also decreased significantly as measured by the pain Visual Analogue Scale (VAS) (8.10+/-.174 vs. 2.65+/-.178, p < .0001). When compared to the instability cohort, microfracture patients had significantly worse postoperative ASES (89.03+/-.14.28 vs 79.90+/-.13.87, p < .001), SANE (91.23+/-.13.20 vs 79.13+/-.14.43, p = .0001), and VAS (1.55+/-.1.92 vs 2.65+/-.3.78, p = .003) scores, as well as decreased range of motion in forward flexion (155.48+/-.10.3 vs 151.29+/-.11.76, p = .039) and external rotation (65.17+/-.64 vs 63.65+/-.8.34, p = .010). Fewer patients in the microfracture cohort met the SCB, PASS, or MOI for the ASES (p = .0044, p = .0035, p < .0001), the PASS or MOI for the SANE (p < .0001 and p < .0001), or the PASS for the VAS (p = .0001). At latest follow-up, only 58% of microfracture patients had returned to active-duty military service compared to 93.78% of isolated instability patients (p < .0001). Conclusion Isolated glenoid ostechondral defects remain a challenging pathology to treat. Combined microfracture and arthroscopic labral repair produced modest, albeit statistically significant, improvements in patient reported outcome measures and may be a reasonable treatment option for patients with chondral lesions who are not candidates for arthroplasty. However, only 58% of patients were able to maintain active-duty military service at midterm follow up compared to 93.78% of patients who underwent labral repair without concomitant microfracture.

Category: Shoulder - Instability

Anterior Glenoid Rim Fracture: Complication After Arthroscopic Bankart Repair In Young Athletes

Abstract ID# 22979
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Summary:
Fracture through anchors in athletes is a rare complication of an arthroscopic Bankart repair, and could be associated with the use of bioabsorbable anchors. Identifying this rare complication is of utmost importance for a proper treatment allowing young patients to return to sport without any limitation.

Data:
Introduction: Knotted and knotless suture anchors are used in arthroscopic Bankart repair providing stability for athletes. Anterior glenoid rim fracture has been described as a complication after initial surgical treatment in recurrent anterior instability. Objective: To evaluate the incidence of anterior glenoid rim fracture of the glenoid through anchors and return to sport after revision surgery. Materials and Methods: 979 surgeries were performed for shoulder instability in a period of 14 years (2006-2020), within which 379 were reported as isolated anterior shoulder instability and were repaired by arthroscopic technique. In our series the incidence of anterior glenoid rim fracture through anchors was 2% (8/379 patients) and all of them were after a major trauma. The age recorded at the time of the initial surgery was 20 years (range, 17-24) and the mean delay between arthroscopic Bankart repair and recurrence was 30 ± 29 months (range, 9-91). Age at recurrence was 23 ± 3 years (range, 18-26). Six patients were initially operated on with bioabsorbable anchors and 2 patients with titanium anchors. The average follow-up was 58 ± 30 (range, 13 – 104) Results: Five patients underwent revision surgery with Bankart Bridge repair technique associated with remplissage, while on three occasions Latarjet surgery associated with remplissage was the choice of revision surgery. The mean age at the time of revision surgery was 24 ± 5 years (range, 18 – 35). One patient sustained an axillary neuropraxia after Latarjet revision surgery. All the patients returned to their sports activity at a similar level prior to the injury. Conclusion: Fracture through anchors in athletes is a rare complication of an arthroscopic Bankart repair, and could be associated with the use of bioabsorbable anchors. Identifying this rare complication is of utmost importance for a proper treatment allowing young patients to return to sport without any limitation.

Category: Shoulder - Instability

Evaluation of Kinesiophobia in Patients Treated with Arthroscopic Bankart Repair for Recurrent Anterior Glenohumeral Instability

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Summary:
Kinesiophobia (fear of movement) is a major limiting factor in the return to pre-injury sport level after arthroscopic Bankart Repair. The study aims to gain insights into how kinesiophobia affects shoulder pain and function after surgery. Data: Background Kinesiophobia (fear of movement) is a major limiting factor in the return to pre-injury sport level after surgery of anterior gleno-humeral instability. The study aims to analyze the prevalence of kinesiophobia in patients with anterior glenohumeral instability treated with Bankart procedure and the correlation between the kinesiophobia and some outcome predictors of the pathology and sociodemographic features. Methods A retrospective study was conducted. Patients who underwent arthroscopic bankart repair starting from December 2018 in our institution, with a minimum of 6 months after the surgery, were included. A preoperative computed tomography (CT) scan was performed in all patients. Exclusion criteria were: glenoid bone deficit > 20% of the area of the inferior part of glenoïd, bipolar bone defects with ‘off-track’ pattern, combined treatment with rotator cuff tears, and/or previous surgery. Primary outcome was the Tampa Scale of Kinesiophobia (TSK-13). Secondary outcomes were: the Western Ontario Shoulder Instability Index (WOSI), the Depression Anxiety Stress Scale 21 (DASS-21), the Tegner Activity Scale and the H-G Ratio. Univariate and Multivariate analysis was performed to determine which predictors were independently associated with the kinesiophobia. Significance was set at < .05. Results The study included 132 patients: 109 males and 23 females. Mean age (± SD) of patients was 19 ± 8 years. The mean follow-up was 84 months. The mean pre-operative shoulder dislocation was 15. 117(89%) patients were performing sport. 19 patients (14.4%) experience a recurrence of dislocation after surgery. The analysis showed a significant correlation between kinesiophobia and the number of pre-operative shoulder dislocation and both with recurrence of post-operative shoulder dislocation. All the score (ASES, WOSI, Tegner, DASS-21) in the post-operative setting showed a significant correlation with Kinesiophobia. Conclusion Kinesiophobia after arthroscopic Bankart repair is independently associated with number of pre-operative shoulder dislocation, recurrence of post-operative shoulder dislocation and score for subjective evaluation at follow-up.

