

Education-Family Physician Corner**Heel Pain and Plantar Fasciitis**

Amani Al Hajeri, MD, CABFM, IBFM, MSc, MG*

Heel pain is a common complaint and frequently encountered condition at the primary care physicians' clinics. It's estimated that one out of ten people will suffer from heel pain at least once in his/her lifetime. It has also been estimated that 2 million people will be treated each year for this complaint¹. Women tend to be affected slightly more than men, and the pain mainly affects people aged 30 to 50 years².

There are two challenges facing the physician, knowing the cause of pain and treating it successfully. As there are different tissues underlying the heel, it might be difficult to pinpoint the source of pain. Despite the different modalities of treatment, no single modality proved superior to another.

The aim of this concise review is to focus on heel pain with particular attention to plantar fasciitis and available treatment.

Diagnosis**• History Taking**

Careful history taking and physical examination will narrow the list of differential diagnosis. It is important to ask the patients about the site of pain, frequency, severity, aggravating and relieving factors. History of trauma or overuse (suggesting musculoskeletal injury) should be documented. Systemic causes are less common; however, you should ask about diabetes, rheumatic diseases and malignancies³.

• Physical Examination

Examination should start with inspection for any swelling, bony deformities, skin bruising or cut wounds. While palpating bony prominences, and tendon insertions close to the heel, look for tenderness or defects³. Look for restricted movement while passively moving the ankle and foot. Finally, ask the patient to walk and look for any abnormal gait³.

• Plantar Fasciitis

Plantar fasciitis is the commonest cause of inferior heel pain and affects active as well as sedentary adults of all ages. It mainly affects obese people or those who have limited ankle flexion⁴. The pain occurs because of repetitive degenerative damage to the plantar fascia⁴. It is

* Primary Care Consultant and Consultant Clinical Geneticist
Genetic Department
Salmaniya Medical Complex
Kingdom of Bahrain
E-mail: alhajeriamani@gmail.com

mainly diagnosed clinically. The patient usually present with inferior heel pain upon standing, the pain is often chronic and lasting for months or years. Pain is throbbing in nature, sometimes described as searing or piercing, especially when the patient steps out of the bed in the morning. The pain is relieved by movement but worsens with continued activity. Exacerbating factors are walking barefoot, on toes, or up stairs⁴. On examining the foot, the patient may have tenderness around the medial calcaneal tuberosity at the plantar aponeurosis and the pain increases with passive dorsiflexion of toes^{3,4}. If the pain is the result of plantar fascia rupture in case of athletes, the examiner may feel a palpable defect at the calcaneal tuberosity. It may also be accompanied by localized swelling and ecchymosis³.

Requesting X-rays should be reserved only for patients suspected of having other conditions. X-rays may show calcifications surrounding the heel or osteophytes on the anterior calcaneus (namely heel spurs)⁴. However heel spurs are not diagnostic as they are found in about 19% of normal people.

Management

Management of plantar fasciitis can be very challenging as no single modality has proven superior to the others.

- **Conservative Measures**

Physicians usually start managing plantar fasciitis with non-steroidal anti-inflammatory drugs (NSAIDs). However, there is not enough evidence confirming the effectiveness of the use of NSAIDs alone. Taping or strapping was also suggested by some, but no studies to provide solid evidence of their effectiveness³.

Custom orthotics and prefabricated shoe inserts such as those embedded with silicon or rubber proved effective for some patients especially combining it with stretching exercise, see figure 1⁵. A Cochrane review found a good level evidence for managing plantar fasciitis with custom-made foot orthoses⁶.

