



TARSAL COALITION

SEARCH

WHAT IS A TARSAL COALITION?

Tarsal coalition (TC) is an abnormal connection between two or more bones that is present at birth. The connection may be made of fibrous tissue, cartilage, or bone. Most people with TC do not have symptoms. Occasionally, patients experience decreased motion in their foot joints, which can be painful. As one joint loses motion, surrounding joints can develop arthritis.

TC usually affects children and teens but can appear in adults also. The condition affects 1-6% of the population and about half of patients have problems with both feet.

Symptoms

While TC may be present at birth, symptoms usually are delayed until the bone matures. This explains why most patients experience pain gradually. The typical patient is a child or teen with foot stiffness and pain with activity. Other symptoms may include discomfort when walking on uneven surfaces, frequent ankle sprains, limited side-to-side joint motion, and flat feet.

Causes

Tarsal coalitions begin before birth. They are often caused by a gene mutation that affects the cells that produce the bones and joints of the foot.

The bones of the feet are divided into three parts: the hindfoot (back of the foot), midfoot (middle of the foot), and forefoot (front of the foot).

Tarsal coalition involves the bones in the midfoot and hindfoot.

Of these bones, the calcaneus (heel bone), talus (lower bone of the ankle), and navicular (boat-shaped bone in the middle of the foot) are most commonly involved. Most tarsal coalitions are one of two types:

- **Talo-calcaneal coalition:** The talus and the calcaneus have not fully separated
- **Calcaneo-navicular coalition:** The front part (beak) of the calcaneus is attached to the outside and lower part of the navicular bone

Diagnosis

Your **foot and ankle orthopaedic surgeon** will typically diagnose TC with X-rays of the foot and ankle. In some cases, a CT scan or MRI can help in the diagnosis. A CT scan will best determine the extent of a bony coalition while an MRI will be more useful in diagnosing small, fibrous, or cartilage coalitions.

Treatments

In TC cases with no symptoms, observation is all that is needed. In almost all symptomatic cases, non-surgical treatment is the first option.

Non-surgical Treatment

Your surgeon may suggest the following treatments to relieve symptoms:

- Avoiding aggravating activities or walking on uneven ground
- A supportive shoe, **orthotic**, or ankle brace
- Anti-inflammatory medications
- Immobilization with a cast or walking boot
- Local corticosteroid injection

Surgical Treatment

Surgical options may be considered after non-surgical treatments have been exhausted. The type of surgery will depend on the location and size of the coalition, the presence of any arthritis at the joints near the coalition, and the expectations and activity level of the patient.

In a **resection** procedure, your foot and ankle orthopaedic surgeon will remove the TC and replace it with muscle or tissue from another part of the body. The goal of this procedure is to decrease pain and improve motion between the affected bones. Younger patients tend to do better with resection of a coalition.

If the TC is large or if arthritis is present, your surgeon may recommend a **fusion** of the affected joints. This improves pain but does not improve motion.

Recovery

A walking cast or boot is used to protect the surgical site. If a fusion procedure is performed, a longer period of immobilization and **non-weightbearing** is necessary. This is followed by physical therapy to restore range of motion and strength. Arch supports or orthotics also can be helpful in stabilizing the joint, even after surgery. Although it may take up to a year to fully recover, most patients have pain relief and improved motion after surgery.

Risks and Complications

All surgeries come with possible complications, including the risks associated with anesthesia, infection, damage to nerves and blood vessels, and bleeding or blood clots. In fusion surgery there is a small risk that the bones will not fuse together.

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