

Effect of MFR (Myofascial Release) Combine with Contrast Bath in the Patient with Plantar Fasciitis

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ABSTRACT:-

BACKGROUND: Plantar fasciitis is a non-infectious inflammation of the plantar fascia. The individual affected is often a middle-aged person reporting discomfort in one or both heels. Generally, this discomfort is most severe in the morning.

Case Description: A 47-year-old woman complained that she had been experiencing pain over the left heel's plantar aspect for the previous six months. She complained of excruciating discomfort, especially after extended periods of relaxation and during the first few steps in the morning.

Physiotherapy Intervention:

1. Myofascial release: This technique was applied to the Achilles tendon, plantar fascia, gastrocnemius, and soleus muscle in order to enhance tissue flexibility and lessen pain (Reduce Fascial Stiffness).
2. 2) Contrast Bath Therapy: Contrast Bath Therapy by alternating warm and cool water immersion to stimulate blood circulation, reduce inflammation

Result: The patient plantar fasciitis soreness and heel pain significantly decrease once the intervention was finished. Ankle dorsiflexion increases and the plantar fascia and calf muscle soft tissue flexibility improved.

Discussion: Nicholas C. Waston (2025) in the article "Plantar Fasciitis: An Autobiographical Case Report was the Perspective of an Athlete and Physician" reported that plantar fasciitis responds well to conservative treatment. The author emphasized that combining different conservative treatment approaches

Conclusion: The case study shows the conservative treatment of plantar fasciitis benefited from the combination of MFR and contrast bath therapy.

Keywords: plantar Fasciitis; Myofascial Release (MFR); Contrast Bath Therapy; Heel Pain; Pain Reduction; Functional Mobility; Physiotherapy; Conservative Management.

BACKGROUND:-

Plantar fasciitis is a non-infectious inflammation of the plantar fascia. The individual affected is often a middle-aged person reporting discomfort in one or both heels. Generally, this discomfort is most severe in the morning, causing the individual difficulty in putting weight on the foot right after getting out of bed. There may be additional related symptoms such as tennis elbow, joint pain, or tenosynovitis. Tenderness can be felt when pressure is applied to the medial tuberosity of the calcaneus. Plantar fasciitis is one of the leading causes of heel discomfort, significantly affecting patients' quality of life and their ability to

function. This condition is more prevalent in females and is typically linked to biomechanical issues. Histopathological studies indicate that plantar fasciitis is better described by chronic degenerative changes rather than traditional inflammatory responses. Epidemiology: Plantar fasciitis is the leading cause of heel discomfort in adults. The occurrence of plantar fasciitis is 3.83 cases per 1000 patient years, with a higher prevalence among females. The lifetime risk of developing plantar fasciitis is approximately 10%. In about one third of cases, plantar fasciitis can occur on both feet. It is estimated that the prevalence of plantar fasciitis ranges from 3.6% to 7% in runners. Prevalence: It is unclear how common plantar heel pain is; nonetheless, it has been estimated that 7% of individuals over 65 years report heel tenderness, that plantar heel pain is responsible for 25% of all running-related foot injuries, and that over a million visits to American doctors each year are related to the diagnosis and treatment of plantar heel pain. Gender does not appear to have any bearing on the illness, which affects both sedentary and active individuals. Anatomy: The foot's arch is supported by a wide band of connective tissue called the plantar fascia. It consists of thicker medial and lateral components and a thicker core component. In terms of function, the plantar fascia helps preserve the longitudinal arch and gives the foot's sole a windlass action. It is attached proximally to the calcaneus medially at the medial tubercle of the calcaneus and splits into five digital bands that attach to the metatarsal heads and the base of the proximal phalanges. Additionally, fibers from the plantar fascia merge together with the flexor sheath and the transverse metatarsal ligament. Etiology: Plantar fasciitis can have a variety of causes which are frequently unknown. It is most likely caused by repetitive microtrauma due to high occurrence in runners, obesity, jobs requiring extended standing and weight bearing, and heel spur are potential risk factors. Biomechanics: The thick fascia that runs almost the whole length of the foot is called the plantar aponeuroses. The plantar aponeuroses, or plantar fascia, plays a particularly significant function in providing arch support, even if other passive tissues also play a contribution. The plantar fascia helps maintain the longitudinal arch of the foot and acts as a windlass mechanism during gait.

Clinical Manifestation: pain in the heel, particularly in the medial heel. excruciating discomfort when taking your initial steps in the morning. discomfort during extended walking or standing. plantar fascia tenderness. foot stiffness, particularly after rest. difficulty bearing weight or walking.

Investigation: two rules out underlining endocrine and inflammatory disorder laboratory investigation are conduct. x-ray is necessary to calcaneal stress fracture calcaneal spur. ultrasonography is the preferred research imaging because it is in expensive but it takes specialized training personnel

Treatment: Plantar fasciitis is primarily treated conservatively. Rest, activity moderation, plantar fascia and Achilles tendon stretching exercises, suitable footwear or orthotics, ice application, NSAIDs (if recommended), and physiotherapy are included to increase flexibility, and restore normal foot function, Myofascial Release (MFR), contrast bath therapy, strengthening exercises, and patient education.

Scope of the study: The goal of the study is to assess the efficacy of conservative management of planter fasciitis using MRF and contrast bath therapy in order to alleviate pain, increase ankle and foot flexibility, lessen stiffness and enhance quality of life.

