No Difference In Post-Operative Outcomes For High-Grade Acromioclavicular Joint Surgery Performed Acutely vs. Chronically

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Summary:
Patients who underwent AC joint surgery acutely (<6 weeks) had similar post-operative outcomes to patients who underwent surgery chronically (>6 weeks) after initial injury.

Data:
Background: There have been no large studies that directly compare long term outcomes in patients with Rockwood grade III-V acromioclavicular (AC) joint separations treated with acute vs. chronic repair. Therefore, the purpose of this study was to compare post-operative outcomes between patients who undergo high-grade AC joint surgery acutely (<6 weeks) vs chronically (>6 weeks).

Methods: A list of all AC joint surgery patients from 2010-2019 was obtained from the medical records. Chart review was conducted to determine patient demographics, time from injury to surgery, injury grade, and surgical technique, as well as outcomes and complications of AC joint surgery. Post-operative American Shoulder and Elbow Surgeons (ASES) and Single Assessment Numeric Evaluation (SANE) scores were also collected via RedCap. Patient radiographic outcomes were retrospectively reviewed by reviewing preoperative, immediate postoperative, and follow-up AP views of the operative shoulder and measuring the coracoclavicular (CC) interval distance. Loss of reduction was defined as a follow-up change of greater than 5 mm from the immediate postoperative radiographs measurement. Several multivariate analyses were conducted with post-operative ASES, SANE, and CC distance as the outcomes of interest in order to account for demographic differences between groups. Results: Overall, 225 patients (113 acute, 112 chronic) were included in this study with an average follow-up of 3.5±2.8 years, average age of 40±15 years, and 86% being male. Patients in the acute group underwent surgery 2±1 weeks after initial injury while patients in the chronic group underwent surgery 42±35 weeks after injury. Significant differences in patient age, BMI, injury grade, surgical technique utilized, and pre-operative CC distance were observed between groups (all \(p<0.05\)). Rates of revision, loss of reduction, infection, fracture, and total complication rate, as well as post-operative ASES scores did not differ between groups. Patients treated acutely had a lower rate of loss of reduction (1.8mm v. 3.2mm, \(p=0.044\)), a larger decrease in CC distance at latest follow-up compared to pre-operatively (11.8mm v. 9.0mm, \(p=0.002\)), and better SANE scores (85.5 v. 75.5, \(p=0.032\)). All other post-operative outcomes did not differ between groups.

After controlling for confounding variables such as age, sex, BMI, injury grade, surgical technique, and time from injury to surgery, multivariate analysis found that female patients had lower ASES scores than male patients, while all other variables did not significantly relate to ASES score, SANE score, or post-operative CC distance. Conclusion: Patients who underwent AC joint surgery acutely (<6 weeks) had similar post-operative outcomes to patients who underwent surgery chronically (>6 weeks) after initial injury. Multivariate analysis found that time from injury to surgery did not affect post-operative ASES scores, SANE scores, or post-operative CC distance.

Category: Shoulder - AC Joint

The ISAKOS Subclassification of Rockwood Type III AC Joint Dislocations in a Stable Type A and an Unstable Type B Is Not Clinically Relevant. A Prospective Cohort Study of 95 Patients Primarily Treated Non-Surgically

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Summary:
The ISAKOS subclassification of Rockwood type III AC joint dislocations in a stable type A and an unstable type B is not clinically relevant.

