

ROLE OF CALCIUM, CALCITRIOL AND INTRALESION CORTICOSTEROID FOR HEEL PAIN MANAGEMENT IN WOMEN

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ABSTRACT: Plantar heel pain is a commonly encountered Orthopaedic problem in women that can cause significant discomfort and difficulty in bearing weight. Proximal plantar fasciitis is twice as common in women as in men (2). An infracalcaneal spur frequently is associated with the symptomatology of plantar fasciitis. **METHODS AND MATERIAL:** It's a retrograded study of 72 female patients came in orthopaedics OPD with complain of planter heel pain. Age more than 30 years. Out of 72 patients, 59 were peri menopausal age group (> 40 years) and 13 were younger age group (30-40 years). 43 patients had radiological evidence of calcaneal spur. 29 patients have bilateral heel pain. We treated all these patients by life style modification, use of heel pads, stretching exercise of foot and ankle, analgesics (as and when required) calcium and calcitriol supplementation for 3 months. In 25 cases the diagnosis were made planter fasciitis and one foot is involved more with point tenderness persisted after 2 weeks of above mention treatment, we gave intra- lesion methyl prednisolone injection along with above mention treatment. **DISCUSSION:** We found 45.83% of patient s responded to this treatment within one month, 70.83% responded within 3 months and 65.27% showed improvement even after 6 months. **CONCLUSION:** Treatment of plantar heel pain should proceed in a stepwise fashion and, according to the patient's response, as follows. First, modify or suppress the alleged risk factors, give an NSAID, prescribe a stretching program for the Achilles tendon, and recommend orthotics such as heel pads .Calcium and calcitriol supplementation specially in peri menopausal women with bilateral heal pain. If these fail, give one or two local injections of a methylprednisolone.

KEYWORDS: Planter fasciitis, calcium, calcitriol, heel pain

INTRODUCTION: Plantar heel pain is a commonly encountered Orthopaedic problem in women that can cause significant discomfort and difficulty in bearing weight. The etiologies of this condition are multiple. Plantar heel pain in athletes is caused by overuse, while in non-athletes the exact cause remains controversial. Pain and focal tenderness at the inferior heel are key features.⁽¹⁾ Causes includes.

Local

- Proximal plantar fasciitis.
- Plantar fascia rupture.
- Tarsal tunnel syndrome.
- Compression of the first branch of the lateral plantar nerve.
- Plantar fasciitis coexisting with compression of the first branch of lateral plantar nerve.
- Stress fracture of the calcaneus.
- Bone tumor or bone cyst.
- Osteomyelitis.

Regional

- Spinal stenosis.
- Prolapsed intervertebral disc.

Systemic

- Inflammatory bowel disease –associated arthritis.
- Seronegative spondylo arthropathies.
- Inflammatory arthritis-rheumatoid arthritis.

Proximal plantar fasciitis is twice as common in women as in men.⁽²⁾ Plantar heel pain is the most prevalent complaint presenting to foot and ankle specialists and may be seen in upwards of 11% to 15% of adults.⁽³⁾ Plantar heel pain has been referred to in the published literature by many names including heel spur syndrome, which lends some importance to the radiographic presence of an inferior calcaneal spur.

The term plantar fasciitis has been used for years, likely in an attempt to recognize the actual symptoms occurring along the plantar fascia with or without concomitant presence of a spur. Regardless of the exact terminology, all describe the same pathology: pain along the proximal plantar fascia and its attachment in the area of the calcaneal tuberosity. The symptoms of plantar heel pain are well known, and diagnosis is relatively straightforward.

The most common cause cited for plantar heel pain is biomechanical stress of the plantar fascia and its entheses of the calcaneal tuberosity.⁽⁴⁻¹¹⁾ Mechanical overload, whether the result of biomechanical faults, obesity, or work habits, may contribute to the symptoms of heel pain.

An infracalcaneal spur frequently is associated with the symptoms of plantar fasciitis, although its presence or absence may not necessarily correlate with the patient's symptoms.⁽¹²⁾ Radiographic identification of a plantar heel spur usually indicates that the condition has been present for at least 6 to 12 months, whether having been symptomatic or asymptomatic.

