



PRACTICE

10-MINUTE CONSULTATION

Pain at the back of the heel

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A 41 year old man complains of longstanding pain at the back of his left heel and stiffness when he gets up. The pain is worse when he plays tennis. He asks for advice on what it is and what can be done.

Pain at the back of the heel arises from a limited number of anatomical structures: the Achilles tendon, the calcaneal bursa, or the surrounding soft tissues (fig 1⇓). This limits the likely differential diagnoses. Achilles tendinopathy is the most common cause of posterior heel pain.¹ Its incidence is estimated at 1.85 per 1000.² It is also important to note that Achilles tendinopathy may underlie other pathologies, particularly partial tears of the Achilles tendon.³

What you should cover

Take a history

Begin by understanding the pain: see table 1⇓ and figure 1⇓ for posterior heel pain differential diagnoses.

Ask about symptoms suggestive of inflammatory arthritis, such as ankylosing spondylitis.⁵ Comorbidities, such as type 2 diabetes and increased body mass index, are also associated with tendinopathy.^{2,6} Other biomechanical risk factors (which are likely to be modifiable) include decreased ankle dorsiflexion, pes planus, and increased hindfoot inversion.^{3,7}

Review what medication the patient is taking because drugs can sometimes be associated with tendinopathy, including acute use of a quinolone and long term use of statins (mean time for onset of symptoms is 10 months).⁸ A family history of tendon problems can increase the risk up to five times.⁴

Examine the patient

Lie the patient prone. Look at and palpate the tendon. Note thickened tendons compared to the other side, which may indicate tendinopathy.^{3,5} Note tenderness, and in particular pin-point tendon pain that makes a partial Achilles tear more likely. In retrocalcaneal bursitis there may be swelling and tenderness on direct palpation of the bursa.⁵

Establish if there is any crepitus present along the mid-portion of the Achilles tendon—again suggestive of Achilles tendinopathy.

Passively flex the foot to see whether the pain worsens on dorsiflexion or plantarflexion, to distinguish Achilles tendinopathy from posterior ankle impingement.⁴ Perform Simmond's squeeze test, palpate for a gap in the tendon structure, and observe if there is more dorsiflexion of the affected side to ensure there is no Achilles rupture.

Ask the patient to hop. If this reproduces the pain, it indicates Achilles tendinopathy.³

Overall there are no formalised criteria for diagnosing Achilles tendinopathy. It is a clinical diagnosis, and most of your information comes from the history.

What you should do

Refer to the on-call orthopaedic team if an Achilles tendon rupture is suspected. If you suspect a tear, refer to a sports physician or orthopaedic team.

Consider an ultrasound scan if the diagnosis remains unclear to assess posterior ankle structures.⁴ Be aware that imaging may identify incidental, asymptomatic pathology such as tendinopathy on the non-painful side.

If Achilles tendinopathy is the working diagnosis, explain to the patient that symptoms may persist for up to two years despite treatment.⁴ Sedentary and active people may develop symptoms. Males and females are affected equally.² It is most common between 41 and 60 years of age.² Evidence on how best to manage this condition is poor and driven by opinion. The NICE clinical knowledge summary⁹ suggests that doctors might offer:

- Simple analgesia (such as non-steroidal anti-inflammatory drugs for up to two weeks)
- Reduction in precipitating activities (complete rest may make things worse).

What you need to know

- Achilles tendinopathy is the most common cause of chronic posterior heel pain
- Achilles tendinopathy is a clinical diagnosis and imaging is not needed unless there is diagnostic uncertainty
- Eccentric calf muscle exercises are the traditional means of strengthening the Achilles tendon

Consider a self directed daily programme of Achilles tendon strengthening exercises. There is little consensus over the type of exercises or the duration.⁹ Calf muscle eccentric exercises are the traditional first line exercises (see fig 2), but heavy slow resistance training, combining eccentric-concentric isotonic loading, may be as effective, with most participants having a significant decrease in pain and improvement in function after 12 weeks of conservative therapy.⁴⁻¹⁰ Eccentric exercises are easier to demonstrate to your patient. Advise your patient to wear shoes when doing the exercises and suggest online videos to aid with exercise technique, such as www.youtube.com/watch?v=M6EKuuZ7C2E. Referral to physiotherapy for biomechanical assessment and a more intensive exercise programme can be considered.⁹

Suggest rest from activities that exacerbate symptoms. Continue non-weight bearing activity, such as swimming, to maintain cardiovascular fitness. The severity of the symptoms will guide return to normal activities. If symptoms continue after 3-6 months despite the above measures, consider referral to a sports physician or orthopaedic surgeon.

