Radiographic Results And Intraoperative Complications Of Pressfit Fracture Specific Stem In Reverse Shoulder Arthroplasty For Fracture

Steven Munassi[1], Georges Haidamous, Peter Simon[2], Rita McKnight, Craig Melbourne, Mark A Mighell[3]
[1]FORE, [2]Foundation For Ortho Research and Education, [3]Florida Orthopaedic Institute

INTRODUCTION:
Press fit technique has been increasingly used in the treatment of proximal humerus fractures. The purpose of this study was to report on radiographic outcomes as well as intraoperative complications in patients undergoing RSA for fracture using this stem. We hypothesize that pressfit humeral arthroplasty with fracture specific stem allows for stable stem placement with a low intraoperative complication rate when treating patients with reverse refracture.
METHODS:
A retrospective review was conducted on a consecutive series of patients who underwent RSA for fracture with a press fit fracture specific stem between 2017 and 2021. We identified 20 patients (21 fractures) who met inclusion criteria. The average age of the cohort was 71 years old (range 49 years old – 86 years old). There were 19 female patients and 2 male patients. There were 11 left sided and 10 right sided procedures. The 21 proximal humeral fractures were classified as follows: 2-part (n=4), 3–part (n=11), 4–part (n=5), and 1 posteriorly displaced fracture. The tuberosities were repaired in all cases. Intraoperative complications were evaluated. Radiographic analysis was performed by 3 fellowship trained surgeons for stem incorporation, tuberosity union, as well as evidence of bone resorption or migration.
RESULTS: Stem incorporation and tuberosity union were noted in 100% of cases (21/21). There was no radiographic evidence of significant resorption in any case. Heterotopic ossification was observed in only one case. Intraoperatively, the decision to use cement because of poor fixation was not required in any of the cases. Complications included 1 intraoperative fracture which was successfully managed with the same pressfit stem with additional cerclage wire placement.
DISCUSSION AND CONCLUSION:
RSA with a pressfit fracture specific stem for the treatment of proximal humeral fractures leads to predictable stem incorporation and has low intraoperative complication rate. All patients in this study had a stable stem at final follow-up. There was only one intraoperative fracture that was successfully managed with the presfit stem without additional cementation.