

Table 2 Failure by age

Failure by age	Failures	Total Patients (n)	Percentage
60-64	7	26	27%
65-69	8	31	26%
70-74	7	23	30%
75-79	10	20	50%
80-84	6	13	46%
85-89	6	12	50%
90+	0	6	0%
	44	131	34%

frozen shoulder requiring injection, and 1 case of asymptomatic rotator cuff failure.

Most patients with radiographic or clinical failure did not undergo reoperation. The overall reoperation rate was 11% (14 patients). This correlated with fracture type, with 7% of 2-part fractures (4 shoulders), 14% of 3-parts (8 shoulders), and 18% of 4-parts (2 shoulders) requiring reoperation. Revision operations were reverse total shoulder arthroplasty (rTSA) in 8 patients, hardware removal in 5 patients, and revision ORIF in 1 patient.

Clinical outcomes

Overall patient reported outcomes were satisfactory in patients without failure. VAS for pain averaged 0 at rest and 1 with activity. The average SANE score of this cohort was 92. At final follow up, for patients with failure (including those who had required revision operation), the VAS (rest) was 1, VAS (activity) was 2, and average SANE score was 77.

Discussion and Conclusions

Internal fixation of proximal humerus fractures with locking plates in patients over the age of 60 resulted in a 44% complication rate, including a 34% failure rate defined as reoperation or radiographic failure. Higher complication and failure rates were observed in older patients and more complex fractures. However, the reoperation rate was relatively low (11%), which may be partly due to unwillingness to offer revision surgery to older patients with failed fixation if clinically well tolerated. Improvements in fracture fixation techniques, implants and instruments are required to improve the surgical management of proximal humerus fractures.



Figure 1 Illustrative Case—3 part fracture in 78 YO female. Progressive, symptomatic avascular necrosis postoperatively. Given activity demands, she elected to have isolated hardware removal without reconstruction.

Paper #28 CEMENTLESS REVERSE TSA FOR PROXIMAL HUMERAL FRACTURE: RESULTS OF A MODERN TECHNIQUE

Sumant G. Krishnan, MD^a, Aydin Budeyri, MD^a, Raffaele Garofalo, MD^a, Temilola Majekodunmi, MD^b, James M. Rizkalla, MD^a, ^aThe Shoulder Service, Baylor University Medical Center, Dallas, Texas, USA; ^bBaylor Scott and White Research Institute, Dallas, Texas, USA

Introduction: Reverse total shoulder arthroplasty (RTSA) has been successfully used for the treatment of proximal humeral fractures (PHFx). Traditional surgical technique has utilized cemented fixation of the humeral stem to restore anatomic humeral height and version. The use of cement has been associated with both intraoperative cardiopulmonary issues as well as postoperative difficulty if revision is required. To this end, we report here the results of cementless RTSA for the treatment of acute and chronic PHFx.

Methods: Fifty-five consecutive patients underwent hybrid cementless RTSA for proximal humeral fracture. There were 30 acute fractures (Neer 3- and 4 part fractures) and 25 chronic fractures (Boileau Types 2, 3, and 4). Mean age was 67 years (range 35-91 years). Mean clinical and radiographic followup was 28 months (range 12-60 months).

Results: At final review, mean range of motion was as follows: active anterior elevation 152.6°(range 80-170°), active external rotation 52.7°(range 0-80°), and active internal rotation 65.7°(range 0-80°). ASES score improved from 8.82 to 90.6, Simple Shoulder Test improved from 4.91 to 91.58, and Visual Analog Score improved from 6.67 to 0.39.

Overall, 47 of 55 (85%) of greater tuberosities demonstrated osseous healing (28/30 = 93% acute PHFx, and 19/25 = 76% chronic PHFx).

Overall, 6/55 (10.9%) of major complications occurred post-operatively (including 5 periprosthetic fractures and 1 wound infection requiring implant removal).

Conclusion: Cementless RTSA for PHFx utilizing a modern reproducible surgical technique demonstrates successful clinical and radiographic outcomes compared with traditional techniques.

Paper #29 OUTCOMES USING SUPERIOR AND POSTERIOR-SUPERIOR AUGMENTED BASEPLATES IN REVERSE TOTAL SHOULDER ARTHROPLASTY FOR GLENOID WEAR: SHORT TERM FOLLOW UP COMPARED TO MATCH CONTROL

Lindsey G. Liuzza, MD^a, Christopher Roche, MS, MBA^b, Mandeep S. Virk, MD^a, Joseph D. Zuckerman, MD^a, ^aDepartment of Orthopedic Surgery, NYU Langone Orthopedic Hospital, New York, New York, USA; ^bExactech, Inc., Gainesville, Florida, USA

Objective: Augmented base plates are used to address asymmetric glenoid wear while avoiding excessive eccentric reaming in reverse shoulder arthroplasty (RSA). The purpose of this study is to evaluate the short-term outcomes of superior and posterior-superior augmented baseplates used in patients undergoing reverse shoulder arthroplasty in patients with superior or posterior-superior glenoid wear.

Methods: A multi-institutional database was used to retrospectively analyze patients that underwent RSA with superior or posterior-superior augmented glenoid baseplates (RSA-A) for superior glenoid wear between 2009-2015. A total of 58 patients with minimum 2-year follow up were included and matched with a control group of 58 patients (RSA-C) that underwent RSA with a standard glenoid baseplate. The primary outcome measure was failure of the glenoid baseplate requiring revision shoulder arthroplasty. Secondary outcomes included range of motion, pain scores, SST and ASES scores.

Results: The average follow up in both groups was 33.19 (±12.3) months. The average age was 72.16 (±8.5) years. There was one revision in the RSA-C group due to glenosphere loosening likely secondary to infection. Radiographic glenoid loosening was