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Introduction: The standard for lateral ligament stabilization is direct repair of the ATFL by open or arthroscopic technique. The implications and necessity of repairing the CFL are not well understood. The purpose of this study was to assess the impact of repairing the ATFL alone compared to repairing both the ATFL and CFL, in a biomechanical cadaver model. We hypothesized that repairing the CFL will substantially augment ankle and subtalar joint stability during weight-bearing ankle inversion compared to ATFL repair alone.
Methods: Ten matched pair fresh frozen human cadaveric ankles were mounted to an Instron, loaded to body weight and inverted to 20° for three cycles; torque and stiffness were recorded. Ankles underwent sectioning of ATFL and CFL and were randomly assigned to ATFL only repair using two arthroscopic Broström all-soft anchors, or combined ATFL and CFL repair. Testing was repeated after repair, followed by load-to-failure (LTF).
Results: The predominant mode of failure after repair was at the tissue/suture. There was an 11.7% increase in stiffness in combined repairs, and only a 1.6% increase in ATFL-only repairs. CFL failed at lower torque and rotation than the ATFL in combined repairs. There were strong correlations between intact stiffness and stiffness after repair (r=.74) and ATFL torque in LTF testing (r=.77), across both groups.
Conclusion: We found a greater increase in stiffness following combined ATFL and CFL repair compared to ATFL repair alone. This added stability is due to complimentary contributions of the CFL, not augmented LTF strength of the ATFL. Intact specimen stiffness correlated strongly with stiffness after repair and LTF torque, suggesting that a patient's inherent tissue laxity or inelasticity is likely a meaningful predictor of strength after repair. Restoring the CFL plays a relevant role in lateral ligament repair, however sufficient time for ligament healing should be allowed before inversion stresses are applied.

Reliability and Validity of Preoperative MRI for Surgical Decision Making in the Chronic Lateral Ankle Instability

SS-43
May 19, 2017, 3:45 PM
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Introduction: The anterior talofibular ligament (ATFL) is the most frequently affected ligament in chronic lateral ankle instability. When surgery is indicated, the choice of technique is performed intraoperatively according to the arthroscopic aspect of the residual ATFL. In our department, the technique used is either the arthroscopic Brostrom-Gould procedure repair if the ligament is thickened/disinserted or an anatomical reconstruction with autograft if ATFL is absent/thin. The purpose of this study was to assess the reliability and validity of preoperative MRI for surgical decision making in chronic lateral ankle instability.
Methods: This single-center prospective study included all patients who underwent an arthroscopic ankle stabilization between 2013 and 2016. The study complied with the recommendations of the group STARD. Preoperative MRI evaluation of ATFL was performed in axial T2-weighted images, twice, by 2 independent observers. Arthroscopy assessment, used as the gold standard, was carried out by a single senior surgeon. The primary endpoint was the ATFL aspect in two categories: (1)thin or absent/(2)avulsed or thickened. The intra and inter-observer agreement was assessed by the kappa coefficient (k). The diagnostic performance parameters of preoperative MRI were calculated.
Results: Twenty two patients were included in this study, 15 men/7 women, mean age 30.3±9.5 years. An anatomical ligament repair was performed in 14 patients (63.6%), and 8 patients (36.4%) underwent a ligamentoplasty with a gracilis autograft. The intra-observer reproducibility of MRI analysis was substantial (k=0.75 and 0.68) and inter-observer reproducibility was moderate (k=0.55) to almost perfect (k=0.87). In comparison with arthroscopy, the agreement was substantial and significant (k=0.70 and 0.80). Diagnostic performance parameters of preoperative MRI were good: sensitivity:85.7-87.5%, specificity:86.7-92.9%, and percentage of patients correctly classified 86.4-90.9%.
Conclusion: Preoperative MRI is a reliable and valid decision making tool for the choice of surgical stabilization technique in patients with chronic lateral ankle instability.

Osteochondral Defects of Talus treated with Juvenile Cartilage Transplant Cells

SS-44
May 19, 2017, 3:50 PM
Chandra Reddy, M.D., Presenting Author

Introduction: To prove that Juvenile Cartilage cells have a role in the treatment of Osteochondral Defect (OCD) of the Talus.
Methods: This is Retrospective case series with clinical follow up. We obtained appropriate IRB approval for reviewing our cases of OCD of Talus treated with transplanted cartilage cells. OCD of the Talus is initially treated with trial of splintage, activity modification, NSAIDS and Physical therapy. When patients do not respond to nonoperative measures the standard surgical intervention is debridement with or without micro-fracture or an OATS procedure In out Institution for the cases which needed surgical Intervention we treated them with an ankle arthroscopic debridement of the lesion and a synovectomy. We then proceeded to transplant juvenile allograft cartilage cells(Denovo, Zimmer) to cover the defect. Patients were nonweight bearing 2 weeks in a splint. Patients then

