

Plantar Fasciitis,

the Root of Most Heel Pain

Dennis Shavelson, D.P.M.

The key to understanding plantar fasciitis is that it develops because the plantar fascia, for many of us, is the weakest link in the postural chain.

Heel pain is the most common musculoskeletal complaint of patients presenting to podiatrists throughout the country, and plantar fasciitis (PF) is the most common cause for heel pain for which professional care is sought.

For every professional case, there are hundreds of cases that are cured short of a consultation.

Although the diagnosis of plantar fasciitis can be made using the internet, the variety and intensity of presentations of PF varies from first step soreness to life changing pain and disability. Some cases resolve with over the counter, non invasive care while others become a six month to one year nightmare needing multiple professional attempts at care in order to resolve the problem.

The key to understanding plantar fasci-

Patients with plantar fasciitis report increasing heel pain in daily standing and activity. They are often overweight and possess unhealthy inherited foot type mechanics. Secondarily, poor workout habits and old or faulty shoe gear and foot beds are often exposed as possible places to adjust when treating PF.



itis is that it develops because the plantar fascia, for many of us, is the weakest link in the postural chain; and when it is overstressed by daily life and activity, it breaks down under the strain of foot type-specific arch collapse forcing the person to reduce activity and lifestyle or seek treatment.

The plantar fascia is a ligament that goes from the big toe side of the bottom of the heel bone forward to the five metatarsal heads. Not unlike the string of a flexible bow, the PF shock absorbs and provides stability and support of the arches of the foot via tension. When overstressed, the ligament primarily strains the heel bone at its insertion on the big toe side of the bottom of the heel.

Diagnosis

The most prevalent symptom of plantar fasciitis is the presence of heel pain on the sole of the foot when taking the first steps after a night's sleep or after long periods of inactivity. Early on, the pain reduces after a few minutes but eventually the pain can increase with continued activity to the point of disability. A bony heel spur may grow in reaction to stretching of the plantar fascia but 90 percent of spurs seen on x-ray are not associated with heel pain.

Other less common sources of heel pain may be Achilles tendonitis (back of the heel) and tarsal tunnel syndrome (tingling, shooting and burning heel and sole pain) and are treated differently than PF.

More and more professionals are of the opinion that PF should be treated non-surgically for at least six months by attacking underlying abnormal biomechanics, weight

Poor workout habits and old or faulty shoe gear and foot beds are often exposed as possible places to adjust when treating PF.

Foot types

Simply put, most people who develop plantar fasciitis have one of two functional foot types. They either have a strong and stable arch when standing that strains the plantar fascia when stretched (the rigid rear foot/rigid forefoot foot type) or they have a strong and stable rear foot with a flexible, collapsible forefoot that puts great strain on the plantar fascia as the arch of the foot collapses as the front of the foot holds weight (the rigid rear foot/flexible forefoot foot type).

A common misconception is that rear foot pronation or collapse (the flexible rear foot types) is the root cause of PF. In fact, although it produces many ligamentous and tendon strains true "pronation" is only rarely associated with PF.

Biomechanically, removing strain from the plantar fascia by shock absorbing the heel and providing support for the natural vault of the foot with material reduces the strain of the plantar fascia and should be the foundational treatment for heel pain.

reduction, activity modification, and physical therapy using treatments such as injection therapy, oral anti-inflammatory medication, and stretching and OTC orthotics.

Treatment

The goal of treatment for PF should be the elimina-



Less common treatments

If all else fails, shock wave therapy, plasma rich protein therapy, and surgical release of the ligament (EPF) offer more expensive and invasive treatment for resistant cases.

Extracorporeal Shock Wave Therapy (ESWT) devices generate pulses of high-pressure sound that travel through the skin. They create an inflammatory reaction in the soft tissue and bone that allows them to heal back stronger. These treatments are expensive, often not covered by insurance, and often require general anesthesia as part of the treatment.

One of the cells present in blood is called the platelet. We have learned that when activated in the body, platelets release healing proteins called growth factors. These growth factors accelerate tissue and wound healing. In Platelet Rich Plasma Therapy, a patient's own blood is removed and the platelet count is concentrated, activated, and re-injected at the site of injury to deliver a powerful cocktail of growth factors that can dramatically enhance tissue recovery in insertion tendon problems. Like ESWT, this treatment is expensive and currently not covered by many plans.

Endoscopic Plantar Fasciotomy (EPF) is a minimally invasive surgical treatment for chronic plantar fasciitis. This procedure is indicated for the release of the proximal medial aspect of the fascia in cases that do not respond to nonsurgical treatment. EPF is recommended as the surgical procedure of choice when conservative treatment measures have been exhausted but as a complication, it may weaken the fascia as part of the procedure.



PF should be treated non-surgically for at least six months.

tion of pain and disability while maintaining or improving activity.

The treatment of plantar fasciitis differs widely because there are so many possible reasons why it develops. It would be safe to say that plantar fasciitis would eventually be cured with reduction or elimination of activity but that would leave the person with a permanently poorer quality of life.

Arch taping, injection therapy, orthotics, heel cushions, changing or modifying shoes, night splints, stretching programs, physical therapy and anti-inflammatory medication can treat the symptoms of plantar fasciitis both at home and professionally. Information on all of these modalities is available on the internet.

Foot type-specific custom foot orthotics offer the best (although expensive) short and long term treatment for plantar fasciitis because they focus on repairing unhealthy biomechanics and treat a lot more than the PF. They are shorter, narrower, and higher arched than many custom orthotics and require a functional foot typing, special casting and prescribing in order to start the custom process.

The goal of treatment for Plantar Fasciitis should be the elimination of pain and disability while maintaining or improving activity.

The need for the compensation of underlying biomechanical pathology, weight control, and selection of activities that reduce the stress upon the ligament as the core of care for PF cannot be overemphasized.

Dr. Dennis Shavelson, DPM is attending podiatrist at Beth Israel Medical Center, and also medical director of The Foot Typing Center in New York City.