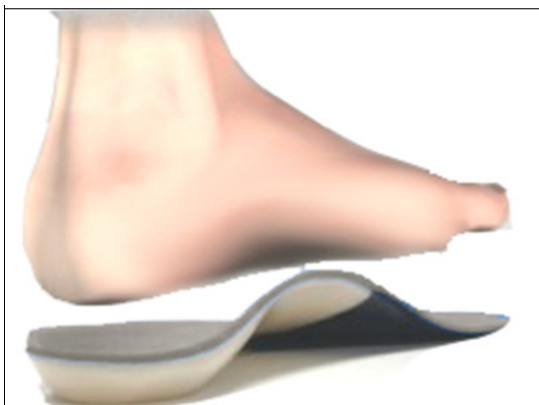


Figure 1: Custom-made Foot Orthoses for the Treatment of Plantar Fasciitis

Stretching exercise on its own has proved effective. It stretches the calf muscles and Achilles tendon or the plantar fascia itself, see figure 2⁷. The patient is instructed to cross the affected foot over the contralateral leg, while grasping the base of his toes he pulls the toes back towards the shin until he feels the arch of the foot is being stretched. The patient should

hold and stretch it and count to 10 then releases it. The exercise should be repeated 10 times each session, three sessions a day, see figure 2.



Figure 2: Stretching Exercise

- **Invasive Measures**

Corticosteroid injections have been described for managing plantar fasciitis. It has a short term benefit. However, one should bear in mind that steroid injections can also cause plantar fascia rupture. No studies found a long term benefit of steroid injections⁷. Extra-corporeal shock wave therapy is a recent modality for managing heel pain, claiming positive results. Unfortunately, no single trial proved that the claim is effective⁸. Casting the affected heel with fiberglass walking casts with the ankle in slight dorsiflexion and the toe plate in extension might have some positive effects. But no strong evidence to support its effectiveness was found⁹.

Plantar fascia release surgically through a transverse plantar incision is the last resort. There are some evidences to support this approach as almost 75 to 95 percent of patients had long-term improvement^{4,10,11}.

Potential conflicts of interest: No

Competing interest: None **Sponsorship:** None

Submission date: 24 June 2012 **Acceptance date:** 7 July 2012.

REFERENCES

1. Toomey EP. Plantar Heel Pain. *Foot Ankle Clin* 2009; 14(2):229-45.
2. Schumacher SA. Prevention and Treatment of Common Causes of Heel Pain. <http://www.footdoc.ca/www.FootDoc.ca/Website%20Arch%20Pain%20and%20Heel%20Pain.htm>. Accessed on 2.2.2012.
3. Aldridge T. Diagnosing Heel Pain in Adults. *Am Fam Physician* 2004;70(2): 332-8.

4. Cole C, Seto C, Gazewood J. Plantar Fasciitis: Evidence-Based Review of Diagnosis and Therapy. *Am Fam physician* 2005;72(11): 2237-42.
5. Pfeffer G, Bacchetti P, Deland J, et al. Comparison of Custom and Prefabricated Orthoses in the Initial Treatment of Proximal Plantar Fasciitis. *Foot Ankle Int* 1999;20(4):214-21.
6. Hawke F, Burns J, Radford JA, et al. Custom-made Foot Orthoses for the Treatment of Foot Pain. *Cochrane Database Syst Rev* 2008;(3):CD006801.
7. DiGiovanni BF, Nawoczenski DA, Lintal ME, et al. Tissue-specific Plantar Fascia Stretching Exercise Enhances Outcomes in Patients with Chronic Heel Pain. A Prospective, Randomized Study. *J Bone Joint Surg Am* 2003;85-A(7):1270-7.
8. Boddeker R, Schafer H, Haake M. Extracorporeal Shockwave Therapy (ESWT) in the Treatment of Plantar Fasciitis - A Biometrical Review. *Clin Rheumatol* 2001;20(5): 324-30.
9. Tisdell CL, Harper MC. Chronic Plantar Heel Pain: Treatment with a Short Leg Walking Cast. *Foot Ankle Int* 1996;17(1):41-2.
10. Davies MS, Weiss GA, Saxby TS. Plantar Fasciitis: How Successful is Surgical Intervention? *Foot Ankle Int* 1999;20(12):803-7.
11. Fishco WD, Goecker RM, Schwartz RI. The Instep Plantar Fasciotomy for Chronic Plantar Fasciitis. A Retrospective Review. *J Am Podiatr Med Assoc* 2000;90(2): 66-9.