Objective of the study:

To evaluate the effect of Myofascial Release (MFR) on pain in patients with plantar fasciitis.

To assess the effectiveness of contrast bath therapy in reducing heel pain and inflammation.

To determine the combined effect of MFR and contrast bath therapy on pain reduction using the Visual Analogue Scale (VAS).

To evaluate improvement in ankle range of motion (ROM) after treatment.

Case Description:

A 47-year-old woman complained that she had been experiencing pain over the left heel's plantar aspect for the previous six months. She complained of excruciating discomfort, especially after extended periods of relaxation and during the first few steps in the morning. After a few minutes of walking, the discomfort progressively subsided, but it worsened with prolonged standing, walking, stair climbing, heel wear, and domestic tasks. She denied having ever had a fracture, trauma, or surgery. Plantar fasciitis was suggested by the clinical results.

On Observation:

The patient walked with slight discomfort during the initial steps, whereas the gait pattern was otherwise normal. On palpation, tightness of the plantar fascia and gastrocnemius muscle was evident. Palpation exacerbated heel discomfort. An evaluation of the ankle joint range of motion of the ankle joint is modest restriction of dorsiflexion, which was assessed using a goniometer. During activity, the Numeric Pain Rating Scale (NPRS) score was 7/10, whereas at rest it was 2/10 the intrinsic foot muscle had a grade 4/5 muscle strength and minor weakening according to the result of the manual muscle testing.

Unique of the study

This case study is unique because it assesses the combined impact of Contrast Bath Therapy and Myofascial Release (MFR) in the conservative treatment of Plantar Fasciitis. Thus, this case study is distinct. While Contrast Bath Therapy reduces pain and inflammation and increases circulation, MFR helps enhance soft tissue flexibility and lessen plantar fascia tightness, thereby reducing heel pain.

Physiotherapy Intervention:

- Myofascial release: This technique was applied to the Achilles tendon, plantar fascia, gastrocnemius, and soleus muscle in order to enhance tissue flexibility and lessen pain (Reduce Fascial Stiffness).
- Patient Position: The patient was placed in supine on the treatment couch with the ankle relaxed and the affected foot exposed. Therapist Position:
- The therapist stood at the affected limb while standing at the foot end of the couch. While the other hand securely released the first band, stabilizing the foot.



Method (Technique): Direct Myofascial Release Technique The therapist slowly and steadily applied pressure along the plantar fascia from the medial calcaneal tubercle to the metatarsal heads. Tissue resistance subsided and a fascial release was sensed, and mild longitudinal stretching was continued.

Depending on the patient tolerance, the pressure was repeated after being sustained for 15 to 120 seconds.

- **Contrast Bath Therapy:** Contrast Bath Therapy by alternating warm and cool water immersion to stimulate blood circulation, reduce inflammation, lessen muscular spasms.
- **Patient Position:** The patient was seated comfortably on a chair with the affected foot exposed. Two tubs were placed in front of the patient, one containing warm water and other containing cold water.
- **Therapist Position:** Positioned beside the patient and the two tubs to supervise the procedure, ensure correct water temperature
- **Method:** Alternating warm-cold immersion. **Technique:** There were two containers ready. Warm water: 38°C and 44°C. Affected submerged in cold water for 1 minute, warm for 15 to 20 minutes, the cycle of warm and cold immersion was repeated.



Result:

The patient plantar fasciitis soreness and heel pain significantly decrease once the intervention was finished. Ankle dorsiflexion increases and the plantar fascia and calf muscle soft tissue flexibility improved. The patient performed better in everyday tasks and had an increase in walking tolerance and weight bearing capacity. The FAAM score increase, indicating improved foot function and overall clinical recovery, while the NPRS score declined.

Outcome measure	Pre-treatment	Post-treatment
VAS scale	7/10	3/10
Ankle dorsiflexion ROM	13degree	17degree

Discussion:

Nicholas C. Waston (2025) in the article "Plantar Fasciitis: An Autobiographical Case Report was the Perspective of an Athlete and Physician" reported that plantar fasciitis responds well to conservative treatment. The author emphasized that combining different conservative treatment approaches according to the patient condition provides better clinical improvement. Emily N. Schwartz and John SVC (2014) in their review "Plantar Fasciitis: Conservative Management" remains the first line treatment for plantar fasciitis. They importance of manual therapy. The improvement observed in the present case study supports their findings, as the patient experienced significant pain relief and increased ankle mobility following conservative physiotherapy management with MFR and Contrast Bath Therapy. Boobjr, Phansopkar and Somuiya (2023) in their systematic review titled "Physiotherapeutic Interventions for Individuals Suffering from Plantar Fasciitis: A Systematic Review" concluded that physiotherapy intervention is effective in reducing pain, improving ROM and enhance functional ability in patient with plantar fasciitis. The finding case study combination of MFR and contrast bath reduced pain improve ROM and better functional performance. The present finding is supported by previous studies on contrast Bath therapy, which reported that alternating hot and cold immersion improved circulation, reduce pain and enhance functional mobility. MFR therapy produced positive clinical outcomes reducing pain, improving soft tissue mobility and enhancing functional ability in patient.

Conclusion:

The case study shows the conservative treatment of plantar fasciitis benefited from the combination of MFR and contrast bath therapy. The patient reported greater ankle mobility, improved walking. Contrast bath therapy helped relieve pain and lessen stiffness, while MFR helped ease soft tissue tightness and increase plantar fascia flexibility.

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