

Rotator Cuff Repair with or without Acromioplasty: A Systematic Review of Randomized Controlled Trials with Outcomes Based on Acromion Type

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INTRODUCTION: It is unclear whether the use of concomitant acromioplasty during rotator cuff repair (RCR) improves clinical outcomes and if the outcomes are affected by acromion type. The purpose of this study was to perform a systematic review of randomized controlled trials comparing clinical outcomes of RCR with and without acromioplasty, with a subanalysis of outcomes based on acromion type.

METHODS: A systematic review was conducted according to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines by searching PubMed, the Cochrane Library, and Embase to identify randomized controlled trials which directly compared outcomes between RCR with versus without acromioplasty. A subanalysis was performed on the studies which provided outcomes based on acromion type. The search phrase used was: *rotator cuff repair (acromioplasty OR subacromial decompression) randomized*. Patients were evaluated based on retear rate, reoperation rate, and patient-reported outcomes (PROs; Constant score, American Shoulder and Elbow Surgeons [ASES] score, University of California-Los Angeles shoulder scale, Simple Shoulder Test, EuroQol-visual analog scale, Disabilities of the Arm, Shoulder and Hand [DASH] score, Western Ontario Rotator Cuff [WORC] score, Short Form-12 [SF-12] score).

RESULTS: Five studies (2 level I, 3 level II) met inclusion criteria including a total of 211 patients undergoing RCR alone (Group A) and 198 patients undergoing RCR with acromioplasty (Group B). Patient age averaged 58.5 and 58.3 years in Groups A and B, respectively. The mean follow-up time was 52.9 months and the overall percentage of males was 54.1%. The rotator cuff tear size was 20.7 mm and 19.8 mm for Groups A and B, respectively. There were no significant differences found between groups for any of the PROs at final follow up. Overall retear rates did not significantly differ between groups based on acromion type. Between two studies that measured reoperation rate, there was a significantly higher reoperation rate for the non-acromioplasty (15%) versus acromioplasty (4.1%) group ($p=0.031$). One of these studies found that 5 of 9 patients (56%) with a type III acromion in Group A underwent reoperation compared with 0 of 4 patients with a type III acromion in Group B.

DISCUSSION AND CONCLUSION:

There is some evidence that acromioplasty during rotator cuff repair reduces the risk for later reoperation. This may be particularly true for patients with type III acromions, though further studies with larger sample sizes are needed to corroborate this data.