Category: Shoulder - Instability

Long-Term Outcomes Following Arthroscopic Labral Reconstruction with a Modified Inferior Capsular Shift for Anterior Shoulder Instability

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Summary:
Arthroscopic labral reconstruction with a modified inferior capsular shift for anterior shoulder dislocation at average 13-year follow-up yields a low failure rate, no evidence of glenohumeral joint narrowing, and a high rate of return to sports without risk or increased recurrence.

Data:
Background: Treatment for the dislocated shoulder is fraught with controversy across the globe. Recurrence rates of anterior shoulder instability are highest in young, high risk athletes. The purpose of this study was to evaluate patient activity level and function following arthroscopic labral reconstruction with a modified inferior capsular shift by a single surgeon at a mean 13-year follow-up comparing patients greater than 25 years of age to patients less than 25 years old. Methods: Between 1999 and 2010, 56 patients with a documented anterior dislocation underwent an arthroscopic labral reconstruction with a modified inferior capsular shift and met the inclusion criteria. The technique utilized included a minimum of 3 anterior suture anchor placed below the equator along with sutures placed to perform a glenoid-based inferior capsular shift with or without a rotator interval closure.
depending on the size of the Hill Sachs lesion. Patients completed the ASES, MISS, WOSI, DASH, Rowe, Constant, and VR-12 patient-reported outcomes scores at final follow-up. Patients were asked to score their satisfaction with the outcome of their surgery on a scale of 1 (unsatisfied) to 10 (very satisfied). A sense of apprehension or a subluxation event was categorized as a failure and a dislocation event was categorized as a reinjury. Plain radiographs were independently reviewed for glenohumeral joint space decrease from preoperative films. The presence of OA, failure, and loss of motion were recorded in both groups. Patients were divided into 2 groups by age (< 25 years old vs ≥25 years old) for analysis. Results: There were 26 patients in the younger, high risk group (< 25 years) and 28 patients in the older patient group (< 25 years of age). The younger group were all males that participated in moderate to vigorous sports as categorized by American College of Sports Medicine, and 88% had traumatic dislocation prior to surgery. There were 2 (3.7%) failures requiring revision surgery and 3 (5.6%) reinjuries requiring surgery. All revisions were in male patients, who participated in high-risk sports (baseball, hockey, sailing). At mean 13-year follow-up, all patients in the younger, high risk age group and the older age group returned to sport activities. All patients in the younger, high risk group returned and only 71% (21/28) of patients the older group returned to sport activities at an equal level as prior to injury (p = 0.014). No evidence of glenohumeral narrowing was noted on plain radiographs. No differences were seen in outcome scores between the cohorts at follow-up. Conclusion: We report excellent results in both young, high risk and older patients following arthroscopic labral reconstruction with a modified capsular shift at mean 13-year follow-up. The addition of glenoid-based arthroscopic labral reconstruction with a modified inferior capsular shift resulted in low failure rate, high return to sport rate with no loss of motion, and no evidence on plain radiographs of narrowing of the glenohumeral joint.

Category: Shoulder - Instability

Distal Clavicle Versus Traditional and Congruent Arc Latarjet: Comparison Of Surface Area and Glenoid Apposition With 3-Dimensional CT and MRI

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Summary: This study reports on the feasibility of 3D MRI for evaluation of distal clavicle and coracoid autograft options in patients with glenohumeral instability.

