

CASE STUDIES OF TALONAVICULAR ARTHRODESIS

John A. Ruch, D.P.M.

Indications and techniques for isolated talonavicular joint fusion in the collapsing pes valgus or tibialis posterior syndrome have been thoroughly documented. Because the postoperative course for

this surgical procedure is interesting, the author would like to share some of the findings encountered with these cases.



Figure 1A. Collapsing pes valgus due to tibialis posterior dysfunction.



Figure 1B. Lateral radiograph depicting collapse of the medial arch and luxation of the talonavicular joint.

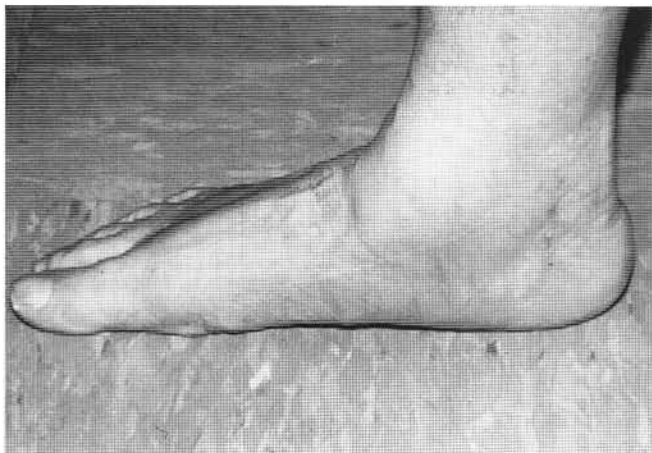


Figure 2A. Reconstruction of collapsed pes valgus following isolated talonavicular fusion.



Figure 2B. Lateral radiograph following talonavicular fusion.

CASE 1

The patient is a fifty-nine-year-old moderately obese female. She suffered symptoms of tibialis posterior dysfunction for approximately two years before undergoing surgery. A wide variety of conservative measures were utilized including ankle bracing, anti-inflammatory therapy, and orthotic use. Ultimately, the patient underwent surgery, and the technique involved a single joint fusion, specifically a talonavicular arthrodesis. The procedure was selected because of moderate deformity and minimal symptoms in the subtalar and calcaneocuboid region.

The patient's postoperative course was very typical with approximately seven weeks of non-weight bearing following the initial surgical procedure. The patient was then allowed to progressively begin weight bearing in a short-leg cast for another five weeks. The patient went on to solid fusion of the talonavicular joint. She returned

to regular shoes with the use of an orthotic device at approximately five months postoperative.

The patient continued to have lateral column symptoms for approximately eighteen months postoperative. She described aching sensation with the normal day's activities. These lateral symptoms were focused at the sinus tarsi, the calcaneocuboid region and the metatarsal cuboid articulations. Symptoms were supported and improved with the use of compression ankle support, anti-inflammatory therapy, and progressive range-of-motion exercises.

Approximately eighteen months after the surgery, the patient adapted to the talonavicular fusion and her lateral column symptoms have dissipated. She is approximately four years postoperative and continues to ambulate with minimal symptoms of the left foot or ankle.



Figure. 3A. Preoperative lateral radiograph demonstrating collapse of the medial column.



Figure. 3B. Dorsoplantar radiograph demonstrating extreme medial luxation of the talonavicular joint. Otherwise, the subtalar joint and calcaneocuboid joint show no significant evidence of arthrosis.



Figure 3C. Approximately eighteen months postoperative with realignment of the rearfoot complex and solid fusion of the talonavicular joint.



Figure 3D. Dorsoplantar radiograph demonstrating solid fusion of the talonavicular joint. The significance of this film demonstrates the alignment of the navicular on the head of the talus. The navicular has been repositioned in a rectus alignment with the rearfoot complex, and not shifted around to lie directly in front of the head of the talus. Care must be taken when performing the single joint fusion not to overcorrect the deformity by shifting the navicular too medial. Compensation for forefoot varus can be accomplished by a plantar position of the navicular on the head of the talus with caution being taken to avoid excessive medial shift of the navicular.

CASE 2

The patient is a fifty-year-old female of normal stature. She has no gross collapse of the left foot. However, she suffers from a fifteen-year history of rheumatoid arthritis. She has suffered a two-year history of chronic tenosynovitis of the tibialis posterior tendon and general instability and weakness through this joint complex. Isolated talonavicular joint fusion was selected as the procedure of choice to stabilize the left foot and decrease the general strain to the tibialis posterior tendon. The patient was unsuccessfully treated with conservative measures for approximately two years.

The patient's postoperative course included six weeks of non-weight bearing in a short-leg cast followed by an additional four weeks of weight bearing in the short-leg cast. She progressed to regular shoes by four months postoperative and experienced lateral column symptoms for approximately nine to twelve months postoperative. At one year postoperative, the patient was completely asymptomatic with respect to the left foot and medial tibialis posterior tendon. She claimed this was the first time in over fifteen years that she had been able to walk without pain in her left foot.



Figure 4A. Dorsoplantar radiograph depicting rectus alignment of the rearfoot complex.



Figure 4B. Relatively normal appearing radiograph with respect to rearfoot alignment. No gross arthrosis through the rearfoot complex is noted.