Immediate Unrestricted Weight Bearing with Simple Stirrup Brace Following Single Anchor Lateral Ankle Ligament Stabilization

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Introduction/Purpose: Anatomic lateral ankle ligament reconstruction has been shown to reliably restore the functional stability of the joint. Current orthopedic literature supports accelerated rehabilitation and protected weight bearing advancement as a safe and effective means to timely patient recovery. To our knowledge, there have not been clinical outcome reports of a protocol utilizing immediate unrestricted weight bearing in a stirrup brace following single anchor lateral ligament stabilization. The purpose of this study is to report on a series of patients treated with a more progressive protocol resulting in durable ankle stability and favorable clinical outcomes.

Methods: A total of 28 patients with chronic lateral ankle ligament instability who failed conservative management underwent arthroscopy and modified Brostrom-Gould lateral ligament reconstruction between 2014 and 2015 were identified. The anterior talofibular and calcaneofibular ligaments were released from the fibula and advanced using one double-loaded metallic 3.5mm suture anchor. Immediate unrestricted full weightbearing in a stirrup brace was allowed from the first postoperative day and accelerated physical therapy was initiated at 2 weeks postoperatively. Patients were assessed preoperatively, and at a minimum 1-year follow-up, using the AOFAS Hindfoot scale and VAS pain score. Additional postoperative outcome measures included the FAOS and a custom clinical questionnaire. Range of motion, ligamentous stability and single-blinded examination with Star Excursion Balance Test (SEBT) functional testing were performed postoperatively. Complication and recurrent instability rates were also recorded.

Results: Twelve patients participated in the study (8F, 4M). Mean age at final follow-up was 49 years (21-70). Average follow-up was 21 months (16 to 26). Average satisfaction score was 94%, and all patients reported they would have the procedure again. AOFAS Hindfoot score and VAS improved significantly from preoperative to postoperative, respectively (55.6 to 89.8, 5.4 to 1.6). Average postoperative FAOS score was 80.3 (51.8-100). No measurable difference was observed on examination of range of motion, ligamentous stability, or SEBT testing in the anterior, posterolateral or posteromedial planes of the contralateral side, respectively (61.5 to 62.2 cm, 62.4 to 64.1 cm, 56.4 to 57.6 cm). No patients reported recurrent instability.

Conclusion: This study demonstrates that anterior talofibular ligament and calcaneofibular ligament advancement utilizing a single 3.5mm anchor construct followed by immediate unrestricted weight bearing is a safe and effective protocol for the treatment of chronic lateral ankle instability. Ligamentous stability was achieved and maintained in all patients across a wide variety of patient ages and desired activity levels. Patient satisfaction was excellent. This surgical technique and postoperative protocol may help reduce surgical time and implant cost, and may facilitate a more timely return to preinjury functional level.