



International Journal of Orthopaedics Sciences

ISSN: 2395-1958
P-ISSN: 2706-6630
IJOS 2019; 5(3): 822-823
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www.orthopaper.com
Received: 19-05-2019
Accepted: 23-06-2019

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Plantar fasciitis-role of intra lesional steroids injection with multiple puncture technique

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DOI: <https://doi.org/10.22271/ortho.2019.v5.i3n.1633>

Abstract

Plantar fasciitis is one of the common OPD presentations in orthopedics. It affects the productivity of the patients due to its chronic and resistant nature. There is no reproducible investigation for the diagnosis. It remained the diagnosis of exclusion and most of the time clinical based.

There are various treatments available which includes local Ultrasound therapy, MCR (microcellular rubber) sole, silicon soles, Intralesional steroid and PRP (platelet rich plasma).

Present study described the modified technique of micro punctures along plantar fascia origin at the time of steroid administration.

Keywords: plantar fasciitis, MCR, PRP, micro punctures

Introduction

The plantar fascia is other name for the deep fascia of the sole of the foot. It comprised of pearly white linearly organized fibers originating from the medial tuberosity of the calcaneus where it is thinner and extends into a thicker center portion. The thicker central portion of the plantar fascia then extends into five bands surrounding the digital tendons^[1].

Plantar fasciitis (PF) is one of the most frequent causes of heel pain. It has been documented that 7% to 10% of the population over a lifetime get affected with it^[2]. It has a significantly negative impact on foot-specific and general health-related quality of life. Plantar fasciitis classically presents histologically with “degenerative changes in the plantar fascia, with or without fibro elastic proliferation and chronic inflammatory changes^[3] various theories being explained behind the etiology of disease process, which include mechanical overload that can eventually lead to inflammation and degenerative changes^[4] the other mechanism proposed is windlass mechanism^[5], which creates continuous micro trauma due to force full stretch of plantar fascia while toe dorsiflexion^[6].

Diagnosis is most of the time after exclusion of other possibilities and based on clinical presentation^[7]. There are various treatment options available for it which has variable results. It may be mechanical intervention which includes silicon foot orthoses, foot taping, MCR (Microcellular rubber) footwear, night splints, rest, and walking casts etc.^[8]. Oral administration of analgesics (NSAIDS). Physiotherapy mode like stretching exercises and extra corporeal shock wave therapy^[9]. Invasive methods include intra lesional injection of steroids, PRP (Platelet rich plasma), autologous blood. Surgical intervention like removal of calcaneal spur, neurectomy and plantar fasciotomy is needed very rarely in 5% to 10%, resistant cases^[10, 11].

Present study is regarding the efficacy of steroid administration by micro puncture technique.

Aims and objectives

To evaluate effect of intralesional steroid with multiple puncture technique in plantar fasciitis.

Methodology

Study was done over the period of 6 months with minimal of 3 months post injection follow-up. The patients followed periodically after 1 week, 3 weeks and 3 months.

Inclusion criteria

- Plantar fasciitis with Windlass test positive.

Exclusion criteria

- Plantar fasciitis with other disease like hyperuricemia, hypothyroidism and rheumatoid arthritis.
- Patient not willing to participate or couldn't maintain follow up visits.

Procedure

Patient asked to wash the feet with betadine scrub prior to procedure. Adequate preparation and draping was done. The maximum tenderness point marked after eliciting with the help of needle cap. Combination of 40mg (1ml) of methyl prednisolone and 1.5ml of 2%xylocaine was made.

Injection site approached from medial aspect till the bone resistance felt and administered 0.5ml of the preparation. The needle with drawn partially and multiple punctures along the plantar fascia made injecting 0.2 ml every time. Band Aid applied after the injection and patient kept for 1 our observation and discharged with advice of icepack application and Naproxen 250 mg if it pains after the disappearance of xylocaine effect

Results

15 patients were included in study, there were seven male and eight female among them. Bilateral involvement was seen in seven patients, left side in five and right side in three patients. Age group ranged between 34 years to 69 years with mean age of 51.5 years. One patient had no relief of symptoms during follow-up. All patients' complaint of increase in pain after the effect of local anesthetic has gone. This pain remained for one day and subsided after analgesic. All patients had symptomatic recovery at one week follow-up and no relapse of symptoms at 3 months follow-up.

Discussion

Plantar fasciitis is common orthopaedics OPD problem with the chances of relapse after intra leisonal injection of steroids. The multiple puncture of the plantar fascia may create micro fenestration in fascia and stimulates healing process by increasing local inflammation. This helps in healing and decrease chances of relapse.



Fig 1: Injection of the preparation after localizing maximum point of tenderness

Conclusion

Micro-puncture technique is little modification of the routine method of intra leisonal steroid injection with better results. It can effectively and safely practice in OPD. This procedure can be extended to other sites like golfers and tennis elbow.

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