



PLANTAR FASCIITIS: A COMPREHENSIVE REVIEW.

Dr. Dhvani Dhaval Suthar

PG- Scholar: Department: - Organon of Medicine and Homoeopathic Philosophy-PG, Parul Institute of Homoeopathy and Research Hospital, Vadodara. Parul University.

Dr. Khyati P. Lakhani

Professor and HOD, Department: - Organon of Medicine and Homoeopathic Philosophy-PG, Parul Institute of Homoeopathy and Research Hospital, Vadodara. Parul University.

ABSTRACT

Background: Plantar fasciitis is a common foot disorder caused by inflammation of the plantar fascia, leading to heel pain. It is frequently seen in women, obese individuals, athletes, dancers, and people who stand for long periods, especially between 40-60 years of age. **Objective:** To review the epidemiology, causes, pathophysiology, clinical features, and diagnosis and homoeopathic management of plantar fasciitis. **Methods:** A comprehensive literature search was conducted using Google Scholar, PubMed and standard homoeopathic textbooks. Articles from 1991 to 2026 were reviewed, including observational study, randomized controlled trials, case study.

KEYWORDS : Heel Pain, Plantar Fasciitis, Homoeopathy, Management.

INTRODUCTION

Plantar fasciitis is a painful foot condition caused by inflammation of the plantar fascia origin at the medial calcaneal tuberosity^[1]. Plantar fasciitis is a common cause of foot pain in adults. The pain originates at or near the site of the plantar fascia attachment to the medial tuberosity of the calcaneus. Several factors that increase the risk of developing plantar fasciitis include obesity, pes planus (flat foot or absence of the foot arch when standing), pes cavus (high-arched foot), limited dorsiflexion of the ankle, prolonged standing, walking on hard surfaces, and faulty shoes^[2]. It is the most common reason for heel pain responsible for 80% of cases. The condition is frequently seen between 40–60 years of age and accounts for nearly 15% of all foot-related problems^[3]. Commonly seen in women, older athletes, dancers, and young Male athletes^[1]. Both active individuals such as runners and people with prolonged standing occupations are affected, making it an important contributor to functional impairment and reduced quality of life^[3].

Definition

Plantar fasciitis is the degenerative irritation of the origin of the plantar fascia at the medial calcaneal tuberosity^[4].

Epidemiology

Plantar fasciitis (PF) is one of the most frequent musculoskeletal (MSK) complaints of the foot. 10% of the general population, according to researchers, will encounter it at least once in their lifetime. Over one million doctor visits take place each year in the USA due to it. Previously believed to occur only in athletes, it is now found to affect individuals with inactive or sedentary lifestyles as well^[5].

Types

1. Insertional plantar fasciitis also known as heel pain syndrome where pain felt at medial calcaneal tubercle
2. Diffuse plantar fasciitis: - pain is felt diffusely over the heel and sole of the foot.^[1]

Etiology

- Plantar fasciitis is often caused by repeating the same movements too much (overuse), leading to tiny tears in the plantar fascia (a thick band under the foot).
- Some foot problems that can increase the risk include: Flat feet (pes planus), High arches (pes cavus), Stiff ankles (limited ankle movement upward), Foot turning in or out too much while walking (excessive pronation or supination). These problems put extra pressure on the heel and foot tissue.

- Other risk factors are: Being overweight, Jobs or activities that need standing or walking for long hours.
- Around 50% of people with plantar fasciitis may also have heel spurs (bony growths on the heel bone), But these are not the main cause of pain^[6].

Intrinsic Factors

- Age: people between 40 to 60 years age group are at high risk.
- Foot mechanics: flat feet, high arch or abnormal pattern of walking can affect weight distribution when standing causes more stress on plantar fascia.
- Excessive foot pronation & tight calf muscles: which inhibits efficient use of windlass mechanism. This decreases shock absorption through the plantar fascia which in turn increases the tension on the fascia.
- Obesity: excess weight put more stress on plantar fascia.

