Reverse Shoulder Arthroplasty in the United States: A Comparison of National Volume, Patient Demographics, Complications, and Surgical Indications

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Disclosures:

Introduction: Since November of 2003 Reverse Shoulder Arthroplasty (RSA) has emerged as an alternative procedure for end-stage glenohumeral pathology including rotator cuff arthropathy, osteoarthritis, massive rotator cuff tears and proximal humerus fractures. Indications of RSA are expanding. Until recently, administrative coding practices have not differentiated RSA from traditional Total Shoulder Arthroplasty (TSA), and the national procedural volume has been unknown. Thus the purpose of this study was to define the US volume, patient demographics, and indications for RSA, while contrasting these findings to TSA and hemiarthroplasty (HA).

Methods: The 2011 National Inpatient Sample (HCUP-NIS) (1) dataset was queried using ICD-9-CM codes to identify patients undergoing RSA, TSA, or HA. We used weighted estimates of national procedure volume, per-capita utilization, patient comorbidities, and inpatient complications defined by the Agency for Healthcare Research and Quality (AHRQ) and identified them using standard methods described by Elixhauser. ANOVA statistical analysis was used and significance was defined as p value <0.05.

Results: In 2011, 66,485 patients underwent shoulder arthroplasty; there were 21,692 cases of RSA, 29,359 of TSA, and 15,434 of HA. National TSA volume increased by 19,235 (or 189.9%) over the last decade. Utilization of HA decreased from 14.5 cases per 100,000 PY in 2002 to 12.6 cases per 100,000 PY in 2011. Patient demographics differed between groups. RSA patients were older (72.7 years vs 67.4 TSA vs 66.8 HA) and more commonly female. Comorbidity burden was not significantly different between groups (p=.13). Inpatient complications were highest after RSA at 27% vs 16% in TSA (p < 0.001). RSA was commonly indicated in the setting of rotator cuff disease (28%).

Discussion: The national volume of RSA was representative of more than one third of the total arthroplasties performed in 2011. Patients undergoing RSA were typically older, but not necessarily more comorbid. As more data becomes available, future studies should evaluate trends in RSA.

Significance: Our findings represent the first national estimates of RSA within the United States. The volume of shoulder arthroplasty in the US continues to rise likely in part due to expanding use of RSA. Given the burden of shoulder disease within the United States, this data will help define a “starting point” for studying the role of RSA.

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