Management of
Achilles tendonitis or rupture

By Mr Ian Skinner FRACS, Orthopaedic Surgeon, St John of God Murdoch. Tel 9311 4800

A painful Achilles tendon or an Achilles tendon rupture is an injury that can be managed in the general practice setting. Whilst it is unusual to require surgery for Achilles tendonitis, not all patients with a ruptured Achilles tendon require surgery.

Grading

Achilles tendonitis is characterised by inflammation and pain and can be graded as:

Grade I (mild strain) - Although there is microscopic tearing, there is no obvious tearing of the tendon clinically. There is no loss of strength and the tendon is at its correct length.

Grade II (moderate strain) - Tearing of the tendon fibres has occurred within the body of the tendon or at its origin or attachment so that the length of the tendon/whole muscle-tendon-bone unit is increased. There is usually decreased strength.

Grade III (complete rupture) - Less frequent disruption of the tendon/calcaneum unit.

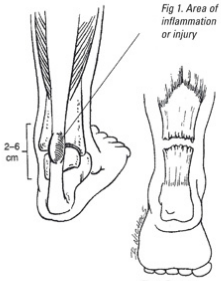

Fig 1. Area of inflammation or injury

Fig 2. Rupture

Signs and symptoms

All grades show:

- Pain, tenderness, swelling, warmth and erythema over the posterior Achilles tendon region
- Pain with ankle motion (especially when forcibly plantar flexing)
- Crepitus (especially during movement of the muscle ankle unit)

Grade III (disruption). Classically, with a complete disruption, the patient reports, "I thought someone threw a brick at me and hit me in the heel". Bruising is more common with complete disruption.

Aetiology

A sudden increase in the amount or intensity of activity or overuse are classic causes.

A direct blow or injury to the region of the Achilles tendon.

Previous injury. Intra tendon steroid injection can lead to disruption. Untreated tendonitis can also be a precursor.

Risk increases with

- Sports requiring sudden explosive calf contraction, such as squash or basketball
- Running sports
- Poor physical condition
- Inadequate warm-up

Clinical tests (grade III)

Simmonds test. This is useful in diagnosis. The patient is placed supine with the foot draped over the end of the examination couch and calf muscle is squeezed. In a disrupted tendon, the foot fails to move or if it does move, it moves significantly less than the adjacent foot with the same manoevre. (Some movement can occur due to maintenance of the plantaris muscle tendon).

A palpable **defect** can be noted within the substance of the Achilles tendon.

General treatment guidelines

Grade I or grade II

Initially treatment consists of RICE (rest, ice, compression and elevation). The use of a cold pack, together with a firm bandage and rest with the leg elevated (above the level of the heart) is usually helpful.

For significant pain, a walking cast or removable walking boot may be useful. For less severe discomfort, a heel raise (1cm) may be helpful.

Regular paracetamol, occasionally with an anti-inflammatory, helps relieve pain.

After the initial pain has settled, initial mobilisation (stretching and strengthening) can commence. This is started gently and is increased with repetitions and duration, as symptoms permit. Often, a physiotherapist can guide the patient at this time, but this is by no means essential.

Grade III (complete disruption).

This injury can be treated very well non-operatively. In addition to symptomatic measures above:-

Use a walking cast. This is one of the rare occasions when a walking cast is placed with foot in a downward position (plantar grade). The position of the foot in a plaster cast is that adopted by the foot with the patient seated and the leg hanging over the side of the bed. Use a good walking heel in a cast for eight weeks and then change the cast with the foot positioned just short of neutral for a further two weeks (10 weeks in plaster).

Boots designed to allow the foot to be placed in a plantar grade position are available (approx $180 each) and many patients prefer these, although if they use such a boot, they should leave it on 24/7 for 4 weeks, lest the tendon take too long to heal. (After this time, taking it off for showering is OK.)

Post plaster therapy

After the boot/plaster has been removed, physiotherapy is helpful, as noted in grade 1 above.

It will be approximately nine months before a patient with a complete disruption of the Achilles tendon is able to undertake any sport, such as squash. The patient should be warned of this at the outset.

If a patients' progress is not as expected, then it is reasonable to refer for review.

Surgical treatment (Grade III)

If a patient chooses surgery, approximation of the disrupted tendon will shorten the time in plantar grade plaster/walking boot by approximately three weeks and reduce the risk of re-rupture from 15% to 10% (non operative treatment).