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: Shoulder - 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 was associated with patient-reported outcome 3 months, 6 months, and 1 year after the injury and with the risk of surgery.

Data: Background The treatment of Rockwood type III and V acromioclavicular (AC) joint dislocations is controversial and an individualized treatment algorithm is yet to be developed. The objective of this study was to investigate the association between demographic, 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%, 100% 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 objective 3. Results: Ninety-five patients with Rockwood type III/V AC joint dislocation, male:female ratio 9.6:1, were included. Pre-injury participation in overhead/collision sports was a risk factor of surgery with an OR of 5 (p=0.03). At baseline, reduced ROM in both abduction and flexion was statistically significantly associated with reduced WOSI score at all time-points and risk of surgery. At 6 weeks, reduced ROM in both abduction and flexion, reduced WOSI, increased SPADI and increased pain during cross-over was statistically significantly associated with reduced WOSI score at all time-points and risk of surgery. Radiographic measurements were not associated with the result. The remaining outcomes showed inconsistent associations. At 6 weeks follow-up, patients eventually requiring surgery could be detected with a sensitivity of 100% and a specificity of 94% based on a SPADI score of >30 points and a ROM <140 degrees in either flexion or abduction. Conclusion ROM was the only factor consistently associated with both WOSI and risk of surgery. Pre-injury participation in overhead/collision sports was associated with reduced WOSI scores and increased risk of surgery. Six weeks after the injury, it was possible to detect patients in need of surgery based on ROM and SPADI with a sensitivity of 100% and a specificity of 94%.

Category: Shoulder - AC Joint

Superior Shoulder Suspensory Complex Reconstruction For Acute And Chronic ACJ Dislocations Using Lars Artificial Ligament: Evaluating The Early Outcome Of A 3-Tunnel Technique

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Summary: Clinical outcomes from acute and chronic ACJ reconstruction with LARS ligament using a 3-tunnel technique.

Data: Introduction: Acromioclavicular joint dislocations are commonly occurring injury accounting for 9-12% of the shoulder injuries. It is generally agreed that Rockwood type I and II are managed conservatively and surgical management is reserved for patients with higher grades of injury; type III to VI. More than 150 surgical techniques have been described in literature with biomechanical and anatomic studies to support efficacy and variable clinical outcomes; but there is still no consensus regarding the most appropriate technique for management of higher grades of injury. In this research, we will be describing our 3-tunnel technique of surgical management of both acute and chronic ACJ dislocations with clinical outcomes. Material and Methods: This study includes 21 consecutive patients, from July 2016 to Jan 2021, with ACJ dislocation who underwent superior shoulder suspensory ligament complex reconstruction using LARS. Only subjects who had ACJ 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, VAS, SST at sequential follow-up. Results & Discussion: The mean age of the study group was 48 years (range 16 – 76 years). Right shoulder was affected in 11 patients while left shoulder in remaining 9 patients. All patients reported trauma as the causative factor. 9 patients had Rockwood type 5 injury; 2 patients had Rockwood type 4 injury and 9 patients had Rockwood type 3 injury with anteroposterior instability. One patient did not complete the follow up at one year and was excluded. Mean duration of dislocation was 19 months (range 2 days – 15 years). At a minimum follow up of 12 months, no tunnel widening or acromial fracture was noted radiologically and the CC distance was maintained in all cases. All patients returned to full active lifestyle, work and sports. Improved patient outcomes were reported for VAS (from 4 to 1), Constant (from 43 to 74), SACS (from 62 to 10), ASES (from 49 to 84), and SST (from 16 to 78), respectively. The range of motion improved in forward flexion from 130° to 166°; lateral elevation from 118° to 155°; and ER from 54° to 65°. No re-rupture or loss of reduction was noted. One case required removal of LARS at one year due to infection. Several synthetic ligaments have been used for the purpose of ACJ reconstruction however, complications such as ligament failure, incomplete reduction, foreign body reaction, bony erosion, coracoid fractures, and clavicle fractures have been reported with these implants. In comparison to our results, the failure rate and loss of reduction was reported higher in many of these studies. The possible reason would be 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