



Tarsal Coalition

The bones of the foot near the ankle fit together like parts of a puzzle; each bone can normally move a little relative to the adjacent bones. A tarsal coalition is an abnormal connection present between two of these bones (the tarsal bones). This abnormal connection which can be composed of bone, cartilage or fibrous tissue may lead to limited motion and pain in the foot. About half of the time, tarsal coalitions are present in both feet. The tarsal bones include the calcaneus (heel bone), talus, navicular, cuboid and cuneiform bones. These bones work together to provide the motion necessary for normal foot function.

Causes

Tarsal coalition is a condition that most often results from the individual bones not separating properly during fetal development. Less common causes of tarsal coalition include infection, arthritis or a previous injury to the area. Tarsal coalitions often run in families.

Symptoms

While many people who have a tarsal coalition are born with this condition, the symptoms generally do not appear until the bones begin to mature—usually around ages nine to 16. Sometimes there are no symptoms during childhood. However, pain and symptoms may develop later in life.

The signs and symptoms of a tarsal coalition may include one or more of the following:

- Pain (mild to severe) when walking or standing
- Tired or fatigued legs
- Muscle spasms in the leg causing the foot to turn outward when walking
- A flatfoot (one or both)
- Walking with a limp
- Stiffness of the foot and ankle
- Frequent ankle sprains

Diagnosis

A tarsal coalition is difficult to identify until a child's bones begin to mature. Diagnosis involves obtaining information about the duration and development of the symptoms as well as a thorough examination of the foot and ankle. The finding of this examination will differ according to the severity and location of the coalition.

In addition to examining the foot, the physician will order x-rays if they suspect a tarsal coalition. Additional diagnostic imaging tests such as a CT scan or MRI may also be needed.

Treatment

The goal of non-surgical treatment of a tarsal coalition is to relieve the symptoms and reduce the motion at the affected joint. One or more of the following options may be used depending on the severity of the condition and the response to treatment:



- Oral medications: Non-steroidal anti-inflammatory drugs (NSAIDs), such as ibuprofen, may be helpful in reducing the pain and inflammation.
- Physical therapy: Physical therapy may include massage, range-of-motion exercises and ultrasound therapy
- Orthotic devices: Custom molded shoe inserts (often referred to as orthotics) can help alleviate pain by distributing weight away from the joint and limiting stress on the area of the coalition.
- Immobilization: Sometimes the foot is immobilized to give the affected area a rest. The foot is placed in a cast or cast boot and crutches are used to avoid placing weight on the foot.
- Injection: Occasionally, a physician performs an injection of a steroid medication or anesthetic agent in order to decrease inflammation and relax spasms.

Determining if Surgery is Needed

If the patient's symptoms are not adequately relieved with non-surgical treatment, surgery is an option. Surgery could involve removal of the abnormal connection or fusion (permanent, complete stiffening) of the joint. The foot and ankle surgeon will determine the best surgical approach based on the patient's age, condition, arthritic changes and activity level.