were placed in a CAM walker for next 4 weeks with PWB and PT. Patients were evaluated postop and foot and ankle scores were obtained through a combination of clinical exam and telephonic questionnaire.
Results: we had total of seven cases between 2012 to 2016 with an average followup of 8 months. The first 2 cases had an arthroscopy - arthrotomy for cartilage cell transplant. The last 5 cases have all been performed arthroscopically. we had age range form 17 to 56 and both males(5) and females(2) At last followup 5 cases had an excellent result with a foot and ankle score over 97(100) one patient had a fair result. FA score 75-80. One patient at 4 months complained that symptoms were no different at 4 month mark. FA Score 50.
Conclusion: Early results for Cartilage cell transplants for OCD of the Talus have been good. We need a larger series and longer followup hopefully with a multicenre blinded trail to see if these results will be worth the extra cost and risks involved.

Clinical and Radiographic Outcomes Following Concurrent Treatment of Osteochondral Lesions of the Talus and Symptomatic Os Trigonum

SS-45

May 19, 2017, 3:55 PM

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Introduction: Osteochondral lesions of the talus and symptomatic os trigonum represent two distinct lesions in the hindfoot and each are a well-recognized source of pain and disability. However, little is known about the outcomes of patients who are treated for both concurrently. Currently there are no case reports in the literature or case studies to guide surgeons in counseling patient expectations or treatment decisions when a symptomatic osteochondral lesion and painful os trigonum are both present. The purpose of this study is to address this deficiency in the literature.
Methods: We retrospectively identified 28 patients who had undergone arthroscopic treatment of OLT and Os Trigonum from 1997 to 2015. 19 patients met inclusion and exclusion criteria and were invited for participation in the study. The primary outcome measure was the FAOS and AOFAS ankle-hindfoot score. Secondary outcome measures were the Short-Form-36, resumption of work and sports, and a custom questionnaire. Preoperative and follow up progression of radiographic arthritis was reviewed.
Results: Twelve patients (6 male, 6 female, mean age 38) were available for participation in the study with a mean duration of follow up of 65 months (range 12-160) months. Most patients would have surgery again (78%) and were satisfied with their surgery (67%). Patients frequently were able to perform activities of daily living (FAOS 84) but performed modestly concerning sports and recreation (FAOS 61). The mean AOFAS score was 78. Two patients had radiographic progression of arthritis by a single grade.
Conclusion: The principle finding of this study was that patients have an overall fair outcome with combined treatment of osteochondral lesions of the talus and os Trigonum. The overall complication rate and radiographic progression of arthritis was low at final follow-up. We hypothesize that this combined injury occurs when a painful os trigonum impairs ankle stability leading to an osteochondral defect.

Preliminary Results of Arthroscopic Superior Capsule Reconstruction with Dermal Allograft

SS-46

May 19, 2017, 1:30 PM

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Introduction: Superior capsule reconstruction (SCR) with fascia lata autograft has been proposed as a joint-preserving solution for irreparable massive rotator cuff tears (MRCT). Dermal allograft limits donor-site morbidity, has been used previously in augmentation of rotator cuff repairs, and has been used clinically for SCR. However, no studies have reported on the outcomes of arthroscopic SCR with dermal allograft. Our purpose was to evaluate the short-term outcomes of arthroscopic SCR with dermal allograft.
Methods: A multi-center prospective study was performed on patients undergoing arthroscopic SCR for irreparable MRCTs. The minimum follow-up was 1 year. Range of motion and functional outcome according to VAS pain, ASES score, and SANE score were assessed preoperatively and at final follow-up. Radiographs were used to evaluate the acromiohumeral distance (AHD).
Results: 31 patients with a mean age of 61.7 years had a minimum follow-up of 1 year. Fourteen patients (45.2%) had a prior rotator cuff repair. Forward flexion improved from 129° preoperatively to 156° postoperatively, and external rotation improved from 32° to 43° respectively ($p < .05$). Compared to preoperative values, VAS decreased from 5.7 to 1.5, the ASES score improved from 44.9 to 83.0, and SANE score improved from 35.8 to 76.5 ($p < .05$). The AHD was 6.6 mm at baseline, and improved to 7.3 mm at the 2 weeks postoperative. Twenty-three patients (74.2%) were satisfied. Five patients (16.1%) underwent a revision procedure including 3 reverse shoulder arthroplasties.
Conclusion: Arthroscopic SCR using dermal allograft provides functional improvement and patient satisfaction in the majority of cases. The preliminary results of this joint-preserving technique are encouraging in an otherwise difficult to manage patient population. However, further study is needed to examine the long-term outcome and need for secondary procedures, and evaluate the learning curve of the procedure as these results represent our initial patients.