Summary: Early versus delayed arthroscopic treatment of high-grade acromioclavicular joint instability.

Data: Background: Arthroscopic assisted cortical fixation devices have been increasingly used in the operative management of both acute and chronic cases of acromioclavicular joint instability (ACJI). It has been hypothesized that delayed surgical management leads to inferior clinical and radiological outcomes compared to acute treatment. The purpose of this study is to compare clinical and radiologic outcomes, scapula dyskinesia, and failure/revision rates of arthroscopically treated acute with chronic ACJI. Methods: This retrospective study of prospectively collected data included all surgically treated patients with chronic ACJI between 2013 and 2017, matched 1:1 to a group of acute ACJI patients treated during the same time period. Chronic ACJI was defined as delayed surgical treatment > 21 days after injury. Chronic cases received an additional hamstring autograft next to the suture pulley systems. Follow-up was obtained at an average of 3.2 years (range: 1.4-6.2). Clinical outcome scores included the Constant Score (CS), Taft Score (TF), Nottingham Clavicle Score (NCS), ACJI Score, Sick Scapula Score (SSS), Subjective Shoulder Value (SSV), Subjective Shoulder Test (SST), American Shoulder and Elbow Score (ASES) and the VAS pain scale. Radiological follow up was obtained pre- and post-operatively and at final follow up. The 2-year results were compared to the results of a 1:1 matched pair comprising patients that were treated with an acute ACJI during the same period. Results: 33 out of 41 (80.5%) of chronic ACJI cases were available for follow-up and were compared with 33 matched-paired cases of acute ACJI (out of 141). The clinical scores were significantly better in the acute cohort for the CMS (92.8 vs 88.8, p = 0.030); ASES (91.1 vs 85.1, p = 0.002); SSS (1.4±1.6 vs 3.4±2.5, p = 0.0004); NCS (86±13 vs 81±13, p = 0.049); TF (9.9±1.9 vs 9.0±2.1, p = 0.030) and ACJI (83±13 vs 75±13, p = 0.003). In contrast to the chronic cohort, the acute cohort illustrated a significant loss of reduction at follow up (p = 0.020). Conclusion: Based on the results of this study, early arthroscopic assisted operative treatment seems superior to delayed surgical intervention. Furthermore, an additional autograft loop leads to less loss of reduction compared to suture pulley/suspensory loop fixation standalones. Level of evidence: IV Keywords: Acute AC-Joint Instability; Chronic AC-Joint Instability; Scapula Dyskinesia; Sick Scapula Syndrome; Arthroscopic assisted treatment.

Category: Shoulder - AC Joint

The Importance of a Structured Failure Analysis in Revision Acromioclavicular Joint (ACJ) Surgery: A Multi-Rater Agreement on the Causes of Stabilization Failure from the ISAKOS-Shoulder Committee

Summary: According the ISAKOS shoulder committee, biological failure is noted as the most common reason for failure of primary acromioclavicular joint stabilization followed by technical and traumatic failure.

Data: Background Acromioclavicular joint (ACJ) stabilizations are associated with a high overall failure rate, while 95% of these patients requiring subsequent revision surgery. Consequently, understanding the specific cause of primary ACJ stabilization failure is paramount to improving surgical decision making in this challenging patient cohort. Purpose To (1) identify risk factors and mechanisms for failure following primary arthroscopically-assisted ACJ stabilization to highlight the importance of conducting a detailed failure analysis and to (2) establish revision strategies based on real-life cases of primary failed ACJ stabilization. Methods A survey was shared internationally among members of the International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine (ISAKOS) shoulder committee. The survey contained failure analysis of 11 real-life cases of failed primary arthroscopically-assisted ACJ stabilization. For each case, a thorough patient history, standardized x-rays and computer tomogrtaphy (CT) scans were provided. Participants were asked to give their opinion on bone tunnel placement, cause of failure (biological, technical, traumatic, or combined), the stabilization technique used as well as give a recommendation for revision. Results Seventeen members of the ISAKOS shoulder committee completed the survey. Biological failure was considered the most common cause of failure (47.1%), followed by technical (35.3%) and traumatic (17.6%) failure. The majority deemed two modifiable factors (i.e., patient’s profession and sport) as well as non-modifiable factors (i.e., patient’s age and time from trauma to initial surgery) to be risk factors for failure. In 10 of 11 cases, the correct fixation device was used in the primary setting (90.9%; 52.8-82.4% agreement), however, in eight of those cases, the technique was not performed correctly (80.0%; 58.8-100% agreement). In 8 of all 11 cases, the majority recommended an arthroscopically-assisted technique with graft augmentation for revision (52.9-58.8% agreement). Conclusion Biological and technical failure are the most common reason for failure in primary ACJ stabilization followed by traumatic failure. Besides biological failure, failure can be triggered by technical errors such as clavicular or coracoidal tunnel misplacement. Consequently, a detailed failure analysis including preoperative CT should be conducted before performing revision surgery and, if possible, an arthroscopically-assisted technique with graft augmentation should be prioritized in revision ACJ surgery.
this study was 48.84% (42/86). The clavicular inter-tunnel ratio showed no statistically significant difference between both groups (8.76 ± 0.43% VS 8.3 ± 0.35%, p=0.32). Neither conoid nor trapezoid ratio was different between both groups. However, the initial reduction degree was statistically significantly different between both groups (p=0.001). Over-reduction of clavicle could reduce the risk of radiographic failure (15.38% VS 34.29%). On the other hand, under-reduction could increase the risk (73.68% VS 34.29%). Conclusion Clavicular inter-tunnel ratio failed to show any association with radiographic failure at 6 months. However, the initial reduction degree greatly affected the radiographic outcome. Further work with more advanced imaging that could cover all of the potential factors is needed to specify the causes of radiographic failure after this operation.

