



Surgeons' experience and perceived barriers with outpatient shoulder arthroplasty



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Background: Recently, outpatient total shoulder arthroplasty (TSA) has been proposed as a safe and cost-effective alternative to the inpatient setting. This study evaluated the expert shoulder surgeon's experience with and perceived barriers to outpatient TSA.

Methods: A secure web application was used to perform an online survey of 484 active American Shoulder and Elbow Surgeons members. The survey assessed surgeon practice demographics, experience with TSA/outpatient TSA, and perceived barriers to successful outpatient TSA. Simple descriptive statistics were performed to analyze the cohort. To identify differences between surgeons performing and not performing outpatient TSA, the Student *t* test and χ^2 test were used in bivariate analysis. $P < .05$ was used for statistical significance.

Results: Of the 179 (37.0%) complete responses received, 20.7% perform outpatient TSA; of those, 78.4% reported an "excellent" experience. Outpatient surgeons were more likely to reside in the southern United States ($P = .05$) and performed a higher volume of TSAs annually ($P = .03$). Surgeons not performing outpatient TSA were more concerned with the potential of medical complications ($P = .04$). Perceived lack of experience ($P = .002$), low volume ($P = .008$), insurance contracts ($P = .003$), and reimbursement ($P = .04$) were less important barriers compared with outpatient TSA surgeons.

Conclusions: Less than 25% of shoulder surgeons who completed survey are performing outpatient TSA, and those that do report an overall excellent experience. Volume of TSAs performed and practice location appear to play roles in the decision to perform outpatient TSA. As surgeons become more comfortable with outpatient TSA, there is a shift from concerns about medical complications to concerns about reimbursement.

Level of evidence: Survey Study; Experts

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Keywords: Shoulder arthroplasty; outpatient shoulder arthroplasty; outpatient joint arthroplasty; surgeon satisfaction; cost-effectiveness; survey

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The health care environment, which is rapidly evolving, has seen health care policy makers place increased attention on the costs associated with the delivery of health care. Total shoulder arthroplasty (TSA) is a successful operation to restore function and provide pain relief for patients with end-stage degenerative conditions of the glenohumeral joint. The demand for TSA continues to see tremendous growth,

which translates to increased health care-related expenditures.⁶ Surgeons have thus found new pathways to deliver safe, high-quality, efficient, and cost-effective health care. Most notably, outpatient TSA has become an increasingly viable option compared with routine inpatient hospital admission in appropriately selected patients.^{3,7,9}

TSA has traditionally remained an inpatient procedure due to concerns over pain control, blood loss, and the potential of postoperative complications. However, improvement in surgical techniques, pain management strategies, and perioperative management have led to declining lengths of stay without compromising patient satisfaction or safety.⁷ Recent reports have shown the average length of stay after TSA is 1.1 to 2.2 days.^{3,7} Our experience is that most patients spend a single night in the hospital and are able to be discharged home the following day. This has led to a natural transition to outpatient TSA in appropriately selected patients.

Three recent reports have documented the safety of outpatient TSA compared with traditional inpatient hospital admission, with no increase in the readmission or complication rates.^{3,4,9} A recent report from Cancienne et al⁴ noted that outpatient TSA may be cost-effective as well. The authors found that the transition to an outpatient setting resulted in a mean cost-reduction of \$3618 per patient in diagnostic-related group reimbursements.

Surgeons face an important balance between implementing potential cost-saving measures without jeopardizing safety or outcomes. This is highlighted in the recent introduction of bundled-payment programs that place increased financial responsibility on the surgeon for any complications or readmission within the 90-day episode of care. The number of outpatient TSAs performed increased by 107% from 2011 to 2014 but still only accounts for 2.4% of all TSAs performed.^{4,9} We sought to investigate the expert shoulder surgeon's experience with outpatient TSA and perceived barriers to successful implementation of an outpatient TSA program.

Materials and methods

Survey population

An online survey was distributed to 484 active American Shoulder and Elbow Surgeons (ASES) members who had email addresses on file as of January 2017. Study data were collected and managed using REDCap (Research Electronic Data Capture; Vanderbilt University, Nashville, TN, USA) electronic data capture tools. A link to the survey was distributed by email on January 11, 2017, and again on February 1, 2017. Only complete survey responses were included for analysis.

Survey detail

The survey included 45 questions and was designed to assess 4 areas: surgeon practice demographics, overall experience with shoulder arthroplasty, the surgeon's experience with outpatient TSA, and what each surgeon defined as major hurdles to successful outpatient TSA.

The practice demographic questions regarded fellowship training, place and setting of practice, number of years in practice, and any ownership involvement in hospitals or ambulatory surgery centers.

Shoulder arthroplasty experience was assessed by asking each surgeon how many arthroplasties he or she performed each year, average length of stay after shoulder arthroplasty, average age of patients receiving shoulder arthroplasty, use of physical therapy post-operatively, and concerns about health care cost-effectiveness. Surgeons were then asked whether they perform outpatient TSA. If so, they were questioned on the relative percentage of outpatient cases performed, satisfaction with outpatient TSA, concerns, and whether they use nurse navigators or screening questionnaires. Finally, all surgeons were asked to rate 14 potential barriers to successful outpatient TSA from 1 (minor hurdle) to 10 (major hurdle). The 14 potential barriers were formulated after querying the shoulder and elbow surgeons within our practice (see [Appendix 1](#)).

Statistical analysis

The survey responses were collected and tabulated anonymously with use of available software provided by the online survey system. Simple descriptive statistics were performed to analyze the cohort. To identify differences in survey results for surgeons who did and did not perform outpatient TSA, the Student *t* test and χ^2 test were used in bivariate analysis for continuous and categorical variables, respectively. A threshold of $P < .05$ was used for statistical significance.

Results

Respondents' characteristics

The entire survey was completed by 179 of 484 members (37.0%). Of the survey participants, 48.0% (86 of 179) were less than 10 years, 27.4% (49 of 179) were 10 to 20 years, and 24.6% (44 of 179) were greater than 20 years into practice. Most participants were shoulder and elbow (78.2% [140 of 179]) or sports medicine (21.8% [39 of 179]) fellowship trained. The practice setting for the participating surgeons included 38.0% (68 of 179) group-owned private practice, 10.1% (18 of 179) hospital-owned private practice, 33.5% (60 of 179) academic university hospital, and 18.4% (33 of 179) academic-private practice. Of the respondents, 10.1% (18 of 179) reported hospital ownership interest, and 39.1% (70 of 179) reported surgery center ownership interest. A breakdown of practice setting and of ownership interest in a hospital or surgery center between surgeons that do and do not perform outpatient TSA is reported in [Table 1](#).

Shoulder arthroplasty practice

Most surgeons (64.8% [116 of 179]) performed more than 50 shoulder arthroplasties per year. The average age of shoulder arthroplasty patients was between 60 and 70 years for 88.3% (158 of 179) of surgeons. The average length of stay was less than 1.5 days for 70.9% (127 of 179) of the participating surgeons. Overall, 37 of the 179 participants (20.7%) performed outpatient TSAs, and 31.3% (56 of 179)

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