Treatment of grade III acromioclavicular joint injuries: a systematic review

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CRD summary
This review compared the efficacy of operative and non-operative treatment of grade III acromioclavicular separations. The author concluded that limited evidence suggests that non-operative treatments are superior. Given the clinical variation between the primary studies and potential for bias and error within the review process, this may not be a reliable conclusion.

Authors' objectives
To determine whether grade III acromioclavicular (AC) separations would be best treated non-operatively or operatively.

Searching
MEDLINE and EMBASE were searched for English language literature; the search terms were reported.

Study selection
Study designs of evaluations included in the review
Studies comparing cohorts of patients were eligible for inclusion. Prospective randomised studies and retrospective study designs were included.

Specific interventions included in the review
Studies in which operative methods of treating grade III AC separations were compared with non-operative methods were eligible for inclusion. The operative interventions included were AC pinning, distal clavicular excision, fascial weave, Weaver-Dunn, coracoclavicular fixation and the Bosworth methods. The non-operative methods included were use of slings, arm casts, bandage, early range of motion, splints, taping and physiotherapy. Follow-up varied from 5.7 months to 13 years.

Participants included in the review
Studies of patients with grade III AC joint separations defined using the Tossy and Allman classification were eligible for inclusion.

Outcomes assessed in the review
There were no specific inclusion criteria for the outcomes. The outcomes assessed were the results of scales designed for individual studies (evaluating factors such as pain, stiffness, radiographic appearance motion, strength and function), subjective ratings of good, fair or poor outcome (based on pain, motion and ability to carry heavy objects), subjective answers to questions (about pain, strength and ability to throw) and strength measured by cable tensiometer.

How were decisions on the relevance of primary studies made?
One reviewer selected papers for the review.

Assessment of study quality
The author did not state that they assessed validity.

Data extraction
One reviewer performed the data extraction. No further details of the process were given.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative, grouped by study design.

How were differences between studies investigated?
Differences between the studies were not explicitly investigated.

**Results of the review**
Nine studies (n=448) were included: three were prospective and randomised (n=167) and six were retrospective (n=281).

The three prospective, randomised studies all concluded that non-operative treatment was superior to surgery. Outcomes after surgery were no better than after non-surgical treatment, and surgery was associated with more complications, increased convalescence, and longer time away from work and sport. Five of the six retrospective studies reported similar results to the prospective studies; the sixth study concluded that surgery was superior, but this study had methodological limitations.

**Authors’ conclusions**
Based on limited and low-level evidence, non-operative treatment was considered superior to traditional operative treatment in the management of grade III AC separations.

**CRD commentary**
The review question was well-defined and the inclusion criteria were clear with regard to the intervention and study design. The search included two relevant databases, but it does not appear that the author attempted to identify unpublished studies and only English language papers were included. This could have introduced publication and language bias into the review. The entire review process was conducted by the one author, which may have provided the potential for bias and error when making decisions about inclusion and when extracting the data. The author did not systematically assess study validity or differences between the studies, so the reliability of the individual studies and the synthesis is unclear. There also appeared to be a number of important clinical differences between studies, as several different surgical and nonsurgical techniques and outcome measures were used and the studies appeared to include a wide range of patients and follow-up periods. Given the clinical heterogeneity between the studies and potential for bias and error, reliable conclusions cannot be drawn, as the author indicated.

**Implications of the review for practice and research**
Practice: The author did not state any implications for practice.

Research: There is a need for prospective randomised studies using validated outcome measures, contemporary operative methods and stratifying patient populations that place high demands on the shoulder.

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.