Clinical Outcomes of Lateral Transfer of the FHL or FDL for Concomitant Peroneal Tendon Tears

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Introduction:
Concomitant tears of the peroneus longus and brevis tendons are rare injuries, with literature limited to case reports and small patient series. While surgical options have been described in limited numbers, no clinical studies directly compare the results of single-stage FDL and FHL lateral transfers, and no previous series objectively evaluated power and balance of the involved extremity following transfer. The purpose of this study was to evaluate outcomes scores, clinical examination data, and objective power and balance following single-stage FDL and FHL tendon transfers for treatment of concomitant peroneus longus and brevis tears.

Methods:
Over an eight-year period (2005-2012), nine patients underwent lateral transfer of the FDL or FHL tendon for treatment of complete peroneus longus and brevis tears. All but one patient underwent concomitant procedures to address hindfoot alignment or other contributing deformity. Mean age at time of surgery was 56.9 years and average BMI was 27.2 kg/m². Lateral transfer of the FDL was performed in four patients, and FHL transfer performed in five. Average length of follow-up was 45.1 months (range: 11-94). Eight of nine patients completed SF-12 and Foot Function Index scores and seven returned for range of motion and manual strength testing. At the same visit, patients completed force plate balance tests, and peak force and power testing on a PrimusRS™ machine with a certified physical therapist.

Results:
All patients were satisfied with the results of the procedure. Mean SF-12 physical and mental scores were 43 and 60, respectively. Mean FFI total score was 56.5. Two patients continued use of orthotics or braces. Two patients reported occasional pain with weight-bearing activity. Three patients noted mild paresthesias in the distribution of the sural nerve. Two patients with FDL transfers developed tibial neuritis, one requiring subsequent tarsal tunnel release. All patients demonstrated 4/5 peroneal strength in the involved extremity. Average loss of inversion and eversion ROM were 25% and 27% of normal, respectively. Mean eversion peak force decline relative to the normal extremity measured 56.1% (p = 0.00023), and average eversion power decreased 59.4% (p = 0.00076). Patients demonstrated 47% increases in both center of pressure tracing length and velocity during balance testing (p = 0.026). There were no statistically significant differences between the FDL and FHL transfer groups with regards to clinical examination or objective power and balance tests.

Conclusion:
The FDL and FHL tendons are both successful options for lateral transfer in cases of concomitant peroneus longus and brevis tears. Objective measurements of strength and balance demonstrate continued deficits in the operative extremity, even years following the procedure. These differences, however, do not appear to significantly alter or inhibit patient activity levels and high satisfaction rates with the procedure. While anatomic studies have demonstrated benefits of FHL transfer over the FDL tendon, further studies with increased patient volume are needed to determine if these differences are clinically significant.