Single-stage Flexor Tendon Transfer for the Treatment of Severe Concomittant Peroneus Longus and Brevis Tendon Tears

Foot & Ankle Category: Hindfoot

Author(s):
Jeffrey R. Jockel, MD
James W. Brodsky, MD

Introduction
While peroneal tendon injuries are a common cause of lateral ankle pain, there is a paucity of literature specifically addressing the treatment of severe concomittant peroneus longus and brevis tears. The purpose of this study was to evaluate patient outcomes following a single-stage flexor tendon transfer for the treatment of severe concomittant tears of both peroneal tendons.

Methods
The surgical database of a single fellowship-trained orthopedic surgeon was retrospectively reviewed to identify cases addressing concomittant peroneus longus and brevis tears over a 15-year surveillance period from 1996 to present. Tendon transfer of either the flexor hallucis longus or flexor digitorum longus was indicated when both peroneal tendons were found intra-operatively to have severe non-reconstructable tears of greater than fifty percent. Tendon transfers were performed with a medial tendon harvest, lateral rotation across the posterior compartment, and attachment to the base of the 5th metatarsal utilizing a drill-hole technique. Side-to-side tenodeses, both proximal and distal to the torn peroneal segments, were followed by excision of the diseased tendon. Postoperatively, patients began weight-bearing in a short leg cast at 8 weeks, with initiation of physical therapy at 12 weeks. Pre-operative and post-operative AOFAS hindfoot and visual analog pain scores were prospectively collected, and patient charts were reviewed for complications. A postoperative outcome questionnaire was administered during latest follow-up to assess return to activities, satisfaction, patient-rated outcome.

Results
Ten patients treated with flexor tendon transfer for severe concomittant peroneus longus and brevis tears were identified. Mean age at the time of surgery was 55 years old (range 41-67), including 5 male and 5 female patients. Four of 10 patients had undergone at least one prior surgery to the lateral ankle region for lateral ligament instability, peroneal tendon subluxation, or previous partial tears. Six flexor hallucis longus tendon transfers and 4 flexor digitorum longus transfers were performed for non-reconstructable concomittant peroneal tendon tears by the senior author. At the time of surgery, 5 patients were treated with additional procedures for associated pathology including cavovarus deformity, lateral ligament instability, osteochondral defects, rheumatoid arthritis/tendinopathy, and osteoarthritis of the ankle. One surgical complication (10%) occurred following FDL transfer in a patient who developed a peroneal nerve palsy which resolved by 3 months post-operatively. Mean follow-up time from surgery was 45 months, and no subsequent surgical procedures were required in any patient. Mean pre- and postoperative AOFAS hindfoot scores increased from 65 (range 52-77) to 86 (range 73-95), respectively, while mean VAS pain score decreased from 4.6 (range 0.5-8) to 1 (range 0-2). Nine of 10 patients (90%) reported a return to preoperative activity levels, noting return to activities such as volleyball, cycling, waterskiing, swimming, walking, and fishing. Ninety percent of patients reported satisfaction with surgical results, and rated their outcomes as good or excellent.
Conclusion
Single-stage flexor tendon transfer is an effective surgical option for the treatment of severe concomitant peroneus longus and brevis tendon tears.