

Role of foot orthosis in management of planter fasciitis

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Objective: To evaluate the effectiveness of foot orthosis in management of planter fasciitis and reduction in pain after using the foot orthosis.

Methodology: By using the purposive and convenient sampling technique this observational study was conducted from December 2011 to February 2012. Forty (40) patients with planter fasciitis were recruited from community, General hospital and Services hospital, and were provided with suitable orthosis such as sham orthosis (soft thin heel pad foam), prefabricated orthosis (firm

foam) and customized orthosis (semi rigid plastic) for three months. They were followed for 3 or 4 weeks and reduction of pain was assessed.

Results: After 3 months of treatment, 34 (85%) out of 40 patients felt the significant reduction in pain on pain scale ($P=0.000$).

Conclusions: Foot orthosis was effective in management of planter fasciitis. It reduced the pain and increases the functional capacity of patients. (Rawal Med J 2014;39: 197-198).

Key words: Foot orthosis, pain.

INTRODUCTION

The plantar fascia is a thick, broad, inelastic band of fibrous tissue that courses along the bottom (plantar surface) of the foot.¹ Painful inflammatory response of planter fascia is called Planter Fasciitis. It has three stages; in stage one acute inflammatory response is present which resolve with NSAIDs and stretching exercises. In this stage, minor pain is felt in first step after inactivity. In second stage, pain is worse and present both in activity and rest, bone spur may present. In third stage, pain is more intense and planter fascia may lead to partial or full rupture.² The major function of this fascia is to provide static support and it act like shock absorber for ground forces.³ Main cause of planter fasciitis is repetitive micro trauma as in runners; other risk factors are heel spurs, obesity and prolonged standing.⁴ Structural deformities like fore foot varus cause over pronation of foot and tension on fascia increases.⁵ Pescavus, high arched foot, have less shock absorbing capacity and also causes stretch on fascia. In pesplanus, fascial pain comes due to biomechanical disturbance.⁶ Symptoms include pain on first step after awakening from sleep, swelling under the heel, with pain and burning.⁵ Rehabilitation interventions should focus on improving plantar fascia extensibility, normalizing joint mobility, improving muscle flexibility, and

supporting the longitudinal arch. Ultrasound and soft tissue techniques can improve plantar fascia extensibility; joint mobilization techniques can improve subtalar joint mobility. For treatment we can also use orthosis, which guide and protect the body segment. Orthosis may produce small reduction in pain but its effect is not long term.⁷ It increased the functional activities and resulted in reduction in pain.⁸ Another study concluded that low cost prefabricated foot orthosis was best option in non complicated planter fasciitis.⁹ Another study noted weak relationship between the importance of pressure reduction and the achieved pressure reduction for orthotists.¹⁰ The aim of this study was to evaluate the effectiveness of foot orthosis in management of planter fasciitis and amount of reduction in pain.

METHODOLOGY

The observational study was conducted on 40 patients, who were selected by purposive and convenient sampling from General Hospital, Lahore, Services Hospital Lahore and from Community from December 2011 to February 2012. Both male and female with age 20 to 70 were included in the study. Patients with systemic diseases were excluded. All were provided with suitable orthosis such as sham orthosis (soft thin

heel pad foam), prefabricated orthosis (firm foam) and customized orthosis (semi rigid plastic) for three months. They were followed for 3 or 4 weeks and reduction of pain was assessed. The data was collected by direct personal interview and mailed questionnaire consisting of questions relating to pain and its relief after intervention.

RESULTS

The mean age of patients was 34 ± 12.06 (range 18-68) and mean weight was 63 ± 12.5 (range 44-95). 62.5 % were female and 32.5% were male. 35 % reported that they had mild pain while 2.5% had severe pain.

Table 1. Management of planter fasciitis (n=40).

Management	Number	Percentage
Use of foot orthosis	29	72.5
Reduce pain by using foot orthosis	34	85

Table 2. Response to foot orthosis.

Pain before treatment	5.13 ± 1.12	0.00
Pain after treatment	2.80 ± 1.69	

72 percent patients used the foot orthosis and 85 percent patients felt the significant reduction in pain on pain scale (Table 1). The relief of pain was significant after treatment (Table 2).

DISCUSSION

In this study, role of orthosis in management of planter fasciitis was observed in terms of pain. Previous researchers found that effect of orthosis in planter fasciitis is temporary. Karl et al reported that orthosis produced small reduction in pain but its effect is not long term.⁷ In this study, we found that patients who used orthosis during peak duration of planter fasciitis had long term relief in pain.

This study will be helpful for the professionals to handle the pain due to planter fasciitis as well as for society, office workers and sports person it is very informative. It is further recommended to conduct research on the mechanism of action of foot orthosis in terms of biomechanical variables. Limitation of study includes a small number of study participants. We recommend more work should be conducted for more reliable and sufficient information.

CONCLUSION

Foot orthosis are effective in management of planter fasciitis. It reduced the pain produced by planter fasciitis and thus increases the functional capacity of patients.

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