Providing Better Outcomes: Repair or Reverse Shoulder Arthroplasty for Massive Rotator Cuff Tears

Vani Janaki Sabesan[1], Laila Hysumi Khoury, William James Pallissery, Alessia Carolina Lavin, Justin N Elkhechen, Clyde Kehbuma Fomunung
[1]Palm Beach Shoulder Service - HCA Atlantis Orthopaedics

INTRODUCTION:
Despite advances in surgical technology with rotator cuff repairs, there is a high re-tear rate for large and massive rotator cuff tears (RCT), up to 90%. An alternate treatment option more recently offered to elderly patients is reverse shoulder arthroplasty (RSA) for massive RCT. The purpose of this study was to compare treatment of RCR versus RSA for massive RCT to identify optimal treatment based on opioid usage, pain scores, and outcomes for these patients.
METHODS: A retrospective review of 46 patients with large or massive RCT treated with RSA and RCR at a single institution from 2017-2019 was performed. All patients were treated by two fellowship trained shoulder surgeons. Preoperative and postoperative range of motion, opioid usage, and outcomes scores such as American Shoulder and Elbow Surgeons (ASES) score, Penn (PSS) score, Constant score (CS), and Subjective Shoulder Value (SSV) were collected. Demographic variables, as well as preoperative and postoperative outcomes scores at 6 weeks, 3 months, and 12 months were compared using t-tests and multivariable regression modeling.
RESULTS: There were 28 males and 18 females with average age of 61.5 for the RCR and 66.4 for the RSA ($p=0.016$). At baseline there were no differences between groups for ASES and PSS pain or function scores, CS and SSV ($p \geq 0.05$). At 6 weeks, the average PSS and ASES function and CS scores for RSA group were significantly higher compared to RCR group ($p<0.001$, $p=0.003$, $p=0.005$). All patient reported outcomes at 3 months and final follow up postoperatively were not significantly different between groups. At final follow up, internal rotation was significantly higher for RCR.
DISCUSSION AND CONCLUSION: Our results demonstrated that both RCR and RSA showed significant improvements in all pain and functional scores for patients with massive RCT. Those patients treated with the RSA showing better initial recovery with significant difference seen only at 6 weeks postoperatively and the RCR group showing slightly better final ROM. Overall outcomes for RSA were comparable to RCR, suggesting that both options are good solutions for treatment of massive RC tears however, surgeons should be aware of the tradeoffs associated with each option. Further studies are needed to examine long term complications, re-tear rates and cost effectiveness in this patient population.