METHODS AND MATERIAL: It's a retrograded study of 72 female patients came in orthopaedics OPD of Government Bundelkhand medical college Sagar from 2012 to 2013; with complain of planter heel pain. Age more than 30. We did not include posterior heel pain patients and patients who had any trauma, infection or neurogenic cause of heel pain presents. The patient in whom no specific causes found, after careful clinical, radiological, pathological examination and only complain was heel pain we diagnosed that case as planter fasciitis. In our study all the patients were non-athletes.

Out of 72 patients 59 peri menopausal age group (> 40 years) and 13 younger age group (30-40 years). 43 patients had radiological evidence of calcaneal spur. 29 patients have bilateral heel pain. We treated all these patients by life style modification, analgesics (as and when required), calcium and vitamin D supplementation for 3 months.

In 25 cases the diagnosis were made planter fasciitis and one foot is involved more with point tenderness persisted after 2 weeks of above mention treatment, we gave intra-lesion methyl prednisolone injection along with above mention treatment, 18 patient's (72%) shows improvement but 6 needed another local methylprednisolone after 4 weeks as pain reoccur and 4 patients required 3rd injection of local methyl prednisolone at 3 months.

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We evaluated response of treatment by visual analogue scale from 0 to 10, at 4 weeks, 12 weeks, and at six months. We found 45 patients (62.5%) responded to this treatment within one month, 51 of patients (70.83%) respond within 3 months. 12 of the patients' pain restarted again at 6 months but 47 patients' (65.27%) shows improvement even after 6 months.

DISCUSSION: Heel pain is a common problem especially in women in Orthopaedic outpatients department. The diagnosis of plantar heel pain is almost always clinical. Typically, the location of the pain and the absence of associated symptoms indicating a systemic disease strongly suggest the diagnosis. The key physical finding is central or centro-medial tenderness in the plantar aspect of the heel.

In rare situations, imaging studies such as lateral radiography of the hind foot, ultrasonography, or MRI are required to exclude alternative diagnoses, such as an amorphous calcium deposit, calcaneal stress fracture, or soft-tissue tumor. Because the role of calcaneal spurs in the pathogenesis of plantar heel pain is controversial, and given their lack of prognostic or therapeutic implications, a radiographic search for a calcaneal spur is not warranted. Given its low cost and high resolution, ultrasonography is the imaging study of choice when the diagnosis of plantar heel pain is unclear.

Plantar fasciitis is a common cause of heel pain in adults. The pain is usually caused by collagen degeneration (which is sometimes misnamed "chronic inflammation") at the origin of the plantar fascia at the medial tubercle of the calcaneus.

This degeneration is similar to the chronic necrosis of tendonosis, which features loss of collagen continuity, increases in ground substance (matrix of connective tissue) and vascularity, and the presence of fibro-blasts rather than the inflammatory cells usually seen with the acute inflammation of tendonitis.⁽¹³⁾

The cause of the degeneration is repetitive microtears of the plantar fascia that overcome the body's ability to repair itself. The classic sign of plantar fasciitis is that the worst pain occurs with the first few steps in the morning, but not every patient will have this symptom. Patients often notice pain at the beginning of activity that lessens or resolves as they warm up. The pain may also occur with prolonged standing and is sometimes accompanied by stiffness. In more severe cases, the pain will also worsen toward the end of the day.

The plantar fascia is a thickened fibrous aponeurosis that originates from the medial tubercle of the calcaneus and runs forward to form the longitudinal foot arch. The function of the plantar fascia is to provide static support of the longitudinal arch and dynamic shock absorption. Individuals with pes planus (low arches or flat feet) or pes cavus (high arches) are at increased risk for developing plantar fasciitis.

Other anatomic risks include over pronation, discrepancy in leg length, excessive lateral tibial torsion and excessive femoral anteversion. Functional risk factors include tightness and weakness in the gastrocnemius, soleus, Achilles tendon and intrinsic foot muscles. However, overuse rather than anatomy is the most common cause of plantar fasciitis in athletes.

