Comparing Reverse Total Shoulder Arthroplasty for Fracture versus Degenerative Conditions: Five-Year Minimum Follow - Up

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INTRODUCTION:
Reverse total shoulder arthroplasty (rTSA) has become the operative treatment of choice for acute proximal humerus fractures in the elderly population, but little data exists on the long-term outcomes or how they compare to a rTSA done for degenerative conditions. The purpose of this study is to compare the clinical and radiographic outcomes of patients undergoing rTSA for acute fracture versus degenerative conditions with a minimum 5-year follow-up.
METHODS: Data was extracted from an international registry using a single platform rTSA from 2007-2018. Patients with a minimum follow-up of 5 years were then split into fracture and degenerative cohorts and matched 1:3 based on age, sex, and follow up duration. Clinical and radiographic outcomes were compared between the cohorts including range of motion (ROM), patient-reported outcome measures (PROM), VAS pain score, complication and revision rates, humeral loosening, and scapular notching. This data was then analyzed using Welch's t-test, Fisher's exact test, or Wilcoxon rank sum test.
RESULTS:
There were 384 total patients included in the study, with 96 fractures and 288 degenerative. The mean age was 72 with 83% of the patients being female. At a mean follow-up of 6.4 years, both the fracture and the degenerative cohorts had significant improvements in all patient reported outcome measures and ROM, compared to their preoperative status. At the latest follow-up, the mean ASES score was 83 and the mean VAS pain score was 1.1 for both cohorts. Patients with degenerative indications had greater forward elevation which did not meet the minimally clinically important difference and greater internal rotation which did not meet the substantial clinical benefit threshold. Patient satisfaction was very high for both cohorts, with 97% in the degenerative cohort and 91% in the fracture cohort satisfied with the procedure (p=0.276). Complication and revision rates were similar between the two cohorts. Scapular notching was 11% in the degenerative cohort and 9% in the fracture cohort (p=0.82).
DISCUSSION AND CONCLUSION:
This study demonstrates no significant differences in the clinical or radiographic outcomes at a minimum of 5 years follow-up for patients undergoing rTSA for acute fracture versus degenerative conditions. Patients undergoing rTSA for either indication have similar rates of complications, revisions, and scapular notching, with high patient satisfaction. The favorable outcomes seen at short term follow-up are maintained beyond 5 years. Patients undergoing rTSA for an acute fracture can expect similar results to those undergoing rTSA for degenerative conditions at minimum 5 year follow up.