The Operative Versus Non-Operative Treatment of Common Upper Extremity Injuries: What Does Evidence-Based Medicine Tell Us?

Acute acromio-clavicular dislocation

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INTRODUCTION: Acute AC joint dislocation is a common injury with an estimated incidence of 1.8/10000 inhabitants per year. The Rockwood classification is worldly used to describe these lesions. More than 80% of cases are graded I to III.
Conservative treatment is well admitted for grade I and II, but there is still a debate for higher grades. Larsen in 1986 and Bannister in 1989 couldn't demonstrate in prospective series differences between surgical and non-surgical treatment, but advocated to still use surgical treatment for high-demand people.
With this lack of evidence in the literature, now mostly filled with technical tips (how, but not when?!), we sought to perform a randomized clinical trial of operative versus non-operative treatment of acute AC joint dislocations using modern surgical fixation and patient-based outcome measures (COTS group, Canada).
METHODS: We performed a prospective, multi-center, randomized clinical trial comparing operative repair with hook plate fixation versus non-operative treatment for acute (< three weeks old) complete (Grades III, IV, V) dislocations of the AC joint. The primary outcome measure was the Disabilities of the Arm, Shoulder, and Hand (DASH) score at one year post-injury. Assessment also included a complete clinical assessment, the Constant score, the SF-36 score, and a radiographic evaluation at 6 weeks, and at three, six, twelve, and twenty-four months.
RESULTS: Eighty-three patients were randomized (operative repair 40, non-operative treatment 43). There were no demographic differences between the two groups (operative: male/female 36/4, non-operative 42/1, p=0.279, mean age operative group: 38.7 years, non-operative group: 37.3 years, p=0.778, dominant arm: operative group 24, non-operative 26, p=0.823, smoker: operative group 10, non-operative 16, p=0.338). The mechanisms of injury were similar between the two groups. DASH scores (a disability score – lower score is better) were significantly better in the non-operative group at six weeks (operative 46, non-operative 31, p=0.007), three months (operative 28, non-operative 16, p=0.01), and six months (operative 15, non-operative 8, p=0.03). There were no significant differences between the groups at one (operative 10, non-operative 6, p=0.189), or two (operative 3, non-operative 4, p=0.893) years post-injury. Similar values were seen for Constant scores at six weeks (operative 52, non-operative 75, p=0.000), three months (operative 69, nonoperative 85, p=0.001), six months (operative 83, non-operative 92, p=0.001) one year (operative 90, non-operative 94, p=0.006) and two years (operative 93, non-operative 93, p=0.770). Additionally, the re-operation rate was significantly lower in the non-operative group ($p<0.05$).
CONCLUSION: Hook plate fixation is not superior to non-operative treatment for the treatment of acute, complete dislocations of the AC joint. The non-operative group had better early scores, although both groups improved from a significant level of initial disability to a good or excellent result (mean DASH score 3, mean Constant score 93) at two years. At the present time, there is no clear evidence that operative treatment with hook plate fixation improves short term outcome for complete AC joint dislocations. While the radiographic alignment of the acromio-clavicular joint is improved with surgical repair, the long term implications of this are unclear.