Extrinsic Factors

- Runners: athletes like long distance runners such continuous pressure on their plantar fascia.
- Professional hazards: teachers, sales executives, factory workers and those stand for long hours or walking on hard surfaces. Certain exercises: Running, ballet dancing, aerobics.
- Pregnancy: due to weight gain during pregnancy.
- Improper shoes: shoes that are thin sole, lacking arch support, high heels causing the Achilles tendon can contract and shorten leads to irritation and strain around the heel.^[1]

Pathophysiology

Plantar fasciitis is believed to develop due to repeated stress and micro tears in the plantar fascia, especially at its attachment to the medial calcaneal tuberosity. Excessive stretching and repeated weight bearing can lead to chronic degeneration of the plantar fascia fibres, causing heel pain that is often worse during the first few steps after sleep or rest.

Although the condition is called 'fasciitis', it is mainly a degenerative rather than an inflammatory disorder. Biopsy studies have shown fibroblastic proliferation, disorganized collagen fibres, abnormal blood vessels, and absence of inflammatory cells, leading to the concept of 'fasciosis' reduced blood supply and impaired vascularity decrease the ability of the fascia to repair and remodel properly, contributing to chronic pain and tissue degeneration.^[6]

Clinical Features

Patients often present with a history of progressive pain at the

inferior and medial heel, but pain can radiate proximally in more severe cases. They will often describe the pain as sharp and worse with the first few steps out of bed in the morning. Long periods of standing, or in severe cases, sitting for prolonged periods will also exacerbate symptoms. Pain often decreases with ambulation or the beginning of an athletic activity but then increases throughout the day as activity increases. Pain can usually be reproduced by palpating the plantar medial calcaneal tubercle at the site of the plantar fascial insertion on the heel bone. Passive dorsiflexion of the foot and toes can reproduce the pain.^[7]

Risk Factors

Even though plantar fasciitis can develop without an obvious cause, some factors can increase your risk of developing this condition. They include:

- Age: Plantar fasciitis is most common in people between the ages of 40 and 60.
- Certain types of exercise: Activities that place a lot of stress on your heel and attached tissue — such as long-distance running, ballet dancing and aerobic dance — can contribute to the onset of plantar fasciitis.
- Foot mechanics: Flat feet, a high arch or even an atypical pattern of walking can affect the way weight is distributed when you're standing and can put added stress on the plantar fascia.
- Obesity: Excess pounds put extra stress on your plantar fascia.
- Occupations that keep you on your feet: Factory workers, teachers and others who spend most of their work hours walking or standing on hard surfaces can be at increased risk of plantar fasciitis.^[8]

Factors Associated with Plantar Fasciitis

Identifying the factors associated with plantar fasciitis helps in recognizing at-risk individuals and improving prevention and treatment methods. Obesity is commonly seen in up to 70% of patient with plantar fasciitis, and studies show a strong relationship between increased body mass index (BMI) and plantar fasciitis in non-athletic individuals. However, height does not appear to be related to the condition. In athletes, weight, height and BMI show no significant association with plantar fasciitis. Heel spurs are also strongly associated with plantar fasciitis. Other factors linked to the condition include increasing age, prolonged standing, and reduced extension of the first metatarsophalangeal joint, and decreased ankle dorsiflexion. Reduced flexibility and tightness of the plantar flexor muscle may increase stretching of the plantar fascia, raising the risk of injury. Excessive pronation is reported in 81-86% of patients, although evidence regarding the exact role of foot posture and gait abnormalities in plantar fasciitis remains conflicting.^[9]

Differential Diagnosis

Although plantar fasciitis accounts for nearly 80 % of heel pain cases, several other conditions can also cause similar symptoms. These include ankylosing spondylitis, Reiter's syndrome, osteoarthritis, and rheumatoid arthritis, especially when heel pain is present on both sides in women. In men, bilateral symptoms may suggest ankylosing spondylitis or Reiter's syndrome. In patients with diabetes mellitus, soft tissue abscess should also be considered. Symptoms such as weight loss, fever, and night pain may indicate infection or neoplasia, though primary tumors of the foot are rare. Other differential diagnosis include nerve entrapment, S1 radiculopathy, and occult fractures.^[10]

