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Posterior Tibial Tendon Dysfunction



The posterior tibial tendon is a power muscle/tendon unit along the inside of the leg and ankle. The attachment of the tendon is a bone called the navicular that is on the inside of the foot. The tendon courses along the inside of the leg and the ankle behind the ankle bone called the medial malleolus. There is an area of poor blood supply to the tendon in area just behind the ankle bone (medial malleolus) to the navicular bone. Although there is no clear reason for many patients, repetitive stress over time to the tendon can cause it to fray/thicken and degenerate. Associated factors can include obesity and high blood pressure, however, there is no clear identifiable cause for every patient. In addition to the tendon, a ligament on the inside of the foot called the spring ligament becomes degenerated and no longer has the ability to hold the shape of the foot, becoming "loose", leading to the change in the shape of the foot. The poor blood supply is one of the reasons why the tendon becomes degenerated and is the reason why it simply cannot be repaired.

Many patients will have pain and swelling along the inside of their ankle. Aggravating factors can be initiating or increasing the level of impact activity such as running. Hiking or long walking on uneven ground such as grass, gravel, cobblestones can also be associated the pain. The physical examination typically shows swelling or thickening along the inside of the ankle where the tendon is located. Asymmetric loss of the arch, where the affected foot is "flatter" and the heel can be slanted more the the outside as well can occur. In more severe cases, the tendon may not actually hurt anymore if a complete rupture has occurred and the foot shape may have changed so much that the heel bone (calcaneus) is actually rubbing and

causing pressure into the small ankle bone (fibula). The motion of the back of the foot is important to examine as if there is a loss of motion and the joints are very stiff, then in that case a fusion may be required to correct the problem. If the joints are flexible, surgery can be done to spare the motion of the foot with a combination of bone cuts (osteotomies), tendon and ligament reconstruction, in addition to additional procedures as required. Xrays are taken to determine the extent of any deformity and presence of arthritis. Additional testing such as a CT scan and MRI may be considered.

Treatment of posterior tibial tendon dysfunction varies based on the severity of the condition. All patients should consider non-surgical intervention prior to considering a reconstruction. In the early stages, the goal is to give the tendon a period of rest and this is accomplished with a change in activities, stopping any impact and focusing on non-impact, such as biking and swimming. The use of over the counter orthotics, lace-up ankle braces, and/or supportive gym shoes are considered. If the pain is very severe, then the use of a walking boot may be considered. If there is improvement in the symptoms with rest, then focused physical therapy to strengthen the tendon is initiated. In many cases, but not all, the symptoms improve to the point that desired activities can be done without pain, however, the use of orthotics and or the lace up brace may be required. The tendon cannot heal back to normal, the goal is to use the orthotics and braces along with activity modification to minimize the pain. If the deformity is rigid or there is arthritis, then more rigid braces such as an AFO or Arizona type brace can be used. These are custom molded braces to hold the foot in a rigid position, in some cases a hinge can be made with the brace to allow some motion of the ankle. These braces will not heal the tendon either and more of a long-term solution to help with the pain. If the non-surgical treatment is not successful in helping the pain or the braces cannot be used then surgery can be considered. If the joints are flexible, surgery can be done to spare the motion of the foot with a combination of bone cuts (osteotomies), tendon and ligament reconstruction, in addition to additional procedures as required. If the deformity is rigid or there is arthritis a fusion of the joints in the back of the foot may be considered. Full recovery typically takes from 10-12 months from such a major surgery, however, most patients are walking in gym shoes with a lace up brace by three months.