Table 1 Demographics

Demographics	
Total number of primary RSA (2009-2015)	1,649
Number of RSAs requiring reoperation	39 (2.37%)
Average age at primary RSA	63.6 years old (range 20-87, SD 12.5)
Gender	18 male, 21 female
Laterality	16 right, 23 left
Average time to reoperation	20.6 months (range 0.4-71.2, SD 19.0)
Indications for primary RSA* (more than one indication for some patients)	
Cuff tear arthropathy	15
Proximal humerus fracture sequela	10
• Acute fracture	3
• Failed fixation	5
• Failed non-operative	2
Septic arthritis	4
Massive rotator cuff tear	3
Rheumatoid arthritis	3
Charcot arthropathy	2
AVN with rotator cuff tear	1
OA severe glenoid bone loss	1
Tumor	1

Table 2 Indications for RSA reoperation

Indications for RSA reoperation	Number of Reoperations (n = 39)	Percent of primary RSAs (n = 1,649)
Instability	9 (23.1%)	0.55%
Infection	9 (23.1%)	0.55%
Glenoid component	6 (15.4%)	0.36%
• Baseplate loosening	5 (12.8%)	0.30%
• Glenosphere dissociation	1 (2.56%)	0.06%
Humeral component	17 (43.6%)	1.03%
• Humeral tray fracture	9 (23.1%)	0.55%
• Humeral stem aseptic loosening	4 (10.3%)	0.24%
• Periprosthetic humerus fracture	4 (10.3%)	0.24%
Deltoid failure	1 (2.56%)	0.06%

surgeons at a tertiary referral center. Demographics and indications for primary RSA were collected (Table 1), and all reoperations were identified, analyzed and categorized for trends associated with each type reoperation performed.

Results: 39 (2.37%) reoperations were performed for a variety of indications (Table 2). Overall, only a few patients with infection or instability required reoperation, (0.55%). The most common indications for reoperation were related to the humeral component (1.02%); the majority of humeral component complications were related to a specific design flaw of one implant system. RSAs performed for proximal humeral fracture sequela more commonly underwent reoperation due to instability or humeral component related issues; all four cases of aseptic humeral stem loosening occurred in the setting of proximal humeral fracture sequela treatment. Only 0.36% of all primary RSAs required reoperation due to glenoid complications.

Conclusion: Primary RSA performed with contemporary implants and surgical techniques seems to be associated with a very low rate of reoperation. The most common reasons for reoperation were humeral component fracture for one particular implant, humeral loosening, dislocation, infection, and glenoid failure, all under 1% each.

Paper #16 INCIDENCE OF POST-OPERATIVE ACROMIAL FRACTURES WITH ONLAY VS INLAY REVERSE SHOULDER ARTHROPLASTY

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Background: Acromial fractures in reverse shoulder arthroplasty (RSA) have been reported at rates up to 7%. Although these patients are reported to have improved function compared to their preoperative state, acromial insufficiency may negatively impact the final postoperative outcome in RSA compared to a cohort of patients without postoperative acromial complication. There are multiple implant systems used for reverse total shoulder arthroplasty. The purpose of this study was to retrospectively compare the rates of acromial fractures in two of such systems, using the outcomes of two surgeons at a single institution.

Methods: Patients that underwent surgery from August 2013-July 2016 were retrospectively reviewed. Postoperative clinic notes were reviewed to determine the incidence of acromial fracture after surgery, and all imaging studies obtained were reviewed to confirm presence or absence of acromial fracture. Patients with at least six months of follow up were included in our study population, as this has been identified as an early postoperative complication. Preoperative and one-year ASES scores were calculated and compared for subjects who had sufficient follow up.

Results: Our study population included 109 total patients, 58 who have an onlay reverse shoulder and 51 with an inlay system in place. There were 9 total acromial fractures recorded (8.26%). The onlay cohort had a 12.07% acromial fracture rate (7 out of 58), compared to a 3.92% rate for the inlay group (2 out of 51). Compared to patients receiving an inlay system, those receiving an onlay prosthesis were 3.33 times more likely to experience a complication, though this did not reach statistical significance (95% CI: 0.60-34.38; $P = .23$).

Conclusion: There may be a trend towards higher rate of postoperative acromial fractures when an onlay reverse shoulder is used as opposed to an inlay system. This may be due to the potentially increased tension placed on the deltoid resulting from the increased proximal size of typical onlay prostheses. We encourage further investigation into the acromial complication rates between different systems (Table 1).