

RESEARCH LETTER

Comparing myofascial release and percutaneous electrical nerve stimulation in plantar fasciitis: A randomised controlled trial



Hamsa Geetha Boobalan   | Ramana Kameswaran  

Department of Musculoskeletal Sciences, College of Physiotherapy, Saveetha Institute of Medical and Technical Sciences, Chennai, India

Correspondence

Hamsa Geetha Boobalan
dhanalakshmi591@gmail.com

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M Mostafa Zaman
0000-0002-1736-1342

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A: Md Nuruzzaman Khandaker
0000-0002-6924-456X
B: Mohammad Tariqul Islam
0000-0002-5272-6693

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Plantar fasciitis is a common cause of inferior heel pain, frequently affecting individuals aged 40–60 years and leading to impaired mobility and reduced quality of life. Conservative physiotherapy remains the first-line management, with interventions targeting tissue mechanics and pain modulation [1]. Myofascial release aims to reduce fascial restrictions and improve tissue extensibility, whereas percutaneous electrical nerve stimulation primarily provides neuromodulatory analgesia. Comparative evidence between these approaches remains limited [2]. This study compared the effectiveness of myofascial release and percutaneous electrical nerve stimulation in reducing pain and improving functional performance in individuals with plantar fasciitis.

A randomized comparative study was conducted among 36 participants aged 40–60 years with clinically diagnosed plantar fasciitis. Participants were randomly allocated into two groups: myofascial release (n = 18) and percutaneous electrical nerve stimulation (n = 18). Interventions were administered for 30 minutes, twice weekly for four weeks. The myofascial release group received sustained manual release techniques targeting the plantar fascia, gastrocnemius, and soleus muscles. The percutaneous electrical nerve stimulation group received electrical stimulation via percutaneously inserted needles along the medial calcaneal nerve

and plantar fascia region [3]. Pain intensity and functional performance were assessed using the Visual Analogue Scale and Foot and Ankle Disability Index. Paired t-tests were used to analyze pre- and post-intervention differences, with statistical significance set at $P < 0.05$ [4].

Both groups demonstrated significant improvements following treatment. In the myofascial release group, mean Visual Analogue Scale scores decreased from 7.0 (0.8) to 4.7 (0.8), and Foot and Ankle Disability Index scores improved from 51.1 (6.0) to 31.9 (3.4). In the percutaneous electrical nerve stimulation group, Visual Analogue Scale scores reduced from 7.0 (0.8) to 5.7 (0.8), while Foot and Ankle Disability Index scores improved from 51.1 (6.0) to 33.9 (2.5). Between-group comparison showed greater improvement in pain reduction and functional performance in the myofascial release group compared with the percutaneous electrical nerve stimulation group.

Both interventions were effective in managing plantar fasciitis, consistent with previous evidence supporting fascial mobilization and neuromodulator techniques. Improvements observed in the myofascial release group may be attributed to reduced fascial stiffness, improved tissue glide, and decreased tensile stress at the calcaneal insertion. percutaneous electrical nerve stimulation demonstrated early analgesic effects likely mediated

Key messages

Myofascial release and percutaneous electrical nerve stimulation both improve pain and function in plantar fasciitis. Myofascial release demonstrated superior reduction in pain and greater functional improvement compared with percutaneous electrical nerve stimulation after four weeks of intervention.

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Table 1 Within-group comparison of pre- and post-intervention visual analogue scale and foot and ankle disability index scores

Outcome	Pre-test	Post-test	P
Visual analogue scale			
Myofascial release	7.0 (0.8)	4.7 (0.8)	0.001
Percutaneous electrical nerve stimulation	7.0 (0.8)	5.7 (0.8)	0.001
Foot and ankle disability index			
Myofascial release	51.1 (6.0)	91.9 (3.4)	0.001
Percutaneous electrical nerve stimulation	51.1 (6.0)	83.9 (2.5)	0.001

Results are mean (standard deviation)

through peripheral nerve stimulation and pain modulation [5]. The greater functional improvement seen with myofascial release suggests that mechanical restoration of tissue properties may produce sustained benefits beyond pain relief alone [6].

These findings highlight the complementary roles of both modalities. percutaneous electrical nerve stimulation may be useful for rapid pain reduction, whereas myofascial release appears to provide progressive functional recovery. A multimodal rehabilitation approach combining both techniques may optimize clinical outcomes. Limitations include small sample size and short intervention duration. Further studies with longer follow-up are recommended.

In conclusion, both myofascial release and percutaneous electrical nerve stimulation effectively reduced pain and improved functional performance in individuals with plantar fasciitis. However, myofascial release demonstrated superior clinical outcomes and may be considered a preferred conservative intervention.

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Author contributions

Manuscript drafting and revising it critically: HG, RK.
Approval of the final version of the manuscript: HG, RK.
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Conflict of interest

We do not have any conflict of interest.

Data availability statement

Data supporting the findings are available from the corresponding author upon reasonable request.

AI disclosure

No generative AI tools were used in manuscript preparation beyond language editing assistance.

Supplementary file

None

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