

Single-row vs Double-row Rotator Cuff Repairs: Long-term Healing and Functional Outcomes

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Introduction: Rotator cuff tears are one of the most common soft tissue injuries of the shoulder, and the arthroscopic treatment of these tears continues to evolve with new techniques and technology. A great deal of current literature focuses on evaluation the outcomes and healing of single-row versus double-row techniques. Many current biomechanical and histological studies show that double-row repairs may provide faster healing due to better restoration of the footprint and better tendon-to-bone apposition. However, most clinical studies show no difference in functional outcomes between the two methods, and lack long term follow-up. The purpose of this study was to determine if long-term rotator cuff repair results correlate to functional differences between single- and double-row repair.

Methods: We performed a retrospective comparative analysis of all patients who underwent arthroscopic rotator cuff repair with suture anchors by a single-surgeon. A review of paper charts for patients with available records from January 2002 through April 2010 was performed to identify patients with arthroscopic double-row or single-row rotator cuff repairs and a minimum of 5-years since date of surgery. Patient age, sex, tear size and shape at time of surgery, as well as the tendons involved were recorded. In the double-row repair group, average tear size was 2.6cm anterior to posterior and 1.9cm medial to lateral. In the single-row repair group, average tear size was 2.8cm anterior to posterior and 1.9cm medial to lateral.

Attempts were made to contact all eligible patients, and a total of 35 patients returned for ultrasonic evaluation of the surgically-repaired rotator cuff. Of these 10 patients underwent double-row repair, and 25 were single-row repair. Rotator cuff was evaluated as “No defect”, “Partial defect”, or “Full defect.” Modified ULCA scores were also recorded for each patient pre-operatively and at time of follow-up.

Results: Average length of follow-up was 8.9 years. Based on interpretation of the ultrasound at time of follow-up; in the double-row repair group, 8 (80%) healed completely, 1 healed with partial defect, and 1 had full-thickness defect. In the single-row repair group, 14 (56%) healed completely, 5 (20%) healed with partial defect, and 6 (24%) had full-thickness defects. In the double-row repair group, the average modified UCLA score was 26.0 pre-operatively and 42.5 at final follow-up. In the single-row repair group, the average modified UCLA score was 23.6 pre-operatively and 40.2 at final follow-up. In both groups, over 90% of patients had good or excellent results.

Discussion and Conclusion: Long-term objective outcomes show that healing of the rotator cuff using a double-row repair was superior compared to a single-row repair group. However, the clinical outcomes as measured by modified UCLA score were not significantly different.