Our patient is a 29 year old male with drop foot to the left lower extremity. In October 2010, the patient was involved in a motor vehicle accident causing a complex aortic and femoral injury. A drop foot has been seen at our institution for this trauma but initially podiatry was not consulted. Our team became involved in the case when the patient presented to the emergency department three years later with concern for ulceration to his left hallux. Since the initial accident, the patient developed drop-foot to the left lower extremity and had been prescribed an ankle-ankle orthosis (AFO). The AFO resulted in ulceration to the left hallux. The patient no longer had follow up care with his primary care doctor so he was referred to the emergency department.

On initial evaluation, there was a small, infected, full thickness ulceration to the medial hallux. The patient had 0/5 muscle strength to the anterior compartment with protective sensation intact to the level of the midfoot. The patient was discharged home on oral antibiotics and instructed to follow up with the senior author, with plans for wound care and eventually surgery to correct the drop foot. Despite wound care and proper offloading, the ulcer failed to heal. Radiographs were obtained which showed a fracture of the distal phalanx. Bone biopsies of both the distal and proximal phalanges showed evidence of osteomyelitis. The patient subsequently underwent debridement and amputation, the patient underwent a drop foot reconstruction.

REFERENCE


ABSTRACT

The transfer of the posterior tibial (PT) tendon to the dorsum of the midfoot has long been described as a treatment option for drop foot. This was modified later to include anastomosis of the PT tendon to the tibiocutaneous arteries at the ankle. This was described by Ober in 1933 and the description of transferring through the interosseous membrane was published by Mayer in 1937. The bridle procedure was published in 1991 by McCall and colleagues. The bridle procedure involves anastomosis of the PT tendon, TA tendon, and PL tendon in combination with elongation of the Achilles tendon as described.

From a biomechanical standpoint, there is concern that harvesting the PT tendon, the strongest supinator of the foot, there is a risk of arch collapse and development of a varus deformity. Vertullo and Hsu in 2002 described a case of acquired flat foot after anterior transfer of the PT and FHL tendons after peroneal nerve injury from knee surgery. Flynn et al. in 2015 retrospectively reviewed 15 patients who underwent PT tendon transfer with or without concomitant subtalar implant. Both groups were able to avoid significant arch collapse, however, one patient who did not have the implant required a triple arthrodesis during the follow-up period. While others report no development of calcaneovalgus deformity after PT tendon transfer.

In our case, there was concern for the development a flat foot due to transfer of the PT tendon and already altered hindfoot mechanics due to hallux amputation. We opted to perform another tendon transfer, and harvested the FHL tendon to be transferred to the navicular. Traditionally, the FDL tendon is transferred when the PT tendon is severely degenerate or ruptured, mostly in PT tendon dysfunction.1-3 This transfer into the navicular with fixation1-3 provides suprasympatic forces and replicates the function of the PT tendon. In our case, this patient previously underwent a hallux amputation, and the FHL tendon currently serves no function leaving it available for transfer without compromising the function of the hallux. At fifteen months follow-up, the patient is doing well and able to ambulate well without bracing.