



Clinical Research

“ACUPUNCTURE AND ULTRASOUND THERAPY FOR TALALGIA IN PLANTAR FASCIITIS: A CASE STUDY.”

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ABSTRACT

Background: Talalgia or plantar heel pain caused by plantar fasciitis (PF), refers to inflammatory changes in the plantar fascia; However, it's degenerative because of the absence of inflammatory cells. Surgical and pharmacological treatments are available, but conservative management is preferred. **Objective:** This case study aims to evaluate the acupuncture and Ultrasound therapy for managing Talalgia in PF. **Case Presentation:** A 45-year-old male presented with bilateral heel pain for 3 months. The patient had severe pain during the first few steps in the morning and aggravated by prolonged standing. Initial assessments of Visual Analogue Scale(VAS) scores(7/10 on the right heel, 6/10 on the left) and Foot Function Index indicate moderate disability. **Treatment:** The patient underwent acupuncture in the Urinary Bladder 62 and local points near the plantar fascia and therapeutic ultrasound was applied to the heels. **Results:** After three weeks of treatment, the patient stated a reduction in pain, with VAS scores decreasing from 7 to 2 on the right heel and 6 to 0 on the left. The Foot Function Index also improved markedly. the patient reported complete pain relief and was able to stand for long periods. **Conclusion:** The combination of acupuncture and ultrasound therapy in yoga and naturopathy, proved effective in managing talalgia related to PF, gives significant pain relief and improved foot function.

KEYWORDS : Acupuncture, Plantar fasciitis, Talalgia, Ultrasound.**INTRODUCTION**

Talalgia, known as Plantar Heel pain, is a common foot complaint in adults caused by Plantar Fasciitis (PF), due to degenerative irritation of the plantar fascia(Kirkpatrick et al., 2017). Plantar fascia is a fibrocartilaginous structure that extends from the calcaneal tuberosity and plays a crucial role in normal biomechanics of the foot by providing support to the arch of the foot and acting as a shock absorber. PF sometimes refers to inflammatory changes in the tissue around the calcaneus; however, it is degenerative rather than inflammatory due to the absence of inflammatory cells(Lemont et al.,2003).

Nearly one in every ten individuals experience talalgia during their lifetime, and the prevalence of plantar fasciitis is common between the ages of 40 and 60 years, with no gender difference, though it affects athletic people more frequently(Rhim et al., 2021). Risk factors for talalgia include athletic activities, occupations (involve prolonged standing), obesity, pes planus, and limited dorsiflexion of the foot(Yi et al., 2011). Despite the high prevalence of PF, the exact pathogenesis remains unknown, possibly due to repeated traction forces on plantar fascia during weight-bearing activities like walking, which can lead to micro tears and degeneration at its origin on the calcaneal tuberosity, resulting in periositis, inflammation, and chronic pain(Cardenuto Ferreira, 2014).

Management of talalgia for PF is conservative rather than surgical or corticosteroid infiltration, NSAIDs, and analgesics because of their adverse effect, even surgery is recommended after 6 months of conservative treatment(Lim et al., 2016). Conservative management includes acupuncture and ultrasound methods of intervention, commonly used in Yoga and Naturopathy hospitals for treating talalgia in PF. Acupuncture, based on Traditional Chinese Medicine (TCM), is considered a safe and effective method for reducing musculoskeletal pain. Ultrasound therapy produces sonic waves that decrease pain and promote the healing process(Alhakami et al., 2024; Thiagarajah, 2017).

Case Presentation:

A 45-year-old male traffic policeman presented to our Outpatient Department (International Institute of Yoga and Naturopathy Medical Science, Tamil Nadu, India) with a complaint of pain in both heels for the past 3 months. The symptoms are gradual onset and most severe in the first few steps on the floor in the morning, which is comfortable after some steps. Pain does not radiate and is not associated with numbness or tingling sensations. They are aggravated by prolonged standing (more than 30 minutes) due to his occupation and mildly relieved by rest. He has regular walking activities for 30 minutes. He tried changing the cushion in his footwear and took analgesics for a month, but found no relief. His body mass index of 29.4 Kg/m² shows

he is overweight, and his vitals are normal. There is no systemic disease. No history of falls or trauma.

