Predictors of Ability to Perform Internal Rotation-Dependent Activities of Daily Living and Favorable Satisfaction Despite Loss of Objective Internal Rotation After Reverse Shoulder Arthroplasty

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INTRODUCTION: Preserving internal rotation (IR) after reverse shoulder arthroplasty (RSA) is crucial to patients' ability to perform activities of daily living(ADLs). However, preserving objective IR after RSA is often unreliable. Previous research has determined that objective IR and subjective functional IR may be discordant. The purpose of this study was to identify predictors of patient-reported ability to perform IRADLs and positive patient satisfaction after RSA despite loss of objective IR.

METHODS: Our institutional shoulder arthroplasty database was queried for patients undergoing primary RSA with a minimum 2-year follow-up. Patients who were wheelchair bound or had a preoperative diagnosis of infection, fracture, or tumor were excluded. We first identified patients in the overall cohort that lost objective IR from pre- to postoperative assessment defined as one point loss on the Flurin IR scale. In this cohort, we identified patients characteristics that were predictive of patient-reported ability to perform IRADLs and overall patient satisfaction.

RESULTS:

Out of 599 RSAs identified, the cohort consisted of 107 RSAs that lost objective IR (45% female, mean age 70 years). Mean follow-up was 4.6 years. On average, patients lost 1.7 IR score points pre- to postoperatively. When assessing IRADLs that were rated as "normal" or "slightly difficult", 58% of patients were able to tuck in a shirt with a hand behind their back, 37% were able to wash their back or fasten their bra, 79% were able to perform personal hygiene, and 65% were able to remove an object from their back pocket. Over 70% of patients rated their shoulder as "much better" or "better" postoperatively despite losing IR. Greater preoperative IR and lesser loss of objective IR pre- to postoperatively were associated with greater ability to perform all 4 IRADLs (OR 1.54–2.5) while female sex was associated with worse patient-reported ability to perform 3 IRADLs (OR 0.26 – 0.36). More favorable patient satisfaction was associated with dominant side surgery (2.87 [1.08,1.13], P = 0.031) and greater preoperative IR score (1.63 [1.19,2.23], P = 0.001).

DISCUSSION AND CONCLUSION: Despite losing objectively-assessed IR after RSA, many patients are still able to perform IRADLs and report favorable satisfaction. Identified patient characteristics herein are predictive for adequately performing subjectively-assessed IR and adequate patient satisfaction after RSA despite losing objective IR. Our findings may enable surgeons to provide improved preoperative counseling to patients that may have poor postoperative objective IR.