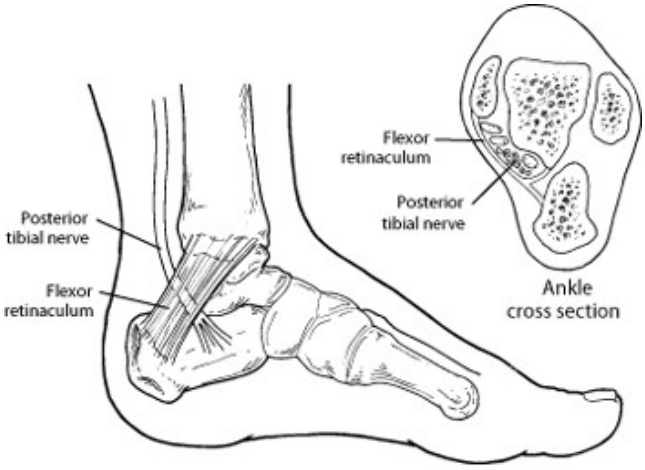
TARSAL TUNNEL SYNDROME

The tarsal tunnel is a narrow space that lies on the inside of the ankle next to the ankle bones. The tunnel is covered with a thick ligament (the flexor retinaculum) that protects and maintains the structures contained within the tunnel—arteries, veins, tendons and nerves. One of these structures is the posterior tibial nerve, which is the focus of tarsal tunnel syndrome.

Tarsal tunnel syndrome is a compression, or squeezing, on the posterior tibial nerve that produces symptoms anywhere along the path of the nerve running from the inside of the ankle into the foot.



Causes

Tarsal tunnel syndrome can be caused by:

- Flat feet. The outward tilting of the heel that occurs with fallen arches can produce compression on the nerve.
- Abnormal structure that occupies space within the tunnel such as: varicose vein, ganglion cyst, swollen tendon, or arthritic bone spur.
- Injury, diabetes, or arthritis that causes inflammation which compresses the nerve.

Symptoms

Symptoms are typically felt on the inside of the ankle and/or on the bottom of the foot. In some people, a symptom may be isolated and occur in just one spot. In others, it may extend to the heel, arch, toes, and even the calf. Symptoms may include tingling, burning, or a sensation similar to an electrical shock, numbness or pain.

Diagnosis

The surgeon will position the foot and tap on the nerve to see if the symptoms can be reproduced. The area will also be pressed on to help determine if a small mass is present. Advanced imaging studies may be ordered if a mass is suspected or if initial treatment does not reduce the symptoms. Studies used to evaluate nerve problems—electromyography and nerve conduction velocity (EMG/NCV)—may be ordered if the condition shows no improvement with nonsurgical treatment.

Nonsurgical Treatment

Many treatment options, often used in combination, are available to treat tarsal tunnel syndrome. These include:

- Rest. Staying off the foot prevents further injury and encourages healing.
- Ice. Apply an ice pack to the affected area, placing a thin towel between the ice and the skin. Use ice for 20 minutes and then wait at least 40 minutes before icing again.
- Oral medications. Nonsteroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen, help reduce the pain and inflammation.
- Immobilization. Restricting movement of the foot by wearing a cast is sometimes necessary to enable the nerve and surrounding tissue to heal.
- Physical therapy. Ultrasound therapy, exercises, and other physical therapy modalities may be prescribed to reduce symptoms.
- Injection therapy. Injections of a local anesthetic provide pain relief, and an injected corticosteroid may be useful in treating the inflammation.
- Orthotic devices. Custom shoe inserts may be prescribed to help maintain the arch and limit excessive motion that can cause compression of the nerve.

When Is Surgery Needed?

Sometimes surgery is the best option for treating tarsal tunnel syndrome. The foot and ankle surgeon will determine if surgery is necessary and will select the appropriate procedure or procedures based on the cause of the condition.