LETTER TO THE EDITOR

Survey of Expert Opinion Regarding Peri-operative Management of Shoulder Arthroplasty

Dear Editor

Total shoulder arthroplasty (TSA) and reverse shoulder arthroplasty (rTSA) surgery have gained popularity for their ability to address a range of shoulder pathologies. Despite increasing data on shoulder arthroplasty management and outcomes, a "gold standard" for perioperative care has