

Persistent pain after an ankle sprain represents a difficult clinical problem with patients often presenting late to their General Practitioner. This article explores causes of persisting ankle pain and its management.

Ankle injuries managing the persistently painful sprain



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What are the ligaments of the ankle?

The ankle has three main ligaments- the lateral ligament, the medial deltoid ligament and the syndesmotic ligaments. (Fig 1) The horizontal anterior talofibular ligament, part of the lateral ligament complex, is most commonly injured and is palpated by starting at the tip of the fibula and moving anterior while applying an inversion or inwards twist to the ankle.



Figure 1

How useful is clinical examination of the acute sprain given most of the ankle seems to hurt?

The ligaments of an acutely swollen ankle are difficult to assess. It is worth checking the medial ligaments as medial tenderness is associated with a fracture. Two other bony landmarks that should be palpated include the base of the 5th metatarsal and the proximal fibula, as both are also fractured by an inversion injury. A high fibula fracture may be the final result of a twisting force that has torn all the ligaments and the interosseus membrane holding the tibia and fibula together.

When should we worry about an ankle sprain?

In an acute injury, excessive pain, deformity and the inability to weight-bear are indications for an x-ray. Most sprains can be adequately managed by RICE- Rest, ice, compression and elevation. Pain and swelling persisting beyond two weeks may be from a more severe soft tissue injury, a missed fracture or joint cartilage damage. These patients may benefit from referral to an Orthopaedic Consultant.

How does physiotherapy help in persistently painful ankle sprains?

Physiotherapy is the first step in restoring patient's confidence and stability in their ankles. Local modalities help control swelling while functional rehabilitation strengthens muscles around the ankle that can replicate some of the function of the ligaments. Balance exercises such as the wobble board teach patients to recruit these muscles when they feel their ankle is giving way.

What is ankle instability and why is it important?

A patient may fall over if their knee is unstable. In the ankle, however it is more subtle. It may just be that they experience pain on exercise or lack confidence when walking in certain shoes or on uneven surfaces, feeling happier indoors than in a park or on the golf course.

Recurrent sprains restrict recreational activities and they are at a high risk of cartilage damage and arthritis in later life. Unlike the hip or knee, most ankle arthritis is a direct result of trauma.



CONSULTANT PROFILE

Mark Ho-Asjoe qualified from the Royal College of Surgeons in Ireland in 1989. After finishing his housemanship, he began his training in surgery and won the first prize gold medal in the Part I examination of the FRCS.

His early basic surgical experience started at St Mary's Hospital, London, followed by specialist training in Plastic Surgery at Mount Vernon Hospital. After further training at St Andrew's Centre for Plastic Surgery and two years spent in basic science research, Mark began his higher surgical training in Plastic Surgery in the Pan London rotation.

In 2001, Mark furthered his training in oncological and microsurgical reconstruction at the world renowned centre, Chang Gung Memorial Hospital in Taiwan, one of the biggest microsurgical reconstructive Plastic Surgery centres in the world. His training in both microsurgery and Asian aesthetic surgery continued at Queen Mary's Hospital, Hong Kong, where he was appointed as Honorary Clinical Associate before returning to the UK. The completion of his Plastic Surgery Specialist training in 2002 was complemented by an aesthetic fellowship at the Wellington Hospital.

In 2003, Mark was appointed Consultant Plastic & Reconstructive Surgeon at St Thomas' Hospital, London with a special interest in microsurgery and breast reconstruction. His other interests are in lower limb trauma and aesthetic surgery.

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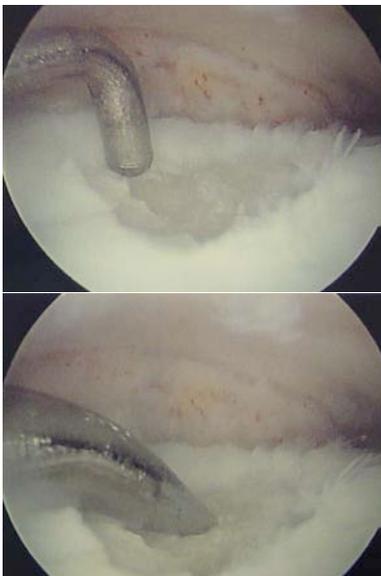


Figure 2



Figure 3



Figure 4

When do I operate for ankle instability and what does surgery entail?

Surgery is considered when after non-operative treatment, usually in the form of physiotherapy or bracing has failed to improve the patient's symptoms. Further investigation with an MRI is useful to exclude other causes of ankle instability or pain.

Significant joint pathology such as cartilage defects or excessive scar tissue can be treated arthroscopically. At surgery the lesions are debrided and the hard subchondral bone is 'micro fractured' with a pick. This causes inflammation and bleeding which stimulates protective junk cartilage formation (Fig 2).

My lateral ligament reconstruction of choice is a Brostrum procedure. In this the remnant of anterior talofibular ligament and calcaneofibular ligament are detached from the bone with a cuff of tissue (Fig 3). They are advanced and reattached in a bony groove (Fig 4). This tightens the ligament and treats the instability.

Figure 2
 The lateral ligament complex of the ankle. The upper arthroscopic image shows a large osteochondral defect of the talus after debridement. This is treated with microfracture (lower image) to stimulate bleeding in the local bone and laying down of scar tissue.

Figure 3
 The first stage of the Brostrum lateral ligament reconstruction involves taking of the ATFL and CFL as a thick cuff off the bone.

Figure 4
 A bone channel is made in the distal fibula. The cuff of tissue which includes the ligament is now advanced, reinforced and reattached. This treats the instability.