

## **What Factors Are Associated With a Successful Mid-Term Outcome After Ream-and-Run Arthroplasty: Minimum 5-year Follow-up in 166 Patients**

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### **INTRODUCTION:**

Glenoid component loosening and wear remain as one of the most common failure modes of total shoulder arthroplasty. The ream-and-run arthroplasty can be offered to well-motivated patients who wish to avoid the limitations of glenoid polyethylene. Previous work has demonstrated the ream-and-run can effectively treat active patients with primary glenohumeral arthritis. The purpose of this study was to answer the following questions: 1) What are patient reported outcomes of ream-and-run arthroplasty at minimum 5-year follow-up? 2) What factors are associated with a successful outcome? 3) What are the risk factors for reoperation?

### **METHODS:**

A retrospective review of a longitudinally-maintained shoulder arthroplasty database was performed. Patients were included if they had clinical outcome data at a minimum of 5-year follow-up. Baseline patient and shoulder characteristics and patient-reported outcomes in the form of the Simple Shoulder Test (SST) were recorded. Improvement was documented as both the change in follow-up SST from preoperative SST as well as improvement in the SST score quantified as the percent of maximum improvement (% MPI). A successful outcome was defined as a SST improvement greater than or equal to 3 without a subsequent reoperation. Univariate analysis was performed to determine factors associated with a successful outcome. Multivariate analysis was performed based on factors significant on the univariate analysis.

### **RESULTS:**

A total of 166 patients were identified (153 male, 13 female). Mean age was 60 years (range 25 to 66 years). The most common glenoid morphology was B2 (44%) followed by A2 (35%). Median SST improved from 5 to 11 ( $p < 0.001$ ). Those with a successful outcome were more likely to be older (61 vs. 58 years,  $p = 0.075$ ), be male (95% vs 86%,  $p = 0.045$ ), and have a lower preoperative SST score (median SST 5 vs. 6,  $p = 0.020$ ). In the multivariate analysis, both male sex (OR 4.4, 95% CI 1.3-14.7,  $p = 0.017$ ) and lower preoperative SST score (OR 0.80, 95% CI 0.69-0.93,  $p = 0.004$ ) were independent predictors of a good outcome.

### **DISCUSSION AND CONCLUSION:**

Ream-and-run arthroplasty is effective at treating glenohumeral arthritis in active patients at 5-year follow-up. Identifying patient factors associated with a successful outcome may help counsel patients prior to surgery.