

Is This My Ankle or My Foot?



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KEYWORDS

- Pathologic flatfoot • Valgus deformity • Degenerative ankle disease • Ankle arthritis

KEY POINTS

- Traditional thinking has suggested that pathologic flatfoot is a continuum.
- The patients who present with valgus deformity at the ankle (with and without end-stage arthritis) most often do not have a concomitant flatfoot.
- As we continue to progress in our treatment of degenerative ankle disease with valgus deformity, it is imperative for us to embrace this deformity as the end stage in multidirectional global instability.

INTRODUCTION

The understanding of the complexities of the adult acquired pathologic flatfoot has undergone serious evolution in the past 30 years; from a secure feeling that the process began and ended with failure of the posterior tibial tendon¹ to a greater understanding of the subtleties of what causes the different presentations and drives successful treatment. In addition, as the treatment of ankle arthritis evolves from fusion to ankle replacement, the need for answers for the very difficult patient with valgus degenerative ankle disease begs a look at what causes this form of flatfoot. The following question is posed in this article: is there a subset of patients with “flatfoot” that has little to do with the foot and is all about the ankle?

Traditional thinking has suggested that pathologic flatfoot is a continuum. In the classic article by Johnson and Strom,² it was suggested that the so-called “Posterior Tibial Tendon Insufficiency” could be broken into 3 clinical stages, beginning with stage 1 (Johnson and Strom²), which is no more than tendonitis. These patients most often have preexisting symmetric congenital flatfoot before presenting. Stage 2 describes a well-known patient with progressive asymmetry in valgus collapse

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with retained motion in the hindfoot. Stage 3 is felt to be a “progressed stage 2” with resultant degeneration and fixed asymmetric planovalgus deformity. Myerson and then Bluman³⁻⁵ felt that if the progression of the valgus collapse remains unchecked, then the ankle is affected. The addition of stage 4 to include those patients who have valgus ankle collapse has begged the question, is grade 4 really a progression of grade 2 or 3? Smith and Bluman⁶ felt this was the case when they wrote “Most patients with stage IV AAFD (Adult Acquired Flatfoot Deformity) have progressed through stage III disease, although a subset of patients develop valgus talar tilt without a rigid flatfoot deformity, suggesting a possible progression directly from stage II to stage IV.”

Our experience is in many ways the opposite. The patients who present with valgus deformity at the ankle (with and without end-stage arthritis) most often do not have a concomitant flatfoot. The common history is ankle sprains (recurring or a single significant event). The presentation is with a complaint of a progressive “flatfoot.” The symptomatic side is most often unilateral but can be bilateral. These patients appear to have an entirely ankle-derived flatfoot. Although this observation flies in the face of the traditional thinking, it has been observed before by other clinicians.

DELTOID ANATOMY

The superficial deltoid has been described in 4 consistent fascicles.⁷ The anterior fascicles (tibionavicular ligament, tibiospring ligament) tend to be thicker and cross 2 joints. The direct medial (tibiocalcaneal ligament) and posterior (posterior tibiotalar ligament) may be less thick. The superficial deltoid resists valgus deformity (**Fig. 1**). The deep deltoid crosses 1 joint (tibiotalar) and prevents malrotation. In the severe valgus “tilted ankle,” both the deep and superficial are involved. The extent is difficult to ascertain by standing radiographs.

LITERATURE OBSERVATIONS

Hinterman and his group⁸⁻¹¹ have described this condition in a discussion about medial instability. In the Hinterman classification, the progression of the medial instability goes from minimal instability symptoms with giving way to the condition that is seen as end stage, with a resultant flatfoot and even an insufficient posterior tibial tendon⁸ (**Table 1**). The grade III and IV in the medial ankle instability classification truly describes the end stage patient that is confused for a grade IV AAFD.

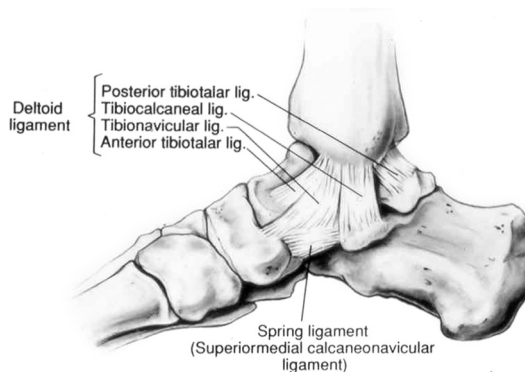


Fig. 1. Deltoid ligament anatomy.

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