Plantar fasciitis also occurs in elderly adults. In these patients, the problem is usually more biomechanical, often related to poor intrinsic muscle strength and poor force attenuation secondary to acquired flat feet and compounded by a decrease in the body's healing capacity.

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On examination, the patient usually has a point of maximal tenderness at the anteromedial region of the calcaneus. The patient may also have pain along the proximal plantar fascia. The pain may be exacerbated by passive dorsiflexion of the toes or by having the patient stand on the tips of the toes. Diagnostic testing is rarely indicated for the initial evaluation and treatment of plantar fasciitis. Plantar fasciitis is often called "heel spurs," although this terminology is somewhat of a misnomer because 15 to 25 percent of the general population without symptoms have heel spurs and many symptomatic individuals do not.⁽¹⁴⁾

Heel spurs or a calcaneal spur is a small osteophyte (bone spur) located on the calcaneus. Calcaneal spurs are typically detected by a radiological examination. When a foot bone is exposed to constant stress, calcium deposits build up on the bottom of the calcaneum. Generally, this has no effect on a person's daily life. However, repeated damage can cause these deposits to pile up on each other, causing a spur-shaped deformity, called a calcaneal spur. Obese people, flatfooted people, and women who constantly wear high-heeled shoes are most susceptible to heel spurs.

As a rule, the longer the duration of heel pain symptoms, the longer will be the period to final resolution of the condition^(15,16) Initial treatment options, may include padding and strapping of the foot, oral anti-inflammatories,⁽¹⁷⁾ calcium, calcitriol and a corticosteroid injection localized to the area of maximum tenderness. Calcium and Magnesium are two minerals that help prevent the abnormal calcium deposits that cause heel spurs. Studies^(18,19) have found steroid treatments to have a success rate of 70 percent or better.

Patient-directed treatments appear to be as important as these approaches in resolving symptoms treatments include regular Achilles and plantar fascia stretching, avoidance of flat shoes and bare foot walking, cryotherapy applied directly to the affected part, over-the-counter arch supports and heel cups, and limitation of extended (high-impact) physical activities.

In our study we treated all these patients by life style modification, analgesics (as and when required) and calcium and calcitriol supplementation for 3 months.

Those patients in whom one foot is involved more with point tenderness persisted after 2 weeks of above mention treatment; we gave intra-lesion methyl prednisolone injection along with above mention treatment. We found 45.83% of patients respond to this treatment within one month, 70.83% respond within 3 months and 65.27% shows improvement even after 6 months. 72% patients in whom intra-lesion injection were given showed improvement.

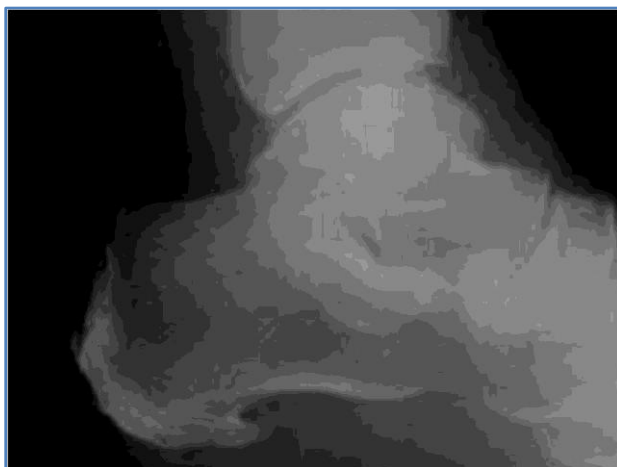
CONCLUSION: In our view, treatment of plantar heel pain should proceed in a stepwise fashion and, according to the patient's response, as follows. First, modify or suppress the alleged risk factors, give an NSAID, prescribe a stretching program for the Achilles tendon, and recommend orthotics such as heel pads. Calcium and vitamin D supplementation specially in peri menopausal women with bilateral heel pain. If these fail, give one or two local injections of a methylprednisolone. Our study demonstrates that calcium, calcitriol play very important role in the long term management of bilateral plantar heel pain especially in elderly female.

LIMITATION: It is a small study further large scale study required.

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