Data:
Background Limited studies have compared graft-glenoid apposition and glenoid augmentation area between the latarjet and distal clavicle grafts in glenohumeral stabilization. Additionally, pre-operative planning is typically performed using computerized tomography (CT), and few studies have used 3-dimensional magnetic resonance imaging (3D-MRI) reformations to assess graft dimensions. The purpose of the study was two-fold: 1) compare bony apposition, glenoid augmentation, and graft width among coracoid and distal clavicle bone augmentation techniques and 2) to determine the viability of 3D-MRI to assess bone graft dimensions. Methods Twenty-four patients with recurrent glenohumeral instability and bone loss were included in this study. 3D-CT and 3D-MRI reformations were utilized to measure pertinent dimensions for five orientations of coracoid and distal clavicle autografts: (1) standard Latarjet (SLJ), (2) congruent arc Latarjet (CLJ), and (3) distal clavicle attached by its posterior surface, (DCP) and (4) inferior surface (DCI), and (5) resected end (DCR). Glenoid augment area was defined as the graft surface area contributing to the glenoid. Bone-on-bone apposition was defined as the graft-clinoid contact area for bone healing potential, and graft width was pertinent for fixation technique. Paired t-tests were performed to compare graft sizes between patients and compare 3D-CT vs 3D-MRI measurements. Results CLJ had the largest glenoid augmentation area (mean: 318mm2, sd: 74) while SLJ displayed the most apposition (mean: 318mm2, sd: 74). DCI had the largest graft width (mean: 21mm, sd: 4). Paired t-tests revealed no significant differences between Latarjet methods, whereas distal clavicle grafts varied significantly with orientation. All 3D-CT and 3D-MRI measurements were within 1mm of each other, and only two demonstrated statistically significant difference (coracoid width: 13.03 vs 13.98mm, p = 0.010; distal clavicle thickness: 9.69 vs 10.77, p = 0.002). 3D-CT and 3D-MRI measurements demonstrated strong positive correlation (r = 0.6 and p < 0.001 for all dimensions). Conclusion Glenoid augmentation, bony apposition, and graft width can vary with coracoid or distal clavicle graft type and orientation. Differences between 3D-CT and 3D-MRI were small and likely not clinically significant. 3D-MRI is a viable method for pre-operative planning and graft selection in glenoid bone loss.

Category: Shoulder - Instability

Evaluation of External Rotation After Combined Bankart Repair And Remplissage For Anterior Shoulder Instability With Off-Track Hill-Sachs Lesion and Subcritical Glenoid Bone Loss <20%

Abstract ID# 22086
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Summary: Hill-Sachs interval, number of anchors used in capsulotенosis and time after operation are possible predictive factors of limitation of external rotation after combined Bankart repair and remplissage for anterior shoulder instability with off-track Hill-Sachs lesion and glenoid bone loss <20%.

Data: Purpose: Bankart repair and Remplissage (BRR) has been advocated for anterior shoulder instability with off-track Hill-Sachs lesion (HSL) and subcritical glenoid bone loss (<20%). The purpose of this study was to evaluate the functional results after BRR, with particular focus on external rotation (ER). Methods: 41 anterior shoulder instability patients with off-track HSL and glenoid bone loss <20% were treated with BRR and followed for a median of 23 months. Functional outcome was assessed using the American Shoulder and Elbow Surgeons score (ASES) and the Western Ontario Shoulder Instability Index (WOSI). Shoulder range of motion (ROM) was assessed and compared to the opposite side including forward flexion (FF), external rotation at the side (ERs), external rotation in abduction (ERa) and internal rotations in abduction (IRa). Patient demographics, sports participation, number of dislocations, duration of instability, length of follow up, glenoid track, Hill-Sachs interval (HSI), HSL depth and the number of anchors used for the remplissage were recorded for correlation with the results. Results: All patients showed marked improvement in the postoperative WOSI and ASES scores compared to preoperative status by a mean difference of 46.1% ± 19.5 and 29.2 ± 13.3 respectively. The mean reduction in ERs, ERa, FF and IRa were (22.5% ± 16.18), (13.09% ± 8.2), (2.46% ± 1.92) and (10.12% ± 6.8) respectively. ERs limitation was significantly associated with time of final follow up (P = 0.001, r = -0.711), HSI (P = 0.001, r = -0.752), number of dislocations (p = 0.013, r = -0.385), sport participation (p = 0.010) and number of remplissage anchors (p = 0.004). ERa limitation was significantly associated with time of final follow up (P = 0.001, r = -0.569), HSI (p = 0.001, r = 0.605) and number of remplissage anchors (p = 0.003). Regression analysis revealed 3 significant predictive factors for ER limitation including time of final follow up, HSI and number of anchors. Conclusion: BRR results in good functional outcomes in patients with less than 20% glenoid bone loss and an off-track HSL. The results suggest that postoperative limitation in ER decreases overtime. Particular consideration and appropriate counselling should be undertaken in patients with large HSI and when more than one anchor for capsulotенosis is anticipated due to an increased risk of ER limitation.

Category: Shoulder - Instability

Open Latarjet Using One-Screw Fixation Achieves a High Rate of Graft Fusion

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Summary: One-screw fixation in the Latarjet procedure is an alternative to double screw fixation. It allows a high rate of fusion at 3 months. This technique can be used safely particularly if the surgeon judges that there is a risk of graft fracture like in