

Clinical Tests For Plantar Heel Pain

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Introduction

Plantar heel pain is one of the most common conditions seen in the podiatry clinic. It is important to be aware of the local anatomy and possible aetiologies of plantar heel pain.

Anatomy

Anatomically the inferior surface starts with the plantar surface of the calcaneus, consisting of a major weight-bearing elevation, known as the *calcaneal tuberosity*. The plantar calcaneal tuberosity is divided into a large medial process and a smaller lateral process, which are the sites for the attachments of the plantar aponeurosis and plantar intrinsics.

The postero-medial aspect of the inferior calcaneus is therefore the attachment point for the plantar aponeurosis, a strong band of fibres that take part in the support of the longitudinal 'arch' of the foot and help facilitate the terminal stance phase of gait.

The plantar aponeurosis divides into three bands, the central band (known as the plantar fascia) and the medial and lateral bands, which are separated by intermuscular septa. The plantar fascia divides into five slips that attach to the proximal phalanges, and distal soft tissues.

Other soft tissues on the plantar heel are; a bursa, the specialised plantar fat pad the neurovascular structures and the skin. The subcalcaneal bursa is found inferior to the calcaneal tuberosity, and the fat pad inferior to the bursa, and therefore, under the skin.

DIAGNOSIS

A diagnosis should be made on the basis of history and clinical examination. If diagnosis unclear or the condition persistent, a soft tissue ultrasound scan is recommended in the first instance. MRI scanning is recommended in cases with atypical symptoms (*e.g. acute onset, night pain, pain or tenderness medial lateral sides, pain proximal to insertion, significant swelling, neurological signs or symptoms*) or unresponsive to appropriate management.

Starting with the most common conditions:

- Plantar fasciitis (fasciosis) (terminal stance phasic pain)
- Sever's (age 9-14).
- Medial calcaneal nerve entrapments.
- Calcaneal oedema (bone marrow lesion).
- Plantar fascial tears
- Subtalar Joint Degeneration.
- Proximal Plantar Intrinsic Muscle Strains.
- Plantar fat pad atrophy (contact phasic pain)

- Referred pain or radiculopathy. (Non-weight bearing/ night pain).
- Baxter's neuroma.
- Enthesitis. (e.g. psoriatic arthritis/ Reiters/ Ankylosing spondylitis)
- Insufficiency fracture of the calcaneus.
- Neoplasm (e.g. osteosarcoma/ osteoid osteoma).

CLINICAL EXAMINATION

1. History: Age of patient nature of symptoms (night pain, non-weight bearing pain).
2. STJ range of motion.
3. Squeeze test (medial & lateral palpation).
4. Palpation of the plantar calcaneal tubercle.
 - locating the medial process.
 - locating the distal, central and proximal.
5. Medial calcaneal nerve.
6. Location of Baxter's neuroma.