2017

Traumatic Laceration of the Posterior Tibial Tendon Treated with Novel Technique

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Introduction
Posterior tibial tendon (PTT) insufficiency is a common entity, and can result in chronic tendon disruption. Acute disruption is a rare occurrence, but has been described in the literature. Most reported cases are associated with ipsilateral ankle fractures. Laceration of the posterior tibial tendon has also been described, typically in the operative setting as a result of iatrogenic injury.

Case Report
A 15 year old male presented to the clinic with complaints of right ankle pain and weakness. 2.5 months prior, he had sustained a laceration to the posteromedial ankle. It was diagnosed as a superficial lesion and was treated with simple repair. His pain improved but did not go away despite use of NSAIDs and taping by his athletic trainer. He reported difficulty with running and cutting particularly with push-off. An MRI performed before his orthopaedic evaluation demonstrated disruption of the PTT with several centimeters of retraction and fluid within the sheath. The chronicity of his injury suggested that primary repair would not be a viable option. Given his young age and lack of baseline pathology, a conventional reconstruction with PTT debridement and flexor digitorum longus tendon (FDL) transfer was sub-optimal. Consent was obtained for secondary reconstruction with options to include autograft, allograft, or tenodesis.

Operative Technique
The posterior tibial musculo-tendinous complex was mobilized. The stump ends were debrided back to a level demonstrating vascularity. A decision was made to perform a “split” FDL transfer to use as an intercalary graft while still preserving much of the toe plantarflexion function of the native tendon. A longitudinal split was made in the tendon from proximal to a level plantar to the navicular bone. The medial limb was transected at that distal level (leaving the lateral limb intact). A segment of the split FDL traversed the defect as an intercalary graft, and then a Pulver-Taft weave was performed distally through the distal PTT stump. Non-absorbable suture was used for fixation at the Pulver-Taft junction sites, and absorbable suture was used to augment the repair in an “epitendinous” fashion. Fibertape was wrapped around the repair to provide augmentation and protection.

Conclusion
To our knowledge, this is the first written report of a PTT laceration treated with a split flexor digitorum longus tendon transfer. The technique described in this case has resulted in a good functional outcome at 2 years. This may be a viable treatment option for practitioners facing a similar clinical scenario.