Preliminary Results of the First 30 Patient Outcomes Following One Surgeon's Experience with Arthroscopically Aided Modified Brostrom Repair of the Anterior Talofibular Ligament.

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Statement of Purpose

There has been an increasing amount of literature over the last decade regarding arthroscopic methods of anterior talofibular ligament repair. After reviewing literature, the authors set out to evaluate patient outcomes following a standardized technique of arthroscopically aided repair. Outcomes were evaluated based on clinical and functional assessments.

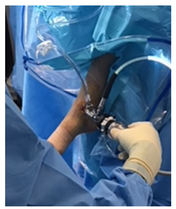
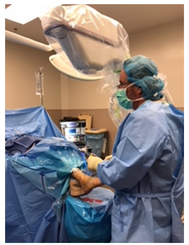
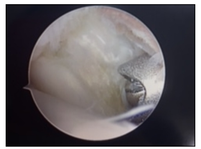
Methodology & Hypothesis

The first 30 patients to have undergone an arthroscopically aided Brostrom repair were retrospectively reviewed. There were 16 females and 14 males who underwent this repair using a standardized technique performed by one surgeon (lead author) from January 2014 through March 2016. Patient age at the time of repair ranged from 12-72 with an average age of 42 years. Five patients had adjuvant procedures including OCD debridement/microfracture, calcaneal cyst excision and grafting, removal of loose body and synovial chondromatosis. All patients met preoperative clinical criteria for repair including positive anterior drawer test, positive findings of anterior talofibular ligament tear on MRI, and persistent pain and instability after conservative care. Patient outcome surveys were conducted via phone call with average follow up of 29.8 months and AOFAS hindfoot/ankle scores were obtained. Clinical outcomes were also obtained through retrospective review of charts.

The hypothesis we pose is that our clinical outcomes would be good to excellent after this arthroscopically aided repair of the ATFL.

Procedure

Our standardized operative technique involved standard anteromedial and lateral portals for ankle arthroscopy. The operative extremity was placed in gravity distraction for the arthroscope, and an inverted C arm was utillized as a table for the repair. After anterior edge of the distal fibula was cleared of soft tissue using cautery wand, anchors were placed x2 to anterior fibula edge approximately 1cm from each other with camera medially and under fluoroscopic guidance . Accessory incision made distally in safe zone over talar neck. Sutures from anchors were passed using a suture lasso from lateral portal back through accessory portal. Sutures were tied with foot in dorsiflexion and eversion. The ankle was stressed under fluoroscopy to confirm repair.


Literature Review

Arthroscopic Brostrom repair for lateral ankle instability was described as early as 1987 by Hawkins et al. The original technique involved staple fixation of the ligament to the fibula and has been improved upon leading to Acevedo and Mangnone's technique in 2007.

Over the last decade there has been increasing literature confirming the biomechanical equivalence of arthroscopic and open repairs including those by Acevedo and Mangnone (1) and Yeo (2). There have been additional findings of no statistically significant difference in radioraphic, clinical, or functional outcomes, and no increase in complication rates between arthroscopic and open repairs (1-2)

There has also been several authors publishing good to excellent results utilizing the technique described here (3-5) with findings of early return to weightbearing, smaller incisions, and minimal complications.

Results

Mean AOFAS score was 89.8, the values ranged from 20-100. Patients returned to full activity in an average of 10.9 weeks (range 8-24). Average AOFAS scores were also evaluated among subgroups of patients aged <20 years old, 20-49 years old, and >49 years old and found to be 97.2, 90.3, and 84.9. Additionally, AOFAS scores were found for subgroups of patient BMI <25, 25-30, and >30, and were 93.1, 84.5, and 91.2. Average AOFAS in the 5 patients requiring additional procedures at the time of surgery was 91.2.

Analysis & Discussion

Arthroscopic repair of the ATFL was described as early as 1987, but has been popularized over the last decade. Acevedo and Mangone described a technique in 2007 that the lead author utilized here as the standardized technique of treatment. A literature review revealed outcomes of patients treated with arthroscopic repair techniques to be very good and comparable to outcomes of the traditional open Brostrom-Gould procedure. This study of the author's patient population is consistent with those findings of very good results and provides additional information of the trend of improved outcomes with younger, active patient population. There were similar findings in patients of normal and obese BMI regarding AOFAS scores. These were preliminary findings of the first 30 patients, further studies would include larger patient population group and subgroups, and potential for comparison to other treatment groups.

References

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