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Education into practice

- Discuss referral if there has been little improvement in symptoms of Achilles tendinopathy after 3-6 months.

Further clinical guidelines

- Orthopaedic Section of the American Physical Therapy Association: www.jospt.org/doi/pdf/10.2519/jospt.2010.0305

Patient information

- Patient.co.uk. Achilles Tendinopathy. <http://patient.info/health/achilles-tendinopathy>
- Department of Sport and Exercise Medicine. Achilles tendinopathy: advice and management. www.ouh.nhs.uk/oxsport/information/documents/leaflet_achilles_a5.pdf

Table

Table 1 | Posterior heel pain differential diagnoses

Pathology	Characteristic history
Achilles tendinopathy (mid-tendon)	<ul style="list-style-type: none"> • Chronic dull ache along the Achilles tendon • Pain classically 2-6 cm above the calcaneus • Gradual onset • Worsens with activity • Morning pain and stiffness are characteristic • Pain worsens on dorsiflexion^{3,4}
Insertional Achilles tendinopathy	<ul style="list-style-type: none"> • Pain around the calcaneus
Retrocalcaneal bursitis	<ul style="list-style-type: none"> • Pain between calcaneus and tendon • Tender to direct palpation at that particular point^{4,5}
Posterior ankle impingement	<ul style="list-style-type: none"> • Pain worsens on plantar flexion⁵
Partial tear of Achilles tendon	<ul style="list-style-type: none"> • Sudden localised pain on background of longstanding pain in Achilles tendon³
Achilles tendon rupture	<ul style="list-style-type: none"> • Achilles tendon rupture is unlikely when a patient presents with chronic pain

Figures

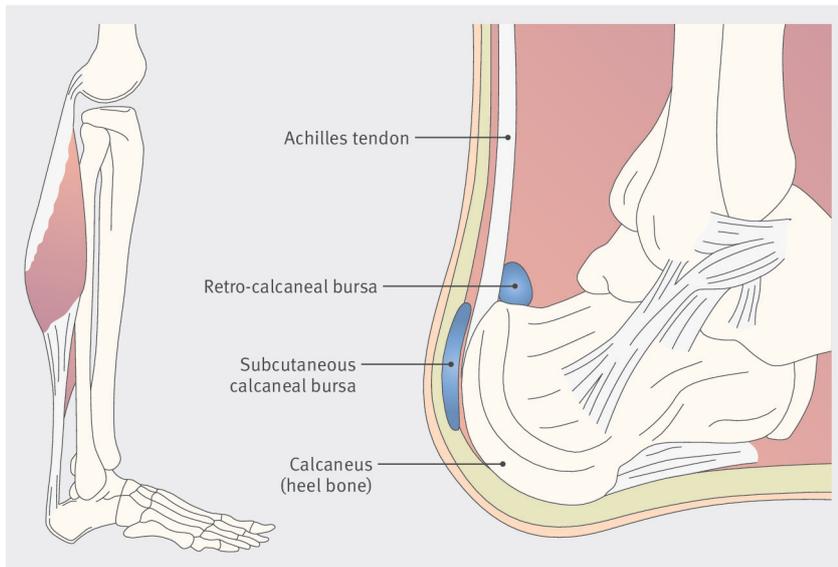


Fig 1 Anatomy of the heel

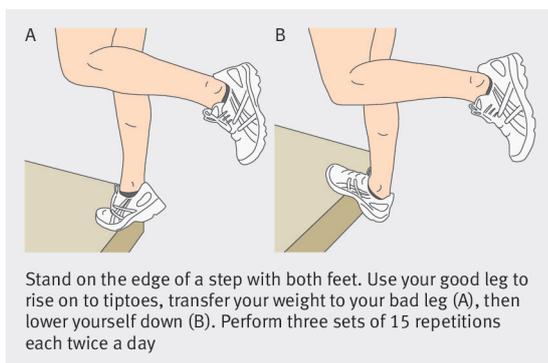


Fig 2 Performance of calf muscle eccentric exercise: unilateral heel drops (adapted from Nuffield Orthopaedic Centre. *Achilles Tendinopathy: Advice and Management*. 2009. www.ouh.nhs.uk/oxsport/information/documents/leaflet_achilles_a5.pdf)