Introduction: The outcomes and durability of arthroscopic treatment for glenohumeral osteoarthritis(GHOA) are not well studied. The purpose was to determine 5 yr survivorship for a comprehensive arthroscopic management (CAM) procedure for the treatment of GHOA.
Methods: This study had prior IRB approval. The CAM procedure was performed on a consecutive series of 42 young patients(44 shoulders) with GHOA. All patients had clinical and radiographic features, which would otherwise qualify them for total shoulder arthroplasty(TSA). The CAM procedure included glenohumeral chondroplasty, capsular release, and synovectomy, humeral osteoplasty, axillary nerve neurolysis, subacromial decompression, loose body removal, microfracture and biceps tenodesis. Patients a minimum of 5 years out from surgery were included. Outcomes scores were collected including ASES and satisfaction. Failure was defined as progression to TSA. Kaplan Meier survivorship analysis was performed.
Results: Results: 42 patients (with 44 shoulders) were included. All were recreational athletes. 7 were former collegiate or professional athletes. Mean age at surgery was 52yrs (range,27 to 68), with 13 women and 29 men. The mean follow-up on 86% of the cohort was 6yrs (range,5 to 8). 11 shoulders(26%) progressed to TSA, at a mean of 2.9 yrs (1.0-5.4). One progressed to another surgery for stiffness at a mean of 5.6 months, and another underwent a revision CAM procedure at 7.9 yrs. Mean pre-op ASES score was 64.5(SD+11.6) and 86.7(SD+16.6) at final follow-up. Median satisfaction was 10 (range,2-10). From this cohort, Kaplan Meier survivorship was 84.6% at 3 yrs and 73.3% survivorship at 5 yrs.
Conclusion: The long term durability of arthroscopic management for symptomatic GHOA is important to understand for proper surgical decision-making, particularly in young patients with GHOA. At a mean of 6 yrs and minimum of 5 yrs after the CAM procedure, we found acceptable outcomes scores with survivorship at 3 years of 84.6% and at 5 yrs of 73.3%

Mid-Term Complications and Re-operation Rates Following Pectoralis Major Tendon Repair in the Young Active Population

SS-37

April 15, 2:20 PM

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Introduction: We sought to determine the functional outcomes, complications, and reoperation rates in a cohort of young highly-active individuals undergoing pectoralis major repair.
Methods: All patients with pectoralis major rupture undergoing surgical repair were isolated from the Military Health System. Demographic variables, injury characteristics (e.g. location, mechanism, chronicity), and surgical technique were recorded. Self-reported pain scale (SRPS, i.e. 0-10), range of motion, and strength were tracked. Rates of complications, functional outcomes, return to duty, re-rupture, and re-operation were also recorded. Primary endpoints of interest included clinical failure (i.e. inability to return to military function), surgical failure, and presence of major or minor complications. Variables associated with failure were evaluated using t-test and chi-square univariate analysis.
Results: 257 patients underwent pectoralis major repair with mean follow-up of 47.8±17.1 months(range: 24.1−89.5). The average age was 31.5±7.2 years and all patients were male. 89 (35%) patients were injured during combat deployments, and bench press was the predominant mechanism of injury(n=158;61.5%). Complete ruptures of sternocostal and clavicular heads occurred in 120(51%), and 109(50%) of the tears occurred at the myotendinous junction. Average SRPS improved from 3.1±1.5 to 0.5±1.1 at final follow-up. There were 45 minor complications (37 patients), most commonly persistent anterior shoulder pain (n=19;7%). 42 major complications occurred in 32 patients, including 15 re-ruptures in 14 patients (5.8%). 242 patients (94%) were able to return to full military duty and 34% of patients deployed after surgical repair. Insertional (36%) and myotendinous (36%) disruptions were associated with greater risk of surgical failure(p=0.0014), and myotendinous tears accounted for 54% of total failures(p=0.073). Furthermore, increasing body mass index and psychiatric comorbidity were associated with greater risk of clinical(p=0.0002; p=0.0169) and total failure(p=0.0097;p=0.016), respectively.
Conclusion: In the largest study to date, 94% of patients are able to return to full military duty after primary pectoralis major repair and 5.8% experience re-rupture.

Evaluation of Hyperosmolar Irrigation Solution for Shoulder Arthroscopy: A Prospective, Double-blind, Randomized, Controlled Study

SS-38

April 15, 2:25 PM

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Introduction: A hyperosmolar irrigation fluid has been reported to be safe and have potential benefits for use during shoulder arthroscopy in a pre-clinical translational animal model study. The present study was designed to compare the clinical effects of a hyperosmolar solution to a standard isotonic solution with respect to periarticular fluid retention based on net weight gain and change in shoulder girth, as well as associated pain, after shoulder arthroscopy.
Methods: Under IRB approval, a prospective, double-blind, randomized, controlled trial was performed to compare isotonic (LR, 273mOsm/L) and hyperosmolar (593mOsm/L) irrigation solutions used for arthroscopic

rotator cuff repair surgeries. Patients scheduled for arthroscopic rotator cuff repair who consented to participation were enrolled and then randomized into one of the two groups: Isotonic Control or Hyperosmolar. Patient demographics were recorded pre-operatively, operative data were captured, and net weight gain, change in shoulder girth, and immediate post-operative pain scores were determined and compared between groups.

