Posterior heel pain

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Abstract

Heel pain is widely perceived to be a minor ailment that usually runs a self limiting course. This is not always the case however, and a proportion of the millions of people affected each year will suffer chronic symptoms. Heel pain can be broadly classified as posterior or plantar heel pain. Posterior heel pain may be from non-insertional or insertional Achilles tendon problems, or occasionally due to pathology of the surrounding structures. Most sufferers will improve with a combination of time and proper stretching regimens. A proportion of patients, however, have resistant symptoms which can be difficult to manage and require operative treatment. This article, focussing on posterior heel pain, offers a pragmatic approach to assessment and management.

Keywords Achilles; Haglund; insertional; non-insertional; tendinopathy

Introduction

Heel pain, whether from Achilles tendon problems or plantar fasciitis, is prevalent, affecting millions of people each year. Although commonly perceived to be a mild ailment that will get better of its own accord, this is not always the case. Most cases of heel pain improve with time and a sensible stretching programme. There is however a proportion of patients with resistant symptoms who pose a management challenge and may occasionally require surgical treatment.

Heel pain can be classified as either posterior or plantar.[1] Posterior heel pain most commonly arises from the Achilles tendon. Achilles tendinopathy is associated with sporting activity and is thus becoming increasingly prevalent as people continue to exercise into older age.[2] This article focuses on posterior heel pain and its management and does not include plantar heel pain.

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Acute or missed rupture of the Achilles tendon is not included either, although a missed Achilles rupture may present with symptoms similar to those of tendinopathy.

Pathology

Non-insertional Achilles tendon pathology predominates over the less common insertional variety. Like tendinopathies elsewhere in the body, the substance of the tendon displays degenerate change and there may be associated thickening of the paratenon. Modern research emphasises that the degenerate changes seen in cases of tendinopathy are attributable to a "failed healing response," rather than an acute inflammatory process.[3]

At its insertion to the middle third of the posterior surface of the os calcis the Achilles has a transitional zone consisting of: tendon, fibrocartilage, mineralised fibrocartilage and finally bone. This arrangement is considered to afford a means of force dissipation. The posterior surface of the os calcis immediately proximal to the tendon insertion is covered by fibrocartilage and closely related to the tendon. The normally small retrocalcaneal bursa occupies this potential space between tendon and bone. Between the distal Achilles tendon and the skin there is another bursa called the superficial or retroachilles bursa (Figure 1).

The term Haglund's deformity is commonly used to descried a large postero-superior margin of the calcaneal tuberosity, also known as the bursal projection.[4,5] This bony protuberance can cause impingement of the anterior surface of the tendon and result in retrocalcaneal bursitis or degenerative changes in the tendon itself. Occasionally calcification arises within the central portion of the tendon itself, or a spur (enthesophyte) may be seen arising from the posterior surface of the os calcis.

It is important to recognize that many patients with insertional Achilles pain have a mixture of pathologies, although one may predominate.

Terminology

Maffulli proposed a logical system (Table 1) for describing Achilles tendon pathologies, which clarified the terminology and reduced the use of many terms that had previously confused the literature. The term Achilles tendinopathy describes the triad of pain, swelling and impaired function.[6] The intrasubstance pathology seen in chronic tendinopathy is of necrosis and mucoid degeneration (the "failed healing response") and there is no inflammatory response, which would be normally characterised by granulation tissue histologically. Thus the term tendinitis should be abandoned.[3]

Demographics

Although Achilles tendinopathy is known to be common, reliable epidemiological data is not available.[7] An overuse phenomenon is inferred by the association with sports and athletic training. Symptomatic non-insertional tendinopathy is four times more prevalent than symptomatic insertional tendinopathy. Age is also a factor, with Achilles pain demonstrating a lower incidence in young athletes compared to older individuals participating in the same sport. In addition, older athletes have a higher prevalence of insertional tendinopathy than their younger counterparts.[8]