Category: Should - AC Joint

Patient-Reported, Clinical and Radiological Factors Associated with the Result After Non-Surgical Management of Acute Type III and V AC Joint Dislocations with the Option of Delayed Surgical Reconstruction

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Summary:
This prospective cohort study of 95 patients with type III and V acromioclavicular joint dislocation found that shoulder range of motion at baseline and 6 weeks follow-up is associated with patient-reported outcome 3 months, 6 months, and 1 year after the injury and with the risk of surgery. The objective of this study was to investigate the association between demographical, clinical, functional and radiographical factors at baseline and 6 weeks after Rockwood type III/V AC joint dislocation with the result after 3 months, 6 months and 1 year. Methods The study was a prospective cohort study with clinical, radiographical and patient-reported outcome assessment at baseline and 6 weeks, 3 months, 6 months and 1 year after acute AC joint dislocation. Inclusion criteria were patients aged 18-60 with acute AC joint dislocation and >50% superior displacement of the clavicle to the acromion. All patients were treated non-surgically with 3 months of home-based training and with the option of delayed surgical intervention. The primary outcome was the Western Ontario Shoulder Instability Index (WOSI) (0-100%, 0 being best). Secondary outcome was surgery yes/no. The following variables at baseline (b) and/or 6 weeks (6w) were investigated for association with WOSI: 3 months, 6 months and 1 year after the injury and with the risk of surgery using linear or logistic regression analysis: Age (b), sex (b), workload (b), pre-injury participation in overhead sports (b), WOSI (b,6w), Shoulder Pain and Disability Index (SPADI) (0-100, 0 being best) (b,6w), range of motion (ROM) in shoulder flexion and abduction (b,6w), self-reported pain during cross-over (b,6w), presence of scapular dyskinesia (6w), horizontal and vertical instability (6w), O’Briens test (6w), cosmesis (b,6w), overriding of the clavicle to the acromion (b,6w) and the coracoclavicular difference on radiographs (b,6w.). A model to predict the need of surgical intervention was suggested and its sensitivity and specificity were determined. ClinicalTrials registration NCT03727178. This publication concerns subjects who had AC joint dislocation of Grade III to Grade VI, according to Rockwood classification, were included irrespective of their age and duration of injury. All the cases were operated by the same surgeon. Patients were followed up at 3 months, 6 months and one year for clinic-radiological outcome. Local institutional board ethics approval was attained and appropriate consent was obtained. All patients were evaluated clinically using a Constant Score, ASES, LARS in tunnels which prevents the tunnel widening, bone erosion and screw fracture was noted radiologically and the CC distance was maintained in all cases. At a minimum follow up of 12 months, no tunnel widening or acromial fracture occurred. The possible reason would been the use of screws for fixation in clavicular tunnels and the technique utilized to only reconstruct the CC ligament which would only provide vertical instability. In our technique we use three tunnels; two in clavicle and one in acromion to reconstruct both AC and CC ligaments. This provides both horizontal and vertical stability by complete restoration of superior shoulder suspensory ligament complex. No screws are used for fixation of the LARS in tunnels which prevents the tunnel widening, bone erosion and screw fracture.