Results: Fifty patients (n = 25/group) were enrolled and completed the study. No statistically significant differences were noted between cohorts in regards to patient demographics or surgical variables. The hyperosmolar group experienced a mean net weight gain of 3.52±1.8 lbs, which was significantly ($p = 0.005$) less than that of the control group (4.97±1.7 lbs). The hyperosmolar group had significantly ($p < 0.05$) less change in shoulder girth compared to controls. In regards to VAS pain score, patients in the hyperosmolar irrigation group reported significantly lower immediate post-operative pain ($p = 0.036$) compared to controls.

Conclusion: Based on our results, a hyperosmolar irrigation solution provides a safe and effective way to decrease periarticular fluid retention and minimize immediate postoperative pain associated with arthroscopic rotator cuff repairs. Therefore, use of a hyperosmolar irrigation solution for shoulder arthroscopy has potential clinical benefits to surgeons and patients.

Arthroscopic Partial Scapulectomy for the Treatment of Snapping Scapula

SS-39

April 15, 2:30 PM

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Introduction: To assess the outcome of arthroscopic partial scapulectomy in patients with a snapping scapula.

Methods: Twenty consecutive patients who underwent arthroscopic partial scapulectomy (one bilateral) for the treatment of a snapping scapula were assessed. All had failed non-operative treatment including physiotherapy and had reported transient symptomatic relief from an ultrasound guided local anaesthetic injection. Pre- and post-operative function and pain was assessed using the Constant and Quick DASH scores. Operative Technique: Surgery was undertaken with the patient prone and the hand of the operative side placed in the small of the patient's back creating a "Chicken Wing" position to allow greater access to the undersurface of the scapula. A viewing portal was established Inferio-Medially and a direct lateral portal was used to resect the scapula using a combination of radiofrequency and a burr.

Results: At a mean follow up of 43 months (11-79) a significant improvement in the Constant score was noted from 58 (48-69) to 86 (59-97). The mean post-operative Quick DASH score was 79. All of the patients had gained a significant improvement with regards to crepitus and pain, which was completely absent in 12. One patient developed a gradual recurrence of symptoms and underwent a repeat arthroscopy with further scapula resection, resulting in improvement in their symptoms. No complications were reported. All of the patients reported that they would be happy to have this procedure again.

Conclusion: Arthroscopic scapulectomy is a safe and reproducible procedure for the treatment of snapping scapula with significantly less scarring than an open procedure.

Arthroscopic Subscapularis Augmentation of Bankart Repair in Chronic Anterior Shoulder Instability With Bone Loss: Clinical Multicenter Study

SS-40

April 15, 2:35 PM

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Introduction: The aim of this study was to evaluate the clinical outcomes of a new arthroscopic procedure consisting of a tenodesis of the upper third of the subscapularis and a Bankart repair in chronic anterior shoulder instability with bone loss.

Methods: This is a retrospective, multicenter case series study. One hundred ten patients practicing sports, who underwent arthroscopic subscapularis augmentation (ASA) of Bankart repair in chronic anterior shoulder instability with a mean follow-up of 40.5 months (range: 24 to 65 months) were enrolled for this study. The patients were operated by four different surgeons and functional outcomes were evaluated by independent observers. Preoperatively all patients underwent CT scan Pico area method to assess the percentage of glenoid bone loss (GBL). Exclusion criteria included a GBL >25%. In all patients a Hill-Sachs lesion was observed. In 24 patients a prior stabilization procedure had failed. VAS scale, Rowe score, American Shoulder and Elbow Surgeons (ASES) scores were used to assess results.

Results: No specific complications related to this procedure occurred. Three patients (2.7%), but none of 24 with failure of prior stabilization procedure, had a post-traumatic re-dislocation. At final follow-up, the mean scores were as follows: VAS scale significantly decreased from a mean of 3.5 to 0.5 (P= .015), Rowe score significantly raised from 57.4 to 95.3 (P= .035), ASES score significantly raised from 66.5 to 96.5 (P= .021). The mean deficit of external rotation was 8° with the arm in R1 position, and 4° with the arm in R2 position.

Conclusion: This procedure has been demonstrated safe and effective to restore joint stability in patients practicing sports, affected by chronic anterior shoulder instability associated with anterior glenoid bone loss (<25%) and engaging Hill-Sachs lesions. Level of evidence: IV, case series, treatment study.