Data:
Background The treatment of Rockwood type III AC joint dislocations has been a subject of controversy for decades. To assess this problem ISAKOS upper extremity committee in 2014 suggested a subclassification of the injury in a stable type A recommended non-surgical treatment and an unstable type B recommended surgical treatment, defined by the presence of scapular dyskinesis and overriding of the clavicle to acromion on a modified lateral radiograph. The objective of the study was to investigate if this subclassification is clinically relevant. Methods This was a prospective cohort study. Inclusion criteria were patients aged 18-60 with trauma to the shoulder with subsequent onset of pain within the past 7 days and a radiograph from the Emergency Room revealing >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. Patients were assessed at baseline and at follow-ups 6 weeks, 3 months, 6 months and 1 year after the injury. At 6 weeks follow-up patients were categorized as stable according to the ISAKOS classification if they presented with no scapular dyskinesis and no overriding of the clavicle to the acromion and unstable if they presented with any of the two. The primary outcome was the Western Ontario Shoulder Instability Index (WOSI) score (0-100%, 100% being the best). Between-group analyses were performed with students’ t-test for skewed data and the Mann-Whitney U test for skewed data and the Fishers exact test for categorical data. ClinicalTrials registration NCT03727178. This publication concerns objective 1. Results Ninety-five patients, male/female ratio 9.6:1, were included. The Rockwood classification was not consistent over time and changed in 30/95 of cases between type III and V, why both type III and V were included. At the 6 weeks follow-up 20 patients were classified as stable and 68 were classified as unstable. There was a statistically significant but not clinically relevant difference in WOSI score between the two groups at 6 months (\(p=0.03\)), but not at 3 months and 1 year. No patients from the stable group were referred for surgery. From the unstable group, 9/68 (13%) had surgery at a mean of 189 SD 99 days after the injury. Patients presenting with scapular dyskinesis had worse WOSI scores at all time-points compared to those without scapular dyskinesis. Conclusion The ISAKOS subclassification of Rockwood type III in a stable type A and an unstable type B is not clinically applicable. The presence of scapular dyskinesis was associated with an inferior result.

Category: Shoulder - AC Joint

Prospective Cohort Study of 95 Patients Primarily Treated Non-Surgically in a Stable Type A and an Unstable Type B Injuries of Rockwood Type III Acromioclavicular Joint: Evaluation of The ISAKOS Subclassification

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Summary:
The ISAKOS subclassification of Rockwood type III AC joint dislocations in a stable type A and an unstable type B is not clinically relevant.

Data:
Background The treatment of Rockwood type III AC joint dislocations has been a subject of controversy for decades. To assess this problem ISAKOS upper extremity committee in 2014 suggested a subclassification of the injury in a stable type A recommended non-surgical treatment and an unstable type B recommended surgical treatment, defined by the presence of scapular dyskinesis and overriding of the clavicle to acromion on a modified lateral radiograph. The objective of the study was to investigate if this subclassification is clinically relevant. Methods This was a prospective cohort study. Inclusion criteria were patients aged 18-60 with trauma to the shoulder with subsequent onset of pain within the past 7 days and a radiograph from the Emergency Room revealing >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. Patients were assessed at baseline and at follow-ups 6 weeks, 3 months, 6 months and 1 year after the injury. At 6 weeks follow-up patients were categorized as stable according to the ISAKOS classification if they presented with no scapular dyskinesis and no overriding of the clavicle to the acromion and unstable if they presented with any of the two. The primary outcome was the Western Ontario Shoulder Instability Index (WOSI) score (0-100%, 100% being the best). Between-group analyses were performed with students’ t-test for skewed data and the Mann-Whitney U test for skewed data and the Fishers exact test for categorical data. ClinicalTrials registration NCT03727178. This publication concerns objective 1. Results Ninety-five patients, male/female ratio 9.6:1, were included. The Rockwood classification was not consistent over time and changed in 30/95 of cases between type III and V, why both type III and V were included. At the 6 weeks follow-up 20 patients were classified as stable and 68 were classified as unstable. There was a statistically significant but not clinically relevant difference in WOSI score between the two groups at 6 months (\(p=0.03\)), but not at 3 months and 1 year. No patients from the stable group were referred for surgery. From the unstable group, 9/68 (13%) had surgery at a mean of 189 SD 99 days after the injury. Patients presenting with scapular dyskinesis had worse WOSI scores at all time-points compared to those without scapular dyskinesis. Conclusion The ISAKOS subclassification of Rockwood type III in a stable type A and an unstable type B is not clinically applicable. The presence of scapular dyskinesis was associated with an inferior result.