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Ultrasound guided Vs Palpatory steroid injection for plantar fasciitis – A comparative outcome study

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Abstract

Being a common cause of foot pain plantar fasciitis demands a clinical work up and research to update our knowledge on it. In this study, 56 patients underwent corticosteroid injection for plantar fasciitis among which 28 patients was randomly selected for corticosteroid injection using ultrasound guidance rest of them was given the same drug using palpatory method. Patients were followed up for 3 months for pain using VAS score. Results were recorded and published.

Keywords: Ultrasound guided, Palpatory steroid injection, palpatory method

Introduction

Plantar fasciitis is a common condition affecting about 10 % of the population¹ and contribute up to 10 % of orthopedic outpatient visit approximately. More commonly affects the socially more productive working age group. It demands an effective management which is simple, effective and successful.

There are no specific guidelines for the management. The treatment choice needs to be determined depending on various clinical features, affordability and need of the patients. A specific pattern of management can often not be determined. The established principles of treatment are NSAIDS, ultrasonic physiotherapy, exercises, Intra-lesional steroid injections which can either be palpatory or USG guided and few patients may require a surgery²

Our institution being a tertiary care hospital providing free services, it receives increasing number of patients with complex painful conditions of heel among those a significant number belongs to plantar fasciitis category. Hence this study is undertaken and patients presenting with features of plantar fasciitis are included.

Aim

To compare the outcome of plantar fasciitis treated with ultrasound guided intralesional steroid injections with that of palpatory injections.

Objective

The objectives are to study and analyze, the nature of this disease, treatment feasible, outcome of ultrasound guided steroid injection and compare it with palpatory technique.

Materials and methods

The study was conducted on consequent willing patients visiting Department Of Orthopedics Out Patient Clinic, Kilpauk Medical College Hospital between JAN 2015 to DEC 2015. Ankle X rays, RBS was studied in all patients and patients got allotted to either of palpatory group or USG group randomly.

Inclusion criteria

1. Age 20 -60yrs
2. Patient having chronic heel pain
3. Patient having VAS SCORE >5
4. Symptoms persisting for at least 3m
5. Not responding to NSAIDS, PT, Footwear.

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Exclusion criteria

1. Age less than 20, >60yrs
2. Having injection site skin disorders'
3. Neuropathy
4. Patients with prior steroid injection
5. Comorbidities– Diabetic mellitus, Hypertension, immunodeficiency.

Inventory

- USG machine mindray model M5
- 2cc 80 mg methyl prednisolone plus 2cc lignocaine (ATD)

Literature review

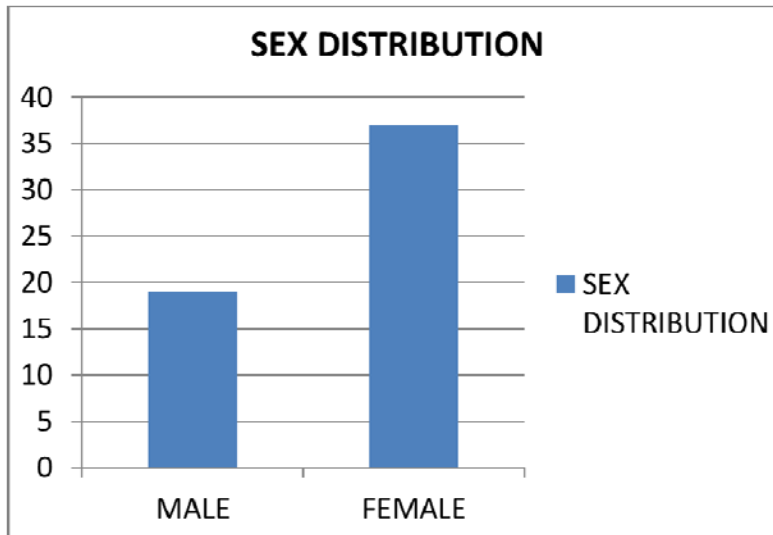
High frequency ultra-sonographic findings in plantar fasciitis and assessment of local steroid injection by Kamel M *et al* [3] showed a significant increase in symptomatic heels (range 4.8-6.5, mean 5.8 +/- 2.06 mm) compared with healthy subjects (range 1.8-3.4, mean 2.4 +/- 0.64 mm) ($p < 0.001$). A significant decrease in the thickness of plantar fascia was observed 1 week after local steroid injection (range 2.1-3.5, mean 2.3 +/- 0.91 mm). Complete relief of symptoms and signs was further observed at 6 and 30 weeks. It also concluded Ultra sonographic examination of plantar fascia is easy and quick to perform. Ultrasound procedure should be

considered early in diagnosis and management of heel pain. Ultrasound guided local steroid injection proved safe and effective in the treatment of plantar fasciitis. Janet *et al*⁴ concluded that the population mean plantar fascia thickness is greater for people with plantar fasciitis than for people without heel pain ($P < .0005$) and that the difference is clinically significant. The ultrasonic appearance of the plantar fascia in plantar fasciitis indicated inflammatory changes. Ultrasound-Guided Extracorporeal Shock Wave Therapy for Plantar Fasciitis considered to be superior than regular shock wave diathermy

