loss (gGBL), glenoid version, acromial morphology and posterior humeral head subluxation. Cox proportional hazard analysis was used to evaluate risk factors for failure. Results: 42/90 (46.7%) patients failed a 6-month trial of nonoperative management and went onto receive an arthroscopic stabilization procedure. The failure group demonstrated a significantly greater humeral head subluxation ratio than the cohort of patients who survived nonoperative management (0.65 +/- 0.2 vs 0.62 +/- 0.2; p = 0.0375). Cox proportional hazard analysis identified glenoid bone loss, greater posterior acromial height, less posterior acromial coverage, and posterior humeral subluxation as significant risk factors for failure of nonoperative management. Of those who failed nonoperative management 17 had repeat MRI’s for comparison, demonstrating a statistically significant progression of gGBL (index MRI 2.68% +/- 1.71 verses after nonoperative treatment 6.54% +/- 1.59 vs p = 0.00274). Conclusion: In patients that underwent 6-months of nonoperative management for isolated posterior glenohumeral instability, failure occurred approximately 47% of the time and was associated with a greater posterior humeral head subluxation, less posterior acromial coverage, greater posterior acromial height, and greater amounts of glenoid retroversion on index MRI than those who did not fail. Additionally, those who had repeat MRI on average 1.3 years later demonstrated greater glenoid bone loss when compared to the index MRI. The findings of this study suggest that a trial of nonoperative management as a first line treatment for all isolated posterior instability patients might not be as conservative or risk free as once thought.

Category: Shoulder - Instability

Glenoid Concavity Affects Anterior Shoulder Stability In A Biomechanical Model Including Soft Tissue and The Rotator Cuff’s Compressing Forces

Abstract ID# 21518
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Summary:
In our biomechanical shoulder model, including soft tissue and muscle forces, the glenoid concavity correlated with shoulder stability and with that should be considered in the individualized therapy of glenoid defects.

Data:
The therapy of anterior shoulder instability in the presence of bony glenoid defects usually depends on the defect size, which is considered the main indicator of instability. Recent studies, based on computed tomography and simplified bony biomechanical models, revealed the glenoid concavity to be relevant for shoulder stability as well. However, the concavity’s effect in the presence of soft tissue and muscular forces, which are included in this study, is still unknown. We hypothesized, that the glenoid concavity would have a major impact on stability in a shoulder model including soft tissue surroundings and glenohumeral compression forces, exerted by the rotator cuff. In n = 8 human shoulder specimens, glenoid depth and concavity was measured and individual coordinate systems were calculated based on anatomical landmarks. Static load was applied to the rotator cuff’s tendons, the deltoid muscle and the biceps long head tendon. In a robotic test setup, an anteriorly directed force was applied to the humeral head until its translation of 5 mm. This performance in native joints, as well as in joints with Bankart lesions and glenoid bone defects of 10% and 20%. Depending on their concavity, the specimens were divided into two subgroups (low vs. high concavity with n = 4, respectively). A high correlation between native glenoid concavity and stability could be shown (R² = 0.75). For each level of defect, we found a significantly higher stability in joints with high concavity compared to the low concavity subgroup (p = 0.027). In bony defects of 20% the loss of stability correlated with the initial concavity (R² = 0.89), as we could see a higher loss of stability in initially high concavity joints compared to lower concavity (p = 0.004). In a test setup including soft tissue and muscle forces, the glenoid concavity correlates with shoulder stability. In bony defects, loss of concavity has a severe impact on instability. Thus, glenoid concavity should be considered in a differentiated, individualized therapy of bony glenoid defects.

Category: Shoulder - Instability

Minimum Five Years Follow-Up After Arthroscopic Latarjet at Oslo University Hospital

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Summary:
Evaluation of clinical outcomes, recurrence rates, quality of life and radiological signs of glenohumeral osteoarthrosis at a minimum of 5 years follow-up after arthroscopic Latarjet procedure.

Data:
PURPOSE: The Latarjet procedure is considered the standard surgical procedure for patients with recurrent shoulder instability after failed operative treatment or significant bone loss. Recurrence rate after arthroscopic Bankart increases significantly between one and five years follow-up; however, lower recurrence rates have been reported after open Latarjet procedure. The use of arthroscopic Latarjet procedure is increasing; however, there is still limited data on long term outcomes. The aim of this study was to evaluate clinical outcomes, recurrence rates, quality of life and radiological signs of glenohumeral osteoarthrosis at a minimum of 5 years follow-up after arthroscopic Latarjet procedure.

