

Richard M. Marks, MD
Professor and Director
Division of Foot and Ankle
Department of Orthopaedic Surgery
Medical College of Wisconsin

Adult Acquired Flat Foot

Adult Acquired Flatfoot also referred to as Pes Planovalgus is commonly caused by dysfunction of the Posterior Tibial Tendon. This tendon is primarily responsible for maintaining the arch as well as inverting the foot. The tendon typically loses its function as a result of degenerative changes and less commonly acute rupture. Risk factors for posterior tibial tendon dysfunction include obesity, age, hypertension, diabetes, female gender, and systemic inflammatory disorders such as rheumatoid arthritis. When the tendon is dysfunctional, patients may note collapse of their arch or the foot turning outward (abduction). As the deformity progresses, patients may suffer from lateral impingement symptoms or hindfoot arthritis.

If the posterior tibial tendon is actively inflamed, a course of immobilization with a boot or cast may be recommended. Other conservative treatment recommendations may include physical therapy, use of an anti-inflammatory agent, and/or orthotics. In advance cases, bracing may be necessary. When conservative means of treatment fail, surgical treatment may be considered.



Procedure: In patients with a flexible deformity and minimal arthritic changes, surgery may entail debridement and repair to the dysfunctional tendon. In some cases, a posterior tibial tendon transfer may be warranted utilizing the flexor digitorum longus (FDL) tendon. This is usually performed in combination with a corrective cut in the heel bone called a Medial Displacement Calcaneal Osteotomy to realign the heel. Not uncommonly, additional bony corrective procedures may be necessary. These include placement of a wedged bone in the lateral aspect of the foot (lateral column lengthening, Evans osteotomy) or a medial cuneiform opening wedge osteotomy. In some cases, a subtalar implant (arthroresis) is placed to aid in correction of the deformity.



Pre-Operative



Post-Operative

In patients with a fixed deformity or primarily arthritic complaints a Triple Arthrodesis may be performed. This entails fusing joints of the hindfoot including the Subtalar, Calcaneal-Cubiod, and Talo-Navicular joints. This may be combined with other midfoot fusions to maintain optimal alignment such as a 1st metatarsal-cuneiform plantarflexion fusion as shown here.



Pre-Operative



Post-Operative

Pre-Operative Considerations:

All patients will have a pre-operative medical evaluation arranged either through your primary care provider or through pre-admission testing at Froedtert. Anti-inflammatory medications (i.e. ibuprofen, aspirin, plavix, or celebrex) need to be stopped seven days prior to surgery. You will be contacted the day prior to your scheduled procedure regarding the exact time of your procedure and required arrival. Please be punctual. If you are not contacted by 3:00 PM, please call (414) 805-3285 for procedures being done at Froedtert's main OR or (414) 805-9500 for procedures at Sargent Outpatient Surgery Center.

Following surgery you will be unable to place weight on your surgical extremity thus pre-operative planning is essential. Prior to surgery, an appointment with a physical therapist will be made for instructional use of crutches or a walker as their use will be required post-operatively. The device will also be fitted to your height during this appointment. The crutches or walker will be issued at that appointment or arrangements will be made to obtain the device or arrangements will be through a medical supply company approved by your insurance. Some patients may opt to use a Roll-a-bout or wheel chair. These devices can be obtained through your local medical supply store. Please contact the office (414-805-7442) with the medical supply store of your choice and a prescription can be faxed in. Regardless of the modality used to maintain your non-weight bearing status, please practice in your home prior to surgery as repetition will reduce the risk of falls post-operatively. Removing throw rugs and clearing wider pathways through your home will also make navigating with crutches or walker easier and diminish the risk of falls.

During the period when strict elevation is required (the first ten days) you will need help with activities of daily living such as laundry, cooking, and cleaning. Please plan ahead and consider having friends or family stay with you. Driving is contraindicated during the acute post-operative recovery phase and may be prohibited for a longer period of time if your right foot requires immobilization. Showering will also be difficult during the recovery phase as you are unable to place weight on the surgical leg and cast/dressing needs to be kept clean and dry. Consider the use of a shower chair and/or hand held shower head. You will need to protect the leg by leaving it outside the shower as well as using bags or a plastic cast sleeve (brochure available in cast room) to ensure dressings remain dry.

Postoperative Visits

Day 0-10

- Inpatient procedure: The procedure takes about 2-3 hours. Patients usually require a 1-2 night stay in the hospital following the procedure.
- Anesthesia: This is done under a general anesthetic. A popliteal block, which injects local anesthetic behind the knee, may also be administered pre-operatively to enhance post-operative pain control.
- Dressings: Following the procedure, a bi-valved cast or splint will be applied to the lower leg. This dressing is to be kept clean, dry and left in place until you return to clinic.
- Non-weightbearing: To ensure optimal surgical results, you will be unable to bear weight on your operative side. The use of crutches or walker is required. Activities are strictly limited during this time.
- Elevation: Strict elevation above heart level (toes above the nose) for the first ten days is important to your recovery as it helps to minimize pain and swelling. Swelling can adversely affect the soft tissue by placing increased tension on incisions putting them at increased risk for dehiscence.

- **Pain Control:** Pain medications will be prescribed to be used as needed. Pre-Operative nerve blocks can last between 8 to 12 hours; however, waiting to take pain medication until the block has completely worn off can result in increased breakthrough pain which can be difficult to manage. Please plan accordingly and take your medication promptly when sensation begins to return to the foot usually indicated by a tingling sensation in the toes or mild discomfort at the surgical site. Pain medications may be taken on a scheduled basis in the early post-operative recovery phase as this is when the pain is most intense.

Day 10 – First Post-Operative Visit

- First postoperative visit with non-weightbearing x-rays, suture removal, application of cast.
- Cast will remain on until week 6. This is necessary to allow for tendon and bony healing. Until then, cast must be kept clean, dry, and out of shower
- Continue with non-weightbearing on operative leg and limited activities
- May elevate extremity as needed

Week 6

Cast removed, weightbearing x-rays obtained, advance weightbearing in a boot from 10-100% over the next 6-8 weeks with physical therapy with appropriate restrictions. Advancement of activities may be varied based on patients' past medical history and radiographic presentation.

Week 12

Weaned from boot at about week 12-14 into regular shoes with orthotics. Increase activities as tolerated. It may require 10-12 months for complete rehabilitation. Compliance with home physical therapy protocol following discharge from formal physical therapy is key to improving strengthening and endurance of the foot and ankle. Swelling can persist up to 6 – 8 months. The use of compression stockings can help diminish post-operative swelling.

Scar Management: Steri-strips, which were placed over the incision following suture removal, will gradually fall off between week 6-8. Do not pull at these; you may trim the loose edges. Once the Steri-strips have fallen off, you may massage Vitamin E oil or Mederma into the incisions twice a day. Silicone gel strips should also be used in conjunction with the other scar management modalities. These can be obtained from the cast room.

If any questions arise, please contact the office at (414) 805-7442 between 8:00 am and 4:30 pm Monday through Friday. Leave your number and message, Dr. Marks, Jamie, his physician assistant, or Mary S., his nurse, will return your call.