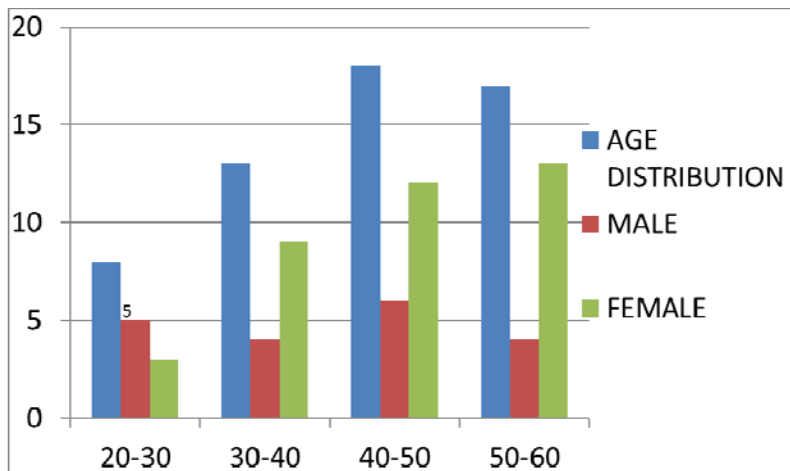
Results

- Total no of patients – 62
- Lost to follow up – 6
- Remaining patients -56
- Female - 37
- Male - 19

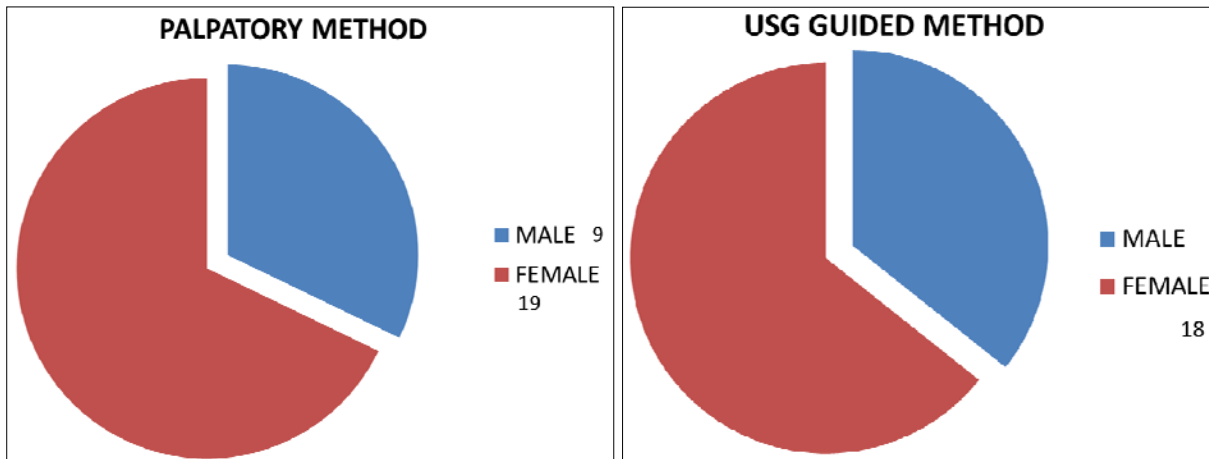
The sex distribution suggests the predominant affected were females and the age distribution starts peeking from 40 years. After randomly selecting half the patients for steroid injection under ultrasound guidance the result was as follows



Age distribution



Study group



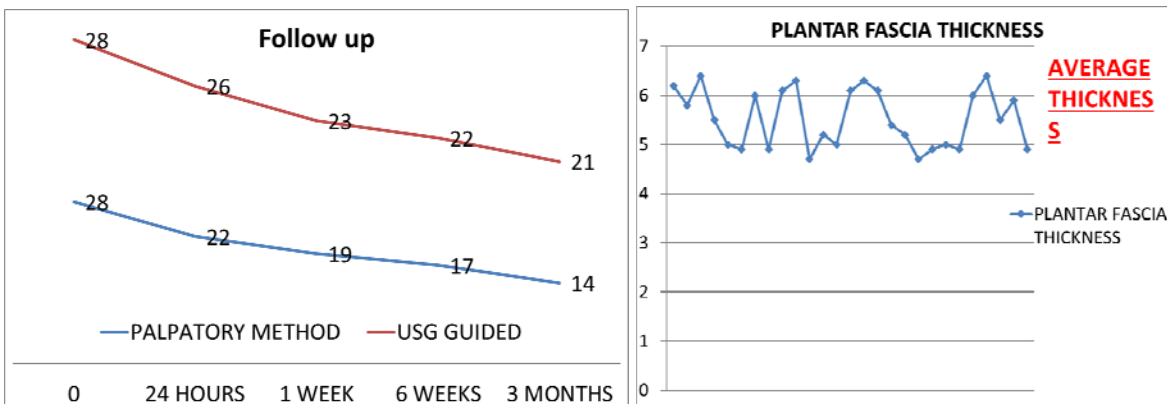
Follow up

Patients were followed up based on VAS score at

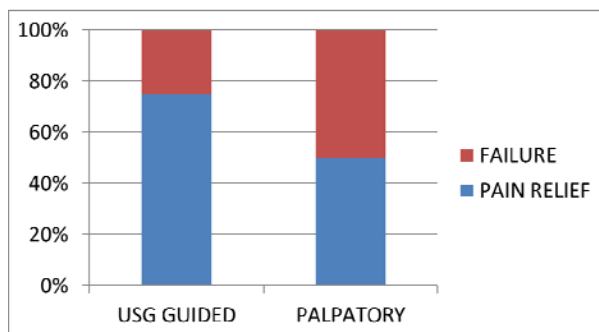
- 24hours
- 1week

- 6 weeks
- 3 months

Patient follow up



Three months follow up



Results

From our study we have found out, USG guided steroid injection is making the treatment simple and serve both diagnostic and therapeutic purposes simultaneously. Pain relieve observed with two third of the patients compared to the higher failure rate with blind injection. Analysis of pain analogue score of both the methods suggest greater proportion of people got better with the ultrasound focused injections. Hence it is conclusively demonstrating the effectiveness and success of ultrasonic focused therapy for plantar fasciitis.

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