Outcomes of Flexor Digitorum Longus (FDL) Tendon Transfer for the Treatment of Chronic Achilles Tendinopathy

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Introduction/Purpose: Flexor hallucis longus (FHL) tendon transfer is a common surgical technique used for augmentation during the surgical treatment of chronic Achilles tendinopathy and reconstruction. Flexor digitorum longus (FDL) tendon transfer represents a viable surgical alternative for patients with failed FHL transfers or athletes where compromise of the hallux push off strength could negatively impact their level of activity. There is no reported clinical outcome data about this technique in the current literature. Our study describes the clinical and functional results after FDL tendon transfer for the treatment of patients with chronic Achilles tendinopathy.

Methods: We retrospectively assessed prospectively collected data on patients that underwent FDL tendon transfer in the treatment of chronic Achilles tendinopathy (March 2012 - March 2015). Charts were reviewed for clinical data, associated treatments and complications. Preoperative assessment included the Visual Analogue Score (VAS), SF-36 health status survey and the lower extremity functional scale (LEFS). At final follow up we evaluated pain level, range of motion of the ankle and the toes, ability to perform single leg raise and toe walking, calf atrophy and complications. Postoperative outcomes were assessed by Visual Analogue Score (VAS), SF-36 health survey, Lower Extremity Functional Scale (LEFS), Foot Function Index (FFI), VISA-A score and the Foot and Ankle Ability Measure (FAAM). Fifteen patients (seventeen feet), 6 males and 9 females, mean age of 53.6 years (27-76 years) and an average body mass index of 31.4 kg/m² (20.5 to 45.4 kg/m²) were included in the study.

Results: Mean follow-up was 27.5 months (15-49). Four patients (6 feet) had prior surgeries, including two patients with failed FHL transfer. We found significant clinical improvement when comparing pre-operative and postoperative VAS scores (6.0±3.3 versus 1±1.36; p<0.001), SF-36 physical component summary (28.2±10.7 versus 45.0±11.1; p<0.002) and LEFS (36.4±22 versus 57.9±20.5; p<0.011). At final follow up, 6/7 patients (86%) returned to prior levels of recreational sport activities. No differences were found on single leg raise test when compared to uninvolved side. One patient reported weakness for plantar flexion of the toes, without gait complaints. Mean VISA-A was 52.6 points (15-85), Foot Function Index (FFI) 21.2% (0-65%) and FAAM 86.2% (55.3-100%) for the FAAM. Three patients had superficial infection and two patients had deep infection, requiring surgical debridement.

Conclusion: FDL tendon transfer represents a safe surgical alternative as a method of augmentation during the treatment of chronic Achilles tendinopathy. Our study showed comparable clinical and functional outcomes to FHL tendon transfer and minimal complications or donor site morbidity.

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