Outcomes of Augmented vs. Standard Baseplates in Reverse Shoulder Arthroplasty

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INTRODUCTION: Despite the increased utilization of shoulder arthroplasty (RSA) since the early 2000s, it is not indicated for all shoulder pathologies and is met with specific difficulty in cases of glenoid bone loss. Augmented glenoid baseplates have shown encouraging results as a treatment for managing glenoid bone loss, but with limited studies assessing the efficacy of the treatment for reverse shoulder arthroplasty. The purpose of this study was to compare the functional and patient-reported outcomes (PROs), complications, and revisions of patients undergoing RSA with augmented baseplates versus standard baseplates.

METHODS: A retrospective review of 447 patients treated with primary RSA by a single fellowship trained surgeon at a single institution was performed. There were 279 patients in the standard group (SG) and 168 patients in the augmented group (AG), which was further divided by the type of augment into three subgroups (superior, posterior, superior/posterior). Demographic variables, range of motion (ROM), PROs, and pain scores were collected from preoperative and latest follow-up visits, in addition to complication and revision rates. PROs included Simple Shoulder Test (SST), University of California Los Angeles (UCLA) Shoulder, American Shoulder and Elbow Surgeons (ASES), Constant Shoulder, and Shoulder Pain and Disability Index (SPADI) scores. For each variable, the augmented groups were compared to the SG and statistical analysis was performed.

RESULTS: Compared to the SG, there were significantly more males in the AG ($p<0.01$) and fewer patients with the diagnosis of RCT ($p=0.04$). At an average follow up of 26.0 months, the AG and each of the augmented subgroups performed as well, or better, than the SG on all functional and PROs. No significant difference was found in rates of complications, revisions, humeral radiolucent lines, glenoid loosening, or scapular notching.

DISCUSSION AND CONCLUSION: Even when glenoid wear is present, augmented baseplates perform equally or better than standard baseplates in primary RSA, with no significant difference in early complication rates. Despite concerns about over-tightening with augmented baseplates, both treatments demonstrated comparable functional improvements and pain relief. This suggests that augmented baseplates are not only effective for glenoid wear, but also provide successful patient outcomes.