METHODS: A consecutive cohort of 51 patients operated with arthroscopic Latarjet procedure at Oslo University Hospital were prospectively registered from November 2014 until June 2017. All patients had a double screw fixation technique. Preoperatively, patient demographics and The Western Ontario Shoulder Instability Index (WOSI) were recorded. The WOSI score was repeated at one and five years follow-up. At 5 years follow-up, patient reported quality of life was assessed using the EQ-5D and EQ-VAS, and radiographs were performed to evaluate signs of OA. Complications and reoperations were recorded by reviewing patient’s medical records. RESULTS: Of the 51 patients operated, 40 patients had complete pre-operative data sets. Of the 40 patients, 5 patients were lost to follow-up, and 4 patients refused participating in the study, thus 31 were available for follow-up and were included in patient demographics and radiographic evaluation after 5 years. Two patients had incomplete or missing WOSI during follow-up, leaving 29 with complete data sets. The median age at the time of the procedure was 26.2 years (range 17.3-46.4), the majority (26/31) were men and more than half (18/31) had a history of > 10 dislocations before surgery. A total of 15/31 were reoperations after former instability surgery. At five years, there was no recurrence of dislocations, however 7/29 reported experience of subluxation. The median preoperative WOSI score was 44.6 (IQR:24.2,57.8), and after 5 years 57.7 (IQR: 58.2, 91.1) (p < 0.001). Median WOSI after 1 year was 75.4 (IQR: 58.9, 89.6). There was no significant difference in WOSI between 1 year and 5 years (p = 0.6). The EQ-5D at 5 years follow-up was 0.86 (SD 0.10) according to the Danish value set in the reference range -0.62, 1. At 5-year follow-up, radiological signs of shoulder OA were observed in 13/31 (42%), of which 4 presented with grade 1, 6 grade 2 and 3 grade 3, according to Samilson and Prieto classification. Reported complications requiring reoperations during follow-up was 8/31 (25.8%). CONCLUSIONS: At five years follow-up after Arthroscopic Latarjet procedure there was a significant improvement in WOSI compared to pre-operative evaluation and low rates of recurrent dislocation. However, there was a relatively high (42%) rate of radiographic OA. There was no significant change in WOSI from one to five years follow-up, suggesting that the improvement from preoperative function was maintained at 5-years follow-up.

Category: Shoulder - Instability

Goalkeepers Have a Higher Recurrence and Return to a Lower Level of Play Compared to Field Position Soccer Players Following Arthroscopic Bankart Repair

Abstract ID# 22624
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Abstracts

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Summary:
Goalkeepers have a higher recurrence and return to a lower level of play compared to field position soccer players following arthroscopic Bankart repair.

Data:
Abstract Background: Little attention has been paid to the playing position as a risk factor for recurrence after an arthroscopic Bankart repair (ABR). Purpose: The purpose of this study was to compare return to sport, functional outcomes, and recurrence after an arthroscopic Bankart repair (ABR) between goalkeepers and field positions in soccer. Study Design: Cohort Study Methods: A retrospective comparative cohort study was performed in soccer players who underwent an ABR between January 2017 and December 2019. The minimum clinical follow-up was 2 years postoperative. Functional outcomes included the Rowe score, visual analogue scale (VAS) for pain, and shoulder-dependent sport ability measured with the Athletic Shoulder Outcome Scoring System (ASOSS). The delta was calculated based on the difference between the postoperative and preoperative scores. Return to sport, level of play, recurrent instability, and revisions were evaluated according to position played. Results: A total of 70 position players and 11 goalkeepers met the study criteria. Postoperative functional outcomes were significantly improved in both groups compared to baseline (p < 0.001). However, field position group achieved more significant outcomes improvements (delta VAS -2 vs. 0, p = 0.029; delta Rowe 45 vs. 30, p = 0.045; delta ASOSS 45 vs. 40, p = 0.028). While all players returned to soccer, only 55% (n=6) of goalkeepers returned to the same level compared to 93% of field players. (p = 0.003). The overall rate of recurrent instability was 8.6%, but was significantly higher among goalkeepers (27.2% vs 5.7%; p = 0.049). Moreover, the odds of goalkeepers having a recurrence were significantly higher than field position players (OR 8.5% 95% CI 1.2-57.2, p = 0.027). Conclusion: Although the results of ABR are generally favorable in soccer players, goalkeepers have significantly worse functional outcomes, lower rates of return to sports at the same level, and higher recurrence rates compared to field position players. This information may be useful both for preoperative counseling and modifying treatment approach based on position in soccer.

