arrows. Tear extends beyond margin of this view.



**IMAGE 2:** MRI at three months post injury. Extent of fascial injury evident between arrows.



## Discussion

- ❖ Patients with rupture of the plantar fascia can have a protracted course of recovery.
- ❖ For those patients with intractable pain after 6 months, the options are limited. Surgical care, extra corporal shock wave therapy and platelet rich plasma injections have been used with some success.
- ❖ A novel approach injecting amniotic membrane graft at the site of plantar fascia rupture is presented with positive early results. No complications were noted from this treatment and the mechanics of the foot are not disrupted.
- ❖ Long term follow up and extended study of a large population is indicated to further assess this method of treatment.