

Primary Versus Revision Arthroscopic Rotator Cuff Repair - An Analysis In 350 Consecutive Patients

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Objectives: The aim of this study was to evaluate the outcome of revision arthroscopic rotator cuff surgery when compared with primary arthroscopic rotator cuff surgery in a large cohort of patients.

Methods: A consecutive series of 350 (300 primary and 50 revision) arthroscopic rotator cuff repairs performed by a single surgeon with a minimum of two years follow-up were retrospectively reviewed using prospectively collected data. With the 50 revision cases as a reference, three primary repair cases were chosen immediately before and three after each revision case. Standardized, patient-ranked outcomes, examiner determined assessments, and ultrasound determined rotator cuff integrity was assessed pre-operatively at six months and two years after surgery.

Results: The revision group had a significantly larger pre-operative tear size ($4.1 \text{ cm}^2 \pm 0.5 \text{ cm}^2$)(mean \pm SEM) compared to the primary group ($3.0 \text{ cm}^2 \pm 0.2 \text{ cm}^2$)($p < 0.05$). The mean age of the revision group (63years, range 43-80) was older compared to the primary group (60years, range 18-88)($p < 0.05$). The re-tear rate for primary rotator cuff repair was 16% at 6 months and 21% at two years; while the re-tear rate for revision repair was 28% at six months and deteriorated to 40% at two years ($p < 0.05$). Two years after surgery the primary group reported less pain at rest ($p < 0.02$), during sleep ($p < 0.03$) and with overhead activity ($p < 0.01$) compared to the revision group. The primary group had better forward flexion (+13 Degrees, $p < 0.03$), abduction (+18 Degrees, $p < 0.01$) and internal rotation (+2 vertebral levels, $p < 0.001$) compared to the revision group at two years after surgery. The primary group also had significantly greater strength (+15 N, $p < 0.0004$), lift-off strength (+9.3 N, $p < 0.02$) and adduction strength (+22 N, $p < 0.003$) compared to the revision group at two years.

Conclusion: The short term clinical outcomes of patients undergoing revision rotator cuff repair were similar to primary rotator cuff repair. However, these results did not persist and by two years patients who had revision rotator cuff repair were twice as likely to have re-torn compared to those undergoing primary repair. The increase re-tear rate in the revision group at two years was associated with increased pain and impaired overhead function.

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