Shoulder Arthroplasty after Prior Shoulder Instability Surgery: A Matched Cohort Analysis
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INTRODUCTION: Recurrent shoulder instability is a clinical challenge often resulting in the development of osteoarthritis (OA) and need for subsequent surgery. Few investigations have demonstrated improved clinical outcomes after shoulder arthroplasty (SA), however, there remains limited comparisons to standard SA cohorts. The purpose of this study was to perform a matched cohort analysis evaluating the effect of prior shoulder instability surgery (SIS) on the outcomes and complications of primary anatomic total shoulder arthroplasty (TSA) and reverse shoulder arthroplasty (RSA).

METHODS: Between 2007 and 2018, 38 primary SA (22 TSA and 16 RSA) with a prior SIS and a minimum of 2 years of follow up were identified from a multicenter database. Shoulders were evaluated at a mean follow up of 51 months (range: 25 – 108 months). This cohort was matched 1:3 based on age, sex, body mass index, year of surgery, and dominant shoulder, with patients who underwent SA for either primary OA in TSA or rotator cuff tear arthropathy (CTA) in RSA. Compared variables included pain, range of motion (ROM), strength, patient-reported outcome measures, complications, and revisions.

RESULTS:
SA produced similar postoperative pain, ROM, patient-reported outcome measures, complications, and revisions in those with prior SIS vs. controls. TSA with prior SIS demonstrated worse final postoperative abduction (116° vs. 133°; \( P = 0.046 \)) and abduction improvement (24° vs. 47°; \( P = 0.034 \)) compared to OA controls. Both TSA and RSA with prior SIS demonstrated significant improvements from baseline across all metrics, however there were no significant differences between the groups. With respect to TSA with prior SIS, no differences were observed when compared to OA controls in complications (4.6% vs. 6.1%; \( P = .786 \)) or revisions (4.6% vs. 4.6%; \( P = .999 \)). RSA with prior SIS also demonstrated no differences from controls in complications (0% vs. 6.3%. \( P = .183 \)) and revisions (0% vs. 4.2%; \( P = .279 \)).

DISCUSSION AND CONCLUSION:
SA after prior SIS can improve both pain and function without adversely increasing the rates of complications or revision surgery. When compared to patients without prior SIS, TSA demonstrated worse abduction, however all other functional differences remained statistically similar. Additionally, TSA and RSA performed in patients with prior SIS achieved similar improvement in function.