Diagnosis

Diagnosis of plantar fasciitis is based on patient history, risk factors, and physical examination. Patients commonly complaints of heel pain and stiffness during the first steps in the morning or after prolonged sitting. The pain may improve with walking but can worsen after long periods of standing or walking. On examination, tenderness and sharp pain are

usually present over the medial plantar calcaneal region. Pain may also increase on passive dorsiflexion of the ankle or first toe, which can indicate tightness of the Achilles tendon. If the history or examination findings are unusual, other causes of heel pain should be considered.^[11]

Investigation

Plantar fasciitis is primarily a clinically diagnosed. Investigations are employed to confirm the diagnosis or exclude differential diagnosis:

- Ultrasonography: fascia thickness > 4mm at calcaneal insertion is diagnostic, also identifies tears, calcifications, and perineural vascularity.
- MRI: Gold standard for detecting fascial tears and ruling out stress fractures, tarsal tunnel syndrome or neoplasm.
- Plain radiograph: to detect calcaneal spur and rule out fractures.

Treatment

Plantar fasciitis mostly has a favourable prognosis with nearly 80 to 90% of patient improved within 10 to 12 months through conservative treatment. Initial management includes activity modification, stretching exercise for calf and plantar fascia, ice application, NSAIDs and the use of prefabricated or customised orthotics. In resistant cases, therapies such as corticosteroid injections, platelet rich plasma, and extracorporeal shock wave therapy may be advised, while surgery is reserved only for a few chronic refractory cases.

Homoeopathic Management

Table No. 1 (Commonly Used Homoeopathic Remedies).

Remedy	Key Characteristics	Clinical Indication in Plantar fasciitis
Rhus toxicodendron	Tearing pain, stiffness on first motion, better by continued motion; worse rest and cold damp	Stretching of ligaments, overuse injuries, worse on waking
Calcarea carbonica	Aching, burning heel pain; obese, flabby constitution; cold, damp feet	Chronic plantar fasciitis in overweight patients with bone spurs
Ledum palustre	Puncture-like pain in heel; parts cold to touch; better cold application	Heel pain with coldness of the part; ascending rheumatism
Ruta graveolens	Bruised, lame soreness; tendon and periosteal affections; worse cold, damp	Strain of tendons and ligaments; bone-related heel pain
Aranea diadema	Periodical pain in heel worse in wet weather; numbness	Periodic heel pain, worse in damp conditions
Ammonium muriaticum	Tension and contraction of hamstrings; heel pain on walking	Plantar fasciitis with hamstring tightness; pain while walking
Pulsatilla	Shifting, wandering pains; worse warmth, better open air; gentle constitution	Plantar fasciitis with changing character of pain
Phytolacca decandra	Shooting pains in heel; worse movement, damp cold weather	Heel pain radiating along plantar aspect; fibrous tissue affections
Silicea terra	Suppurative tendency; heel fissures, bone spurs, unhealthy skin	Calcaneal spur with ulceration; chronic indolent cases
Berberis vulgaris	Radiating pains from heel; renal calculi; shooting pains	Plantar fasciitis with radiating pains; associated kidney disorders

Miasmatic Approach For Plantar Fasciitis

Psora: Functional phase. Hypersensitivity of the fascia, pain characterised by sharp, tearing pain worse on first few steps in morning. Tendency to functional changes of plantar fascia without structural changes.

Sycosis: there is heel spur formation. Thickening and fibrosis of the plantar fascia. Edema and swelling around the heel. Tendency toward chronic, stubborn nature- does not resolve easily.

Syphilis: least common but seen in advanced or complicated cases. Structural damage to the plantar fascia. Associated with bone degeneration, periostitis, and necrotic changes.

CONCLUSION

Plantar fasciitis is a common and often long-lasting condition that can greatly affect a person's daily activities and quality of life. Although conventional treatment provides temporary pain relief, recurrence and side effects from long term medication use highlight the need for complementary treatment options. Homoeopathy offers an individualized approach based on the totality of the symptoms and selection of the similimum remedy. Remedies such as Rhus toxicodendron, Calcarea carbonica, Ruta graveolens, and Silicea terra are commonly used in clinical practice for plantar fasciitis. Further well-designed clinical trials are needed to strengthen the evidence for Homoeopathic treatment.

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