

Δ Hemiarthroplasty Versus Reverse Total Shoulder Arthroplasty for the Management of Proximal Humerus Fractures in the Elderly: A Retrospective Review of a Large Population Database

Marissa Bonyun; Lauren Nowak; Andrea Chan; Aaron Nauth, MD; Emil H. Schemitsch, MD; Michael D. McKee, MD¹

¹St. Michael's Hospital, Toronto, Ontario, CANADA

Purpose: The management of proximal humerus fractures (PHFs) remains an area of substantial controversy. Complex fractures in elderly patients are often managed with hemiarthroplasty (HA). Outcome after HA is highly dependent upon healing of the tuberosities and rotator cuff function, both of which can be unreliable in this patient population. Reverse total shoulder arthroplasty (RTSA) has emerged as an attractive treatment option, as outcomes may be less reliant on tuberosity healing and intact rotator cuff function, though concern exists for higher revision rates. The purpose of this study was to compare reoperation rates between HA and RTSA for the acute management of PHFs in older adults.

Methods: Patients 50 years and older with a main diagnosis of PHF were identified from emergency departments across Ontario from 2004-2013. Those with an intervention code of HA or RTSA within 4 weeks of the index fracture were included. The primary outcome was reoperation within 2 years. A chi-square test was used to compare the unadjusted reoperation rates. Logistic regression was used to compare outcomes while adjusting for clinically important co-variables, and to identify independent risk factors for reoperation.

Results: A total of 1352 patients were identified, 1099 treated with HA and 253 with RTSA. A total of 169 (15.4%, 95% CI=13.4-17.6) patients within the HA group and 39 (15.4%, 95% CI=11.5-20.1%) patients within the RTSA group underwent repeat surgery within 2 years of the index procedure. The unadjusted rate of reoperation was not significantly different between groups ($p=0.80$). In addition, reoperation rates were not significantly different after adjusting for age, comorbidities, teaching hospital, diagnosed osteoporosis, rural residence, income quintile, or initial length of stay. Only age (odds ratio [OR] = 1.04, 95% CI=1.0-1.04), the presence of diagnosed osteoporosis (OR = 2.5, 95% CI=1.4-4.6), and a high level of comorbidities (OR = 2.2, 95% CI=1.1-4.2) were independently associated with reoperation rates.

Conclusion: Both HA and RTSA are used for the management of acute PHFs in the elderly across Ontario. In contrast to previous studies, HA and RTSA did not demonstrate significantly different reoperation rates in the treatment of acute PHFs in elderly patients. Our results, while limited by a lack of functional outcome data, suggest further investigation is required to define the relative roles of these 2 arthroplasty options in the management of acute PHFs.

Δ OTA Grant

The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device he or she wishes to use in clinical practice.