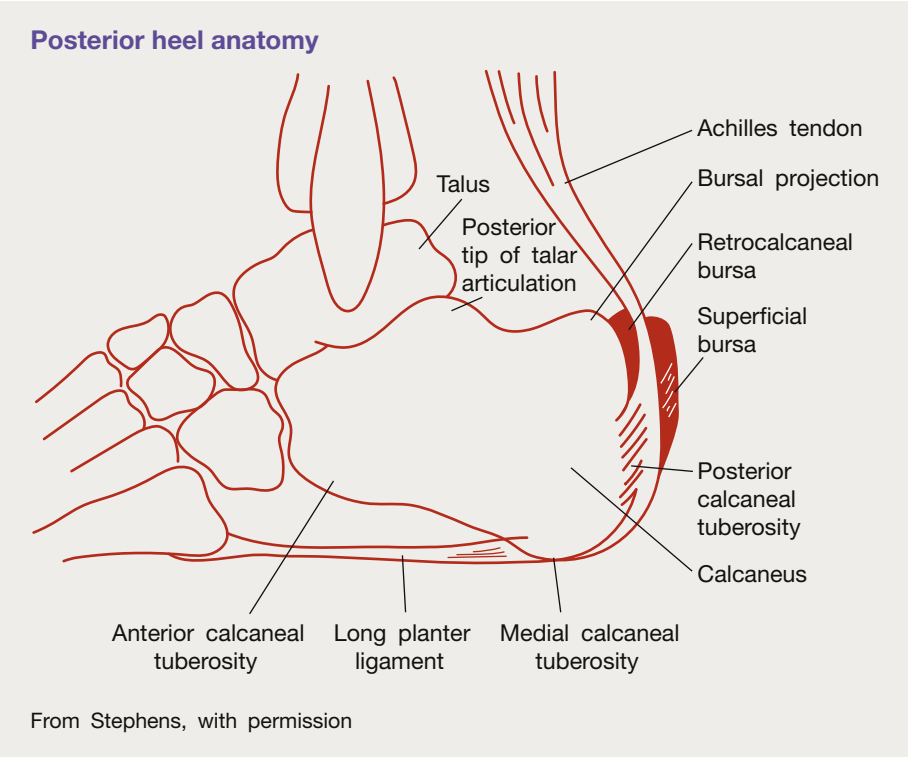

Figure 1

Clinical presentation

History

Pain is the primary symptom, most commonly affecting the first steps in the morning after a period of rest and can be described as 'start up' pain. Classically this initial period of painful stiffness subsides with gentle activity, but frequently returns after exercise. Inability to walk long distances and reduced exercise and sports participation are other common complaints.

There is rarely a discrete episode that a patient can attribute to the onset of the symptoms (except in cases of missed rupture), but there is commonly a history of altered activity levels, new sports footwear, increased body weight (including pregnancy) or alteration in working pattern requiring longer periods of standing. In chronic cases the nature of the pain and its radiation is important.

Nomenclature in Achilles tendon pain (Maffulli et al.)

Terminology of Achilles tendon pain

Clinical

1 Tendinopathy — pain, swelling and impaired function
2 Paratenonopathy — affects paratenon
3 Paratendinopathy — affects both tendon and paratenon

Histological

1 Tendinosis — mucoid degeneration and collagen disorganisation
2 Paratenonitis — hyperaemia and inflammatory cells. Fibrosis and thickening. More common in younger patients

Table 1

The duration of symptoms is important, as the vast majority of cases are self-limiting and little active intervention is required for those cases of recent onset. Conversely chronic cases often need more input, particularly when appropriate first line treatments have been tried and failed. It is well accepted that there is an association between adverse biomechanics, particularly isolated gastrocnemius tightness, and heel pain. One should also therefore enquire regarding symptoms of other conditions associated with gastrocnemius tightness, including plantar fasciitis, posteromedial pain and swelling with an acquired flat foot, previous medial gastrocnemius calf muscle tear (tennis leg), forefoot overload, hallux valgus, difficulty wearing flat shoes and calf cramps.

Clinical examination

A limp is often observed in moderate or severe cases. There may be a raised body mass index which is frequently associated with chronic cases in non-athletes. Planovalgus foot posture is more common than "normal", reflecting the association of heel pain with calf contracture. Similarly difficulty heel walking and a positive Silfverskiöld's test may confirm and quantify the gastrocnemius contracture. For accurate interpretation of Silfverskiöld's test the foot must be held with the talonavicular joint reduced. Failure to appreciate this may result in a false negative test as the heel escapes into valgus, masking the gastrocnemius contracture by shortening the distance between the knee and heel.[9] Pulses and sensation must always be checked. If an atypical cause for the pain is suspected from the symptoms then a full lumbar spine and neurological assessment is required, particularly looking for signs of radiculopathy. A positive heel squeeze test should raise suspicion of a calcaneal stress fracture.