
Comparison of manipulation and arthroscopic capsular release for adhesive capsulitis: a systematic review

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CRD summary

This review concluded that there was no clear difference between manipulation under anaesthesia versus arthroscopic capsular release in idiopathic or secondary-systemic adhesive capsulitis of the shoulder. A well-designed prospective cohort study or randomised controlled trial to directly compare the interventions was needed. Despite uncertainty over the reliability of the review results, the conclusion and recommendations are probably reliable.

Authors' objectives

To compare manipulation under anaesthesia alone with arthroscopic capsular release (with or without manipulation under anaesthesia) for the treatment of recalcitrant idiopathic or secondary-systemic adhesive capsulitis of the shoulder.

Searching

MEDLINE, EMBASE, CINAHL, Cochrane Central Register of Controlled Trials (CENTRAL) and Cochrane Database of Systematic Reviews were searched up to November 2011. Search terms were reported. Only studies reported in English were eligible for inclusion.

Study selection

Studies of any design that assessed either manipulation under anaesthesia or arthroscopic capsular release under regional or general anaesthesia were eligible for inclusion. Other types of procedures, including manipulation under intra-articular, local infiltration or focused peripheral nerve anaesthesia were excluded. Eligible patients had primary idiopathic adhesive capsulitis with symptom duration of at least three months. Patients with conditions such as diabetes could be included, but those with conditions such as concomitant rotator cuff tear, previous proximal humerus fracture, glenohumeral arthritis, stiffness or capsulitis related to recent shoulder surgery or calcific tendinitis of the rotator cuff were excluded. Studies were required to report follow-up for at least three months following treatment. Outcomes of interest were range of motion, patient-reported outcomes, and complications.

Included patients treated with manipulation had a median age of 55; those treated with arthroscopic capsular release a median of 50 years. Median symptom duration was nine months (range four to 24 months). About 60% of patients were women. A minority of studies excluded patients with diabetes.

Two reviewers independently selected the studies for inclusion.

Assessment of study quality

Studies were assigned to levels of evidence from I to IV. The authors did not state that they assessed the validity of the studies.

Data extraction

The mean and standard deviation or median and range were extracted for each outcome measure. For range of motion, data were extracted as or converted to pre-post treatment change scores. Where there were multiple treatment groups and only one was relevant, data were extracted only for that group.

Two reviewers were involved in the data extraction; extraction was performed in duplicate for just under half the studies.

Methods of synthesis

The studies were combined in a narrative synthesis structured by outcome reported. Median values were calculated for range of motion measures and differences between medians for the two interventions calculated. A similar approach was adopted with the most commonly used patient-reported outcome measure.

Results of the review

Twenty-two studies including 989 patients in 26 cohorts were included in the review. None directly compared outcomes for manipulation under anaesthesia with arthroscopic capsular release. One cohort study compared manipulation under anaesthesia with manipulation followed by arthroscopic capsular release where the surgeon felt the initial manipulation to be insufficient. Ten studies compared different types of release, assessed the effects of one treatment in different patient populations, or used a comparator treatment outside the scope of the review. Other studies were case series. Median follow-up was 35 months for arthroscopic capsular release and 24 months for manipulation under anaesthesia.

Range of motion: For abduction, median range of motion showed a 6° greater improvement with capsular release compared with manipulation under anaesthesia. A median of 8° greater improvement in external rotation at the side was also found. There was little difference in post-treatment improvement in forward elevation between the two treatments.

Patient-reported outcomes: The Constant score was the most commonly reported; the median pre-post change in score was similar (47 for manipulation versus 50 for capsular release). Mean post-treatment scores and median scores adjusted for age and gender were higher in groups of patients treated with capsular release.

Complications: The overall complication rate for either treatment was 0.5% based on 15 studies of 638 patients with three reported complications. These were one case of proximal humerus fracture for manipulation and one case each of superficial wound infection and brachial plexopathy for capsular release.

Authors' conclusions

Due to the low level of evidence and lack of studies with direct comparisons, there was no clear difference between manipulation under anaesthesia versus arthroscopic capsular release for subsequent shoulder range of motion or patient reported outcomes. There was a need for a well-designed prospective cohort study or randomised controlled trial to compare the interventions.

CRD commentary

The review question was clear and supported by specific inclusion criteria and data extraction procedures. The search was reasonable. The authors reported using methods to reduce the potential for reviewer bias or error in their review process.

No formal assessment of study quality was conducted, although the limitations of the studies were discussed. The included studies were limited by their non-controlled designs or use of non-relevant controls.

The method of synthesis was not clearly described; it was unclear whether it included weighting for the number of patients in each cohort. This combined with a lack of information on the methodological robustness of the included studies and their known design limitations makes the reliability of the actual results highly uncertain. Nevertheless the authors' conclusion that there was a lack of evidence for a clear difference and a need for further research is probably reliable.

Implications of the review for practice and research

Practice: The authors did not state any implications for practice.

Research: The authors stated that there was a need for a well-designed prospective cohort study or randomised controlled trial to compare manipulation under anaesthesia versus arthroscopic capsular release for recalcitrant idiopathic or secondary-systemic adhesive capsulitis of the shoulder. Standardised measures of shoulder range of motion and a validated and reliable joint and/or disease specific patient-reported outcome measure should be used in this study.

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