PE CHECKLIST

Plantar fasciitis

Diagnosis rests with the history and physical

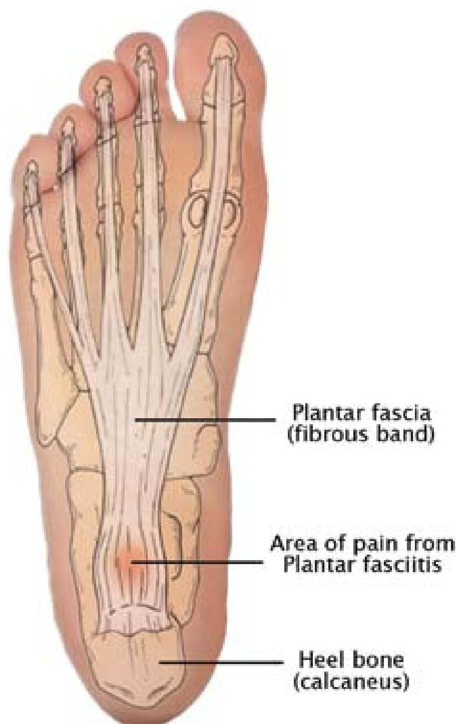
by Leslie Goldenberg, MD

Plantar fasciitis is by far the most common cause of plantar heel pain, especially in young runners, post-partum women and people who stand for long work hours on hard surfaces in pumps or poorly supportive footwear. Peak incidence is in overweight individuals aged 40-60 years. Bilateral involvement is common. In 20% of cases, pain will persist for more than a year if left untreated.

The hallmark of this ligamentous strain is subcalcaneal pain from fibre stretching at the plantar fascial enthesis upon first arising and bearing the body's weight. This typically improves with walking (patients may hobble for a few steps or for up to several minutes).

Tenderness is maximal with examining thumb pressure at the anteromedial calcaneus. The loaded gun is usually an overpronated (pes planovalgus) foot, while the trigger is pulled by weight gain. The stress on the fascia (as bowstring of the pedal arch) exceeds the tensile strength of this, the body's largest ligament. Bone, joint, muscle or nerve pain tends to worsen with more weight bearing. The typical clinical picture is diagnostic, and radiographs (which may show a heel spur or fascial enthesophyte) and ultrasound (which may show fascial thickening) are warranted only in atypical scenarios.

Leslie Goldenberg, BSc, MD, FRCP, ABIM, FAGS, specializes in Internal, Geriatric, Podologic and Lower Extremity Medicine at the Faculty of Medicine, University of Toronto. He is also Medical Director of Walking Mobility Clinics, Richmond Hill, ON.



Typical profile of a fasciitis patient

- The vast majority are overpronators
- Mostly overweight women
- Male athletes or labourers
- Tight heel cords with restricted ankle dorsiflexion
- Transient plantar heel pain on first arising

Key features to look for and inquire about

- Obesity or recent weight gain of 2-4½ kg
- Footwear
  - ☐ too flexible
  - ☐ pumps, soft slip-ons, loafers
  - ☐ shoes collapsed under arch or lack support
- Recent pregnancy or beach-walking

Short-term management

- Gastrosoleus (calf) stretching
- Ankle joint mobilization and release
- Plantar fascial stretching
- Deep enthesis massage with ice anesthesia
- Medial calcaneal corticosteroid injection
- Pronation-controlling, arch-supporting shoes
- Arch-supporting orthopedic sandals at home
- over-the-counter arch supports

Long-term management

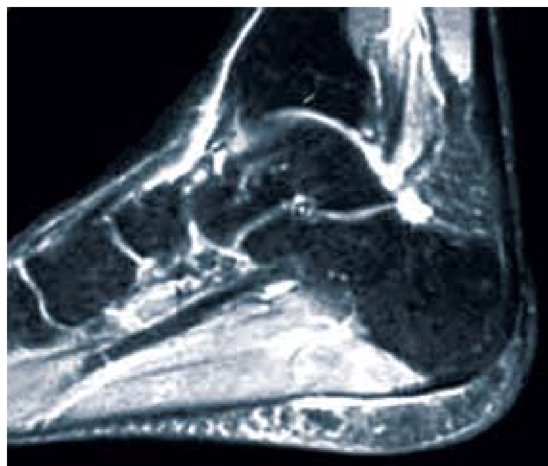
- Weight loss of last two years' gain
- Custom foot orthoses

Strategies for refractory patients

- Nocturnal posterior tension splints
- High intensity shockwave (the role is controversial)
- Low intensity shockwave (office procedure)
- Surgical fascial release (almost never required)
- Oral and topical NSAIDs — usually of limited benefit
- Acupuncture, TENS and ultrasound: no benefit

Differential diagnosis of plantar heel pain

- Subcalcaneal bursitis is tender directly under the heel with trauma or in elderly with wasted fat pad
- Tender subcalcaneal fat pad
- Calcaneal stress fracture is tender with heel compression (squeeze test)
- Severs' traction apophysitis is painful posteriorly in jumping children age 10-13
- Bilateral with back pain and fluffy enthesitis suggest Reiter's, psoriasis, ankylosing spondylitis
- Neuropathic pain along the arch suggests tarsal tunnel tibial nerve entrapment
- Burning late-day heel and arch pain suggests plantar nerve entrapment syndromes
- S1 radiculopathy rarely refers pain just to the heel
- Plantar fascial rupture is acute, searing and more distal, unilateral
- Osteomyelitis must have associated ulcer
- Paget's, cancer and osteoid osteomas may have nocturnal and non-weight-bearing pain



MRI of plantar fasciitis. The classic signs are perifascial edema, especially where the fascia anchors to the calcaneum, and thickening of the fascia just in front of the calcaneum.

What's in a name?

Sometimes called "heel spur syndrome," plantar fasciitis isn't inferior calcaneal exostoses, but incidental findings on x-rays add to the label confusion