Retrospective Chart Review of the Internal Brace Ligament Augmentation Repair in Conjunction with Open Broström Surgery in Ankle patients

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Introduction/Purpose: The Broström is the most commonly used Lateral ligament repair for chronic instability, but there is growing evidence that a fairly large percentage will stretch out with time, resulting in recurrent instability. Due to the nature of the repair, rehabilitation is fairly slow, so as not to compromise the tissue during the maturation stage. Currently, the Internal Brace Ligament Augmentation Repair is an accepted augmentation method for management of a Broström procedure. However, to our knowledge, no formally collected outcome data on the procedure has been reported.

Hypotheses

Augmentation of the Broström repair with an Internal Brace would 1) allow accelerated rehabilitation and return to activity, 2) Will aid in long-term stability of the repair without a tendency to stretch out.

Methods: Patients with lateral ankle instability repaired with a Broström and Internal Brace Augmentation were prospectively evaluated one-time post-operatively between 6 and 24 months. Patients with concomitant procedures other than debridement were excluded. Outcome measures included demographics; surgical time; AOFAS, FAAM, satisfaction, VAS scores; ROM, Raise Test, and calf strength compared to the contralateral limb; return to sports, and adverse events.

Fifty-five (55) patients were analyzed from two sites. The cohort includes 20 males and 35 females. 96% of the patients were non-smoking with an average BMI 27.7 ± 5.3 (range 20.6 to 43.8). Median age was 35 years (18 to 62 years). Six of the cases were revisions. Interestingly, 55% of the injuries resulted from severe sprains to the involved ankle from normal activities of daily living (ADL), while 45% were a result of sports injuries. The mean follow up time was 13.5 ± 6.5 months (range 6-27 months).

Results: Average surgical time was 36±9 minutes (range 16-60 minutes). The average postoperative VAS and Satisfaction scores were 0.9±1.5 and 9.1±2.0, respectively. The mean return to sports was 86 days (range 44-181). Average AOFAS score was 93.9±10.4. Thirty (55%) patients reported an ideal max score of 100. For the FAAM, current level of function in sports activities score was 90+ in 76% of subjects. Forty-five (81%) patients were brace free with return to sport. The objective calf strength examination (actual girth measured) proved not significantly different from the contralateral limb; 38.9±4.5cm and 38.7±4.4cm (p=0.866). 89% had a negative anterior drawer. Ankle dorsiflexion comparisons were 9.4±2.8cm (operative side) and 10.6±3.4cm (contralateral); and ankle plantarflexion comparison (goniometer) 45.7±12.1 degrees (operative side) and 45.9±12.7 degrees (contralateral). Neither comparison showed a difference.

Conclusion: The overall complication rate was < 3% without any reported adverse events. The results of the outcome measures and objective measurements suggest the Internal Brace Augmentation of Broström procedure is safe and efficacious.