Prospective evaluation of arthroscopic rotator cuff repairs at a minimum of 15 years: Functional outcomes and radiographic healing rates.

Carl Cirino, Matthew Fury, Jennifer A Estrada, Peter J Chabot[1], Anthony Finocchiaro[1], Joshua I. Mathew[2], Aimee P Bobko, Allen Daniel Nicholson[3], Lawrence V Gulotta[4]
[1]Hospital For Special Surgery, [2]Icahn School of Medicine At Mount Sinai, [3]Professional Orthopaedic Associates, [4]Hosp for Special Surg-Cornell

INTRODUCTION:
Arthroscopic rotator cuff repair is the gold standard surgical procedure for rotator cuff tears. Short- and mid-term follow-up studies have demonstrated excellent clinical and good, durable healing rates. The aim of this study is to evaluate the effectiveness of all-arthroscopic rotator cuff repairs prospectively using long-term follow up results.
METHODS: The study enrolled 193 patients who underwent all-arthroscopic rotator cuff repairs from 2003 to 2005. Twenty-six were available for long-term in-person follow-up. Patients were evaluated preoperatively and at 1-, 2-, 5-, and >15-years postoperatively. Outcome measurements included the American Shoulder and Elbow Surgeons (ASES) score, Single Assessment Numerical Evaluation (SANE), Shoulder Activity Scale (SAS), range of motion, manual muscle testing, radiography, and ultrasonography.
RESULTS: This study included 26 patients with a mean follow-up of 18.1 years (range, 16.2-19.8 years). The mean ASES score improved from 62.1 ± 22.8 preoperatively to 91.9 ± 9.7 at ≥15 years ($p < .0001$). Paired analyses demonstrate that the mean ASES score at final follow-up was no different from 1-, 2-, and 5-year follow-up values. The ultrasound healing rates for all patients were 62.5% at 1-years, 75.0% at 2-years, 91.7% at 5-years, and 80.8% at >15-years. When comparing patients with healed rotator cuffs to those who are torn, the acromial humeral interval (8.85 vs. 3.86, $p<0.001$) and Hamada (1.19 vs. 3.40, $p<0.001$) grades were statistically improved in the intact group. While three of the five torn cohort patients demonstrated rotator cuff arthropathy, the Samilson-Prieto arthritis grade demonstrated no statistical difference (1.33 vs. 1.61, $p<0.611$). Patients in the torn cohort demonstrated decreased external rotation motion and strength, external rotation strength, and forward elevation strength but no difference in forward elevation or internal rotation motion.
DISCUSSION AND CONCLUSION: This study demonstrates that all-arthroscopic rotator cuff repairs provide durable healing rates, preservation of glenohumeral compression, and good functional results in long-term follow-up. When comparing patients with intact tendons to those who experienced a retear, there was no difference in age, initial tear size, or repair configuration. The potential for intact tendons to deliver superior long-term clinical and radiographic outcomes underscores the significance of future research to enhance healing rates. This information can be useful in counseling patients regarding the long-term results of this procedure.