

## Acromioclavicular Dislocation: Conservative or Surgical Therapy

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**Reference:** Phillips AM, Smart C, Groom AFG. Acromioclavicular dislocation: conservative or surgical therapy. *Clin Orthop*. 1998;353:10-17.

**Clinical Question:** Among patients with acromioclavicular (AC) dislocation, does surgical intervention produce better outcomes than conservative therapy?

**Data Sources:** Studies were identified by a MEDLINE search (1966-1997) and a manual search of the reference lists of each relevant study identified. The medical subject heading of *acromioclavicular dislocation* was used as the primary search term.

**Study Selection:** The search was limited to English-language journals listed in *Index Medicus*. Studies were included if they described severely displaced dislocations of the AC joint, mostly characterized as grade III injuries (Allman or Rockwood classification) or if there was at least 1-cm displacement of the clavicle. If more than 1 study included the same group or subgroups of patients, the study with the best assessed methods was used. Studies were divided into 4 classifications: group 1, randomized trials of surgery versus conservative therapy; group 2, nonrandomized trials of surgery versus conservative therapy; group 3, surgical trials only; and group 4, conservative trials only.

**Data Extraction:** Data-extraction and study quality-assessment procedures were not explained in detail. The primary outcome measures were overall outcome, return to work, return to premorbid activities, complications, and radiographic features. Secondary measures were pain, range of motion, and strength. RevMan software (version 1.05; Cochrane Centre, Oxford, UK) was used for statistical analysis.

**Main Results:** Specific search criteria identified 600 articles for review, of which 24 met inclusion and exclusion criteria: 2 in group 2, 3 in group 3, 14 in group 4, and 5 in group 4. A total of 1172 patients were represented (surgical treatment = 833, mean = 43.7 months' follow-up; conservative treatment = 339, mean = 60.4 months' follow-up). Both surgically and conservatively treated patients reported similar overall satisfactory outcome (88% surgical versus 87% conservative). Patients with surgical treatment reported longer time to return to work and premorbid activities. Among patients treated surgically, 59% had additional surgery, 6% had wound breakdown, 20% had fixation failure, and 3% reported residual deformity. Only 1% of conservatively treated patients reported wound problems, 6% had additional surgery, and 37% reported residual deformity. In only 1 study did the authors report the incidence of posttraumatic arthritis: 25% among surgically treated and 43% among conservatively treated patients. Analysis of secondary outcomes suggests that both groups had little or no pain (93% surgical, 96% conservative) but more conservatively treated patients had normal to near-normal range of motion (95% versus 86%) and normal strength (92% versus 87%). Conservative treatment of AC dislocations is 21% more likely to result in a satisfactory outcome than surgical treatment (odds ratio = 0.79, 95% confidence interval = 0.36, 1.71). The need for additional surgery is 7.4 times more likely and infection is 3.2 times more likely with surgical management.

**Conclusions:** These data suggest that the current evidence does not support surgical treatment of grade III AC dislocations with respect to overall patient satisfaction as well as clinical outcomes such as pain, range of motion, and strength.

### COMMENTARY

Helping patients make an informed decision regarding the optimum treatment of acromioclavicular (AC) injuries is difficult and largely depends on individual patient characteristics as well as the severity of injury. In general, there seems to be no disagreement on the management

of types I and II injuries (as defined by Allman<sup>1</sup> and Rockwood et al<sup>2</sup>), usually treated conservatively, and types IV, V, and VI, almost always treated surgically.<sup>3</sup> However, controversy still exists over the treatment of type III injuries, the type of injuries studied in this review by Phillips et al. According to this meta-analysis, in terms of overall satisfaction, range of motion, strength, and complication rates, conservative

treatment of AC dislocations is indicated over surgical management. The only potential advantage for surgical treatment is the reduction in residual deformity; however, the degree of deformity does not correlate well with long-term improvements in pain, motion, or strength.<sup>3</sup>

Several factors not investigated in the article by Phillips et al may play a large role in a patient's decision regarding treatment. The occupation, activity level, and physical demands of daily functioning play an enormous role in global patient satisfaction. On the surface, these data might suggest that surgical intervention may be the best treatment for people in high-demand occupations and sports. Yet given the high incidence of postsurgical complications and the availability of reconstruction surgeries for chronic AC dysfunction,<sup>3,4</sup> attempting conservative treatment at first may be warranted for most type III AC injuries.<sup>3</sup> Another factor to consider when deciding on a treatment course is the time elapsed since the injury at the patient's first clinical presentation. A window of optimum opportunity for surgical intervention may correlate with the best treatment outcomes.<sup>3</sup> Further research should focus on factors that may be important predictors of both successful clinical outcomes and long-term patient satisfaction.

The review by Phillips et al has several limitations. The surgical group consisted of patients undergoing a variety of different surgical techniques; therefore, this review cannot determine whether one surgical technique is superior or inferior to another. The same holds true for patients undergoing con-

servative therapy who may have had varying lengths of immobilization, activity restrictions, and rehabilitation programs. Phillips et al also noted a definitive difference in the length of follow-up (43 months for surgical treatment versus 60 months for conservative treatment). The higher overall satisfaction noted in the conservative group may be related to the longer follow-up time, and the surgical group may actually report the same overall satisfaction if followed up for a longer time. The authors also stated that no one study included in this review had sufficient statistical power to detect a moderate difference in satisfaction. This suggests a substantial need for future studies requiring large numbers of patients, as many as 500 in each treatment group, to be able to detect a clinically meaningful difference in overall satisfaction.

## REFERENCES

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