Category: Shoulder - Instability

Long Term Outcomes Of The Congruent Arc Latarjet Procedure Evaluation Of 96 Patients With A Minimum Follow Up Of 10 Years

Abstract ID# 22740
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Summary:
Although the congruent arc Latarjet procedure has shown to be an effective treatment for the management of recurrent glenohumeral instability in the short term, there are no studies in the literature evaluating its long-term results.

Data:
Background: Although the congruent arc Latarjet procedure has shown to be an effective treatment for the management of recurrent glenohumeral instability in the short term, there are no studies in the literature evaluating its long-term results. Purpose: The objective of the following study was to evaluate functional outcomes, complications and revisions of a consecutive series of athletes with recurrent glenohumeral instability treated with the Congruent Arc Latarjet procedure with a minimum follow-up of 10 years. Study design: Retrospective cohort study Methods: Between June 2008 and April 2012, 106 patients with recurrent glenohumeral instability were treated at our institution with the congruent arc Latarjet procedure. In total, 63 revision procedures and 43 primary procedures were included. We evaluated Return to sport and used the Rowe, EVA, ASOSS and SANE scores to assess functional outcomes. Complications and revisions were evaluated. Graft consolidation was evaluated with CT at 3 months. Osteoarthritis was evaluated at the final follow-up with radiographs according to the Samilson Prieto classification. Results: The final analysis included 90 patients (Follow-up 91%). The average follow-up was 140 months (120-158 months) and the average age at the time of surgery was 23.2 years (range 17-35 years). Overall, 94% of patients returned to sports and 90% returned to the same level as before surgery. At the last follow-up, 40% of the patients had changed sports or abandoned sports. No patient reported having left the sport for reasons related to the shoulder. The two main causes of abandonment referred to were labor demand (50%) and studies (30%). The mean Rowe, VAS, and ASOS scores at 140-month follow-up were 85, 1.5, and 80, respectively, all improved significantly compared to the preoperative (P < .01). The average SANE score was 85%. Moreover, 94% and 96% of the patients had a Rowe and ASOS score that exceeded the MCID, respectively. The bone graft consolidated in 90% of the patients. The recurrence rate was 5.5% and the revision rate was 3%. At the end of follow-up, 20% of the patients had osteoarthritic changes. (10% mild, 6% moderate and 4% severe). There were no significant differences in functional scores between patients who presented arthritic changes and those who did not. Conclusion: The Congruent arc Latarjet procedure is associated with a high percentage of return to sport, excellent functional outcomes and a low rate of recurrences after a minimum follow-up of 10 years. Although 20% of patients had osteoarthritic changes at the end of follow-up, most were mild and moderate, without significant differences in functional scores between patients who presented arthritic changes and those who did not.

Category: Shoulder - Instability

Subluxators Present With Equivalent Clinical Presentation and Extent Of Injury Compared With Dislocators After First Time Anterior Shoulder Instability Events

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Summary:
Subluxators and dislocators had similar clinical presentations with no difference in the extent of injury except for greater frequency of Hill-Sachs lesions in dislocators with similar surgical outcomes.

Data:
Introduction: The aim of this study was to characterize epidemiology and postoperative outcomes in subluxators and dislocators after a first-time anterior instability (FTAI) event. We hypothesized that subluxators would have a milder clinical presentation, lesser degree of pathology on imaging, and fewer anchors placed intraoperatively in comparison to dislocators. Methods: Surgically managed FTAI patients from a single institution between 2013-2020 were included. Exclusion criteria included multidirectional instability and recurrent instability. Demographics and surgical details were retrospectively collected. Instability was categorized into dislocation, in which another person reduced the shoulder, or subluxation, in which there was no documentation of another person reducing the shoulder. Labral tear location was determined using the clock method and labral tear size was determined by assigning 1 point to each hour around the clock for a maximum value of 12. Results: 146 patients (97 subluxators, 79 dislocators) were available for analysis. There were no significant differences in baseline demographics. Rates of bony Bankarts were equivalent, but Hill-Sachs lesions were reported more in dislocators (88.1% vs. 52.6%, p<0.001). Preoperative and postoperative ROM and strength were equivalent between cohorts. There was no difference in either labral total tear size or incidence of concomitant posterior or superior labrum tears. There was no difference in the number of anchors used, although remplissage was performed more in dislocators (18.9% for dislocators vs. 6.0%, p<0.002). Revision rates were not significantly different between cohorts. Conclusions: Subluxators and dislocators had similar clinical presentations with no difference in the extent of injury except for greater frequency of Hill-Sachs lesions in dislocators with similar surgical outcomes.