



Tarsal Tunnel Syndrome

Tarsal tunnel syndrome is caused by the entrapment of the tibial nerve. The tibial nerve follows a curving route down the back of the leg to the ankle, where it turns and curls below the inside of the ankle. There are four compartments in this region. In three of them, muscles are routed from the leg to the foot. In the fourth, the tibial nerve and the posterior tibial vein and artery are surrounded by muscles.

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Along the top of these structures lies the lacinate ligament, which forms the roof of the four compartments. There is little room for expansion if any of these structures becomes enlarged or if a foreign object intrudes into the area. If anything impinges on the space occupied by the tibial nerve (i.e., the tarsal tunnel), entrapment occurs.

Signs and Symptoms

When entrapment compresses the nerve, it causes pain, a burning sensation, and tingling on the sole of the foot. This pain usually worsens as the day progresses and can usually be relieved by rest, elevation, or massage.

Causes

Tarsal tunnel syndrome is most common in active adults, but it can also occur in children. The burning or tingling sensation it causes is a function of the compressed tibial nerve attempting to send signals between the foot and brain. People with exceptionally flatfeet can develop tarsal tunnel syndrome because the flattened arch causes strain on the muscles and nerves around the ankle and changes their route slightly, producing compression on the tibial nerve. Another common cause is trauma to the ankle, such as a fracture. When the injury heals, fibrous tissue, similar to a scar develops. If too much scar tissue forms, it can restrict movement in the tarsal tunnel and cause entrapment of the nerve.

Treatment

Conservative treatment such as arch supports and wider shoes may successfully relieve the discomfort of tarsal tunnel syndrome. If inflammation of the nerve is causing the compression, nonsteroidal anti-inflammatory drugs (NSAIDs) may be prescribed.

Physical therapy modalities may be used to decrease inflammation and pain. Therapeutic exercise will increase strength and flexibility of the foot and ankle and manual therapy will address soft tissue and joint limitations.

If conservative treatment measures are unsuccessful, surgical treatment may be necessary.



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