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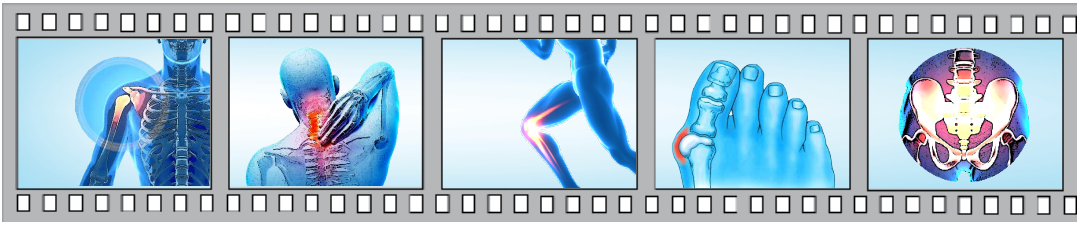
Persistent Ankle Instability After Ankle Injury



Summary

Ankle instability is a common problem following ankle sprain. Ankle sprains are common, and, because many are minor, both patients and medical professionals may overlook the seriousness of severe ankle ligament injuries, dismissing them as 'just a sprain'. Often the instability is not very obvious on examination, and X-rays are usually normal. Careful examination, together with specially positioned and stress X-rays and MRI, are needed to reveal the full problem. Modern minimally invasive techniques of ligament repair or reconstruction, treatment of cartilage injuries and removal of impinging bone and soft tissue provide excellent results. Neglected ankle instability is the commonest cause of ankle arthritis, requiring ankle fusion or ankle replacement.

Ankle injuries are one of the most common sports injury, with various medical studies, showing an incidence of 11.2-20.8% [3] in different sports.

Ankle injuries can be simplified divided into soft tissue (ligamentous / joint capsule) injuries; bone injuries (fracture / contusion); or combined types.

Soft tissue ankle injury (ankle sprain) is far more common than bony injury (81.3% vs. 10.4%) [4]. In USA [2] there are an estimated 660,000 ankle sprains (2.15 per 1,000 person-year) every year; and in UK [6] there is an estimated 302,000 new ankle sprains each year, and, of those, 42,000 are severe sprains.

There are two common sources of chronic pain and disability after ankle injury; they are **persistent ankle instability** and **ankle impingement**.

Fortunately most of the ankle sprains are healed without persistent pain or chronic disability [1,5] after conservative management (such as RICE therapy, physiotherapy etc.) However there are 20-40% ankle sprains that will develop into chronic instability with re-injury rate as high as 80%. Those chronic ankle instability patients may need ligament repair, augmentation or reconstruction.

Persistent ankle instability

One common cause of chronic ankle pain after injury is ankle instability. Chronic ankle instability refers to repetitive/recurrent episodes of ankle sprains [7] resulting in the ankle instability.

- History
  - Typical history of inversion ankle injury
  - Inability to run and turn suddenly

People usually have the following symptoms:

- Pain

  - More at lateral side (outside ankle)
  - May radiate medial malleolus (inside ankle)
- Stiffness
- Swelling
- Exacerbate by activity
  - Worse by climbing stairs or prolonged standing or walking
- Giving way

Fig. 1 Green arrow indicated there is loose body, ankle 12.67 degree tilting of the ankle due to chronic instability.

Physical examination

- Anterior drawer test showes ligament laxity (test anterior talofibular ligament)
- Talar tilt test shows ligament laxity (test calcaneofibular ligament)
- Tender anterior joint line
- Peroneal tendinitis with swelling and tenderness around the lateral malleolus and weakness and pain in resisted ankle inversion

Investigations

- X-ray [9] : special ligament stress views (we use a 'Telos' device) can demonstrate instability which is not obvious on normal X-rays
- MRI [9] can assess the ligaments and the other associated pathology

When the ankles is very unstable and fail conservative management, surgery is indicated. Arthroscopic ligament repair / reconstruction is the preferred choice to restore the ankle stability [10-15].

The advantages of arthroscopic surgery to open surgery are 1) less post-surgery complication, 2) faster recovery.

Study [8] also showed there are several intra-articular conditions associated with chronic ankle instability, which if left untreated, will affect the surgical outcome of the ligament repair / reconstruction.

Synovitis/ soft tissue impingement	86.2%
Chondral/ osteochondral lesion	37.9%
Anterior distal tibial osteophyte	26.4%
Loose body	8%
Distal tibiofibular ligament injury	6.9%

Reference

For the references of this article, please refer to the full version on our website: www.asiamedicalspecialists.hk.

Fig. 1(a & b) X-ray show unstable ankle when stress view applied

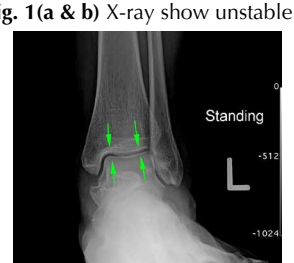


Fig. 1a X-ray without stress applied

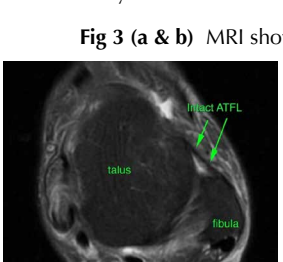
Fig. 1b Opening of ankle joint when stress applied

Fig 2 (a&b) Lateral view showing unstable ankle when stress applied

Fig. 2a Lateral xray without stress

Fig. 2b 1.294 cm anterior displacement seen

Fig 3 (a & b) MRI showed rupture ATFL clearly



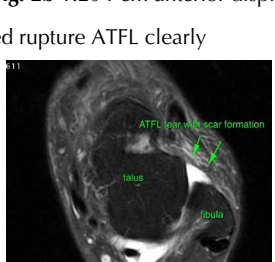


Fig. 3a Intact ATFL in normal person

Fig. 3b Rupture ATFL in ankle instability patient

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