

## Does Concomitant Biceps Surgery Affect the Outcome of Rotator Cuff Repair?

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### Summary:

A concomitant biceps procedure at the time of rotator cuff repair was predictive of greater improvement in patient reported outcome measures at one-year compared to isolated rotator cuff repair.

### Abstract:

**Purpose:** To evaluate if outcomes of patients who undergo a long head of the biceps (LHB) procedure (tenotomy or tenodesis) at the time of rotator cuff repair (RCR) differ from those who undergo isolated RCR.

**Methods:** Patients undergoing an arthroscopic rotator cuff repair were followed prospectively from baseline and at regular intervals through one year. Patients were divided into three groups based on their operative procedure: RCR + biceps tenotomy, RCR + biceps tenodesis, or isolated RCR. The decision to perform a LHB tenotomy or tenodesis was at the discretion of the surgeon based on pre-operative symptoms, physical examination, and the appearance of the tendon at the time of surgery. Primary outcome measures were the American Shoulder and Elbow Surgeons (ASES) score, the Western Ontario Rotator Cuff (WORC) index, and a visual analog scale for pain (VAS). T-test was employed to measure the mean improvement from baseline to final follow-up in patients with a LHB procedure compared to isolated RCR patients, and to compare the LHB tenotomy and tenodesis groups. Stepwise linear progression was performed using LHB tenotomy or tenodesis as the primary predictor, controlling for additional demographic and clinical variables known to influence outcomes. ANOVA was used to evaluate the three individual groups.

**Results:** 80 patients were included in the analysis. The biceps procedure group had more females (22 vs 7,  $p=0.01$ ), otherwise there were no significant differences in demographics, BMI, tear size, WORC or VAS scores between the groups. The LHB procedure group had significantly worse baseline ASES scores (48.9 vs 58.7;  $p=0.03$ ). All patients who underwent RCR showed significant improvement in all three outcome measures at final follow-up. Patients who had either a LHB tenotomy or tenodesis at the time of RCR ( $n=45$ ) demonstrated significantly greater mean improvement in ASES ( $p=0.002$ ), and VAS scores ( $p=0.02$ ) at one-year follow-up compared to patients who had an isolated RCR ( $n=35$ ). The LHB procedure group also showed a trend towards more improvement in the WORC index although this failed to reach significance ( $p=0.08$ ). Linear regression found a biceps procedure to be predictive of a significantly greater improvement in ASES score ( $p=0.01$ ). ANOVA revealed that both the LHB tenotomy ( $p=0.04$ ) and tenodesis ( $p=0.01$ ) groups demonstrated more favorable improvement in ASES when compared to RCR alone.

**Conclusions:** In this study, a concomitant biceps procedure at the time of rotator cuff repair was predictive of greater improvement in patient reported outcome measures at one-year compared to isolated rotator cuff repair.