



Tenosynovitis of the Ankle

The sheath of a tendon in the ankle has become dry, inflamed and sore.

(a) What is Tenosynovitis?

Tenosynovitis is inflammation of the *synovial sheath* of a tendon (also called a *tubular bursa*).

What is a Bursa?

A *bursa* is usually a fairly flat coin shaped and closed sac, the inner lining being *synovial membrane* which produces the *synovial fluid* which fills the sac and provides the lubrication. The plural of *bursa* is *bursae*. *Bursae* form where structures rub against each other, for example tendons or muscles sliding across bones. They prevent irritation and facilitate relatively friction-free smooth movement. Inflammation of a bursa is known as *bursitis*.

What is a Synovial Sheath (Tubular Bursa)?

A synovial sheath is a modified bursa, tubular in shape (also known as a *tubular bursa*), which is wrapped around a *tendon*, mainly in the hand or foot. It functions to lubricate the tendon as it moves during muscular work.

(b) Symptoms of Tenosynovitis

If you tap upon the affected synovial sheath you will elicit pain. Pain may be mild to severe on quick movement, with coexisting *crepitus*. *Crepitus* is the grating sensation and noise that occurs on movement of the affected tendon within the synovial sheath due to rubbing of tissue over a dry synovial membrane.

(c) Causes

The problem is generally related to overuse, as such overuse may initially inflame the synovial membrane, compromising the production of *synovial fluid* (the lubricant). The rubbing of the tendon on the walls of a dry membrane further inflames the tissue, exacerbating the problem.

(d) Common Locations of Ankle Tenosynovitis

Common locations of ankle tenosynovitis are shown in the illustration overleaf. Tenosynovitis may occur in any of the locations in which there is a tubular bursa. The two most common locations in the ankle area are:

1. The sheaths of *Peroneus Longus* and *Peroneus Brevis*.
2. The sheaths of *Tibialis Anterior* and *Extensor Hallucis Longus*.

There is a third location, although its occurrence is rare.

3. The sheath of *Extensor Digitorum Longus*.

Peroneus Longus and Peroneus Brevis

This involves inflammation of the sheaths and tendons of *peroneus longus* and *peroneus brevis*. The lateral malleolus (outside ankle) acts as a pulley, and the tendons must glide around it. This may cause irritation with overuse.

Tibialis Anterior and Extensor Hallucis Longus

This involves inflammation of the sheaths and tendons of *tibialis anterior* and *extensor hallucis longus*. This problem generally also involves inflammation of the *inferior extensor retinaculum* (also

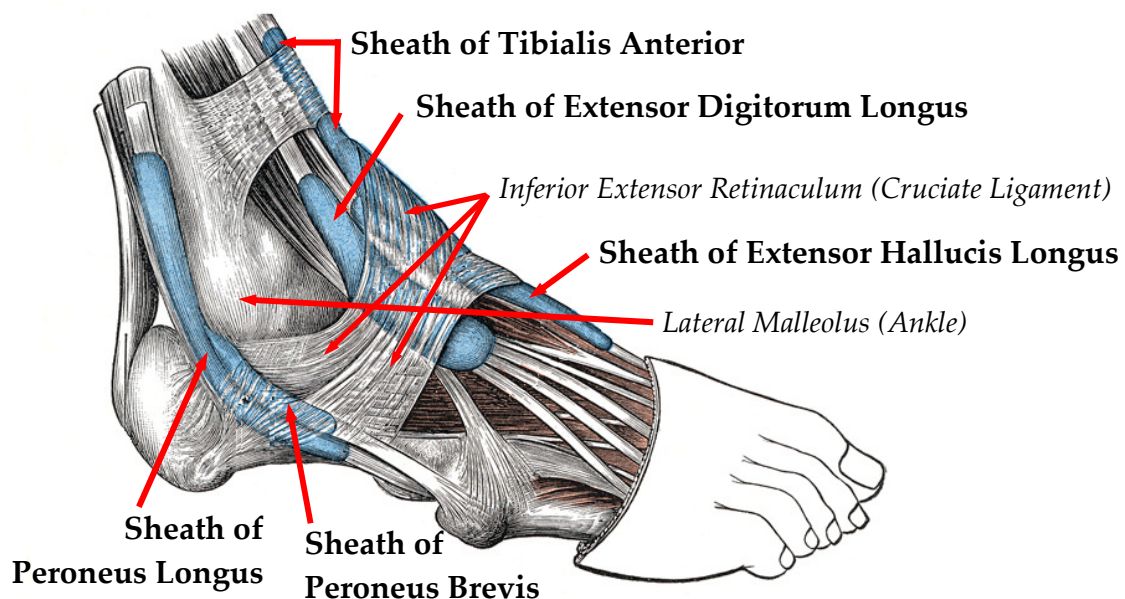
called the *cruciate ligament*) of the ankle, and is most likely to occur in ultra marathon runners. In fact its common name is “*ultramarathoner’s ankle*”. The site of greatest inflammation is in the retinaculum and the tendons underneath it at the *front* of the ankle.

Extensor Digitorum Longus

This third location of tenosynovitis of the ankle is far less likely, in fact rare, but a report of its existence in an ultramarathon runner has been posted on the web¹. It occurs in the sheath and tendon of the *extensor digitorum longus*. Apparently persistent impingement upon the tendon sheath by the *talar* bone (a foot bone) precipitated the problem, and it could not be resolved without surgery.

Common Locations of Ankle Tenosynovitis

Right Lateral Ankle (Modified bursae in blue)



(e) Treatment

Your practitioner will inform you as to the location of your tenosynovitis.

Rest, ice and a healing cream are a start in treatment. Since the problem arises from overuse, the musculature in the whole area is likely to be tight and myofascially hardened, so your practitioner will release the muscle from which the tendon arises, and also all the surrounding musculature. This is important to creating the conditions for the inflamed tissue to recover.

Whilst it is unconventional, and painful, deep massage over the sheath may break-up the crystals of dried-up synovial fluid and pave the way for more rapid healing. Discuss this option with your practitioner.

¹ Kobayashi, H, Sakurai, M, Kobayashi, T. “Extensor digitorum longus tenosynovitis caused by talar head impingement in an ultramarathon runner: a case report.” *Journal of Orthopaedic Surgery*, Aug 2007. The abstract may be found at http://findarticles.com/p/articles/mi_qa3794/is_200708/ai_n19512029/.