On physical examination, there is no abnormality in the leg and foot and no signs of inflammation. On palpation, there is mild tenderness on the bottom of the heel with high pressure, mildly aggravated during full dorsiflexion. Normal Range of motion is maintained in inversion, eversion and plantar flexion, of both ankles. During gait assessment, he has a toe-standing gait for a few steps, followed by placing the heels down one by one after a few steps (antalgic gait). Bilateral lateral view X-rays were taken, indicating no fracture and calcaneal spur. The visual analogue scale (VAS) indicates a pain intensity of 7 out of 10 in the right heel and 6 out of 10 in the left heel. Foot function index related to pain and disability shows on the Right foot at 59.4% on the left foot at 53.4%.

He has been diagnosed with Bilateral Talalgia of Plantar Fasciitis, Based on First-step pain, the Presence of risk factors, and Tenderness during dorsiflexion.

Treatment:

After diagnosis, the patient was advised to undergo yoga and naturopathy treatments, including acupuncture and ultrasound therapy.

Acupuncture:

A sterile stainless-steel needle 0.25mm X 25mm to a depth of 20-25mm and was inserted perpendicularly: Urinary Bladder 62 (UB 62) which is located on the lateral aspect of the foot, a depression below the lateral malleolus and posterior to the peroneal tendon and two local points located precisely between the white and brown skin along a longitudinal line in the middle of the medial and lateral malleolus inserted towards the attachment of Plantar Fascia to calcaneum.

Ultrasound Therapy:

Therapeutic ultrasound was then applied to the heel, covering the area from the mid-sole to the heel for 8 minutes using a 1 MHz probe in a circular motion using Aquasonic gel.

This treatment was administered three times a week for three weeks. No side effects are noted.

RESULT:

After three weeks of treatment combining acupuncture and ultrasound therapy, the patient showed significant improvement in symptoms. VAS scores for pain decreased notably: on the right heel, the VAS score reduced from 7 to 2, and on the left heel, the score dropped from 6 to 0. Foot function index related to pain and disability shows on the Right foot at 31.7% on the left foot at 20.5%.

On physical examination, no tenderness has been noted during dorsiflexion. The previous painful pressure points had no pain on palpation. The patient reported complete relief from pain in both heels, indicating a successful outcome. He can stand for more than an hour but after prolonged standing, the pain has been mildly aggravated in his Right heel during his occupation.

DISCUSSION:

Plantar fasciitis-related talalgia is effectively managed through conservative methods, including yoga and naturopathic treatments. This study highlights conservative treatments such as acupuncture and ultrasound therapy for managing talalgia, or plantar heel pain. Acupuncture reduces pain and can be proposed by several mechanisms 'central opioid pain inhibition, Diffuse noxious inhibitory control, and anti-inflammatory(Thiagarajah, 2017). Studies have indicated that the effectiveness of acupuncture treatment depends on four factors: spontaneous resolution, placebo or psychological effects, non-specific physiological effects irrespective of needle insertion, and specific effects due to needling at specific locations(Zhang et al., 2011). According to the TCM, UB 62 is a confluent point of yang heel vessels, which removes the stagnation of Qi (Vital Energy) in the heel thereby relieving the symptoms(Day, 2019). Ultrasound therapy uses high-frequency current to produce sonic waves which act in 2 ways, The First thermodynamic effect increases the heat at specific areas around 41° to 44° Celsius and the second increases the vascular permeability and circulation thereby reducing the pain and promoting healing(Alhakami et al., 2024).

CONCLUSION:

This case study shows the effective management of Talalgia related to PF by a combination of acupuncture and ultrasound therapy. For three weeks, the patient had significant improvements in VAS scores and an improvement in the Foot Function Index. The complete relief from pain, absence of tenderness, and the ability to stand for extended periods indicate the success of the treatment. Although mild discomfort was reported after prolonged standing, the overall outcome suggests yoga and naturopathy treatments like acupuncture and ultrasound therapy can be effective conservative treatment options for managing Talalgia related to plantar Fasciitis. This case supports the use of these conservative treatment modalities as viable options for patients with plantar heel pain, particularly within yoga and naturopathy treatments.

Conflict of Interest:

The authors declare no conflicts of interest.

Informed Consent:

Informed consent was obtained from the patient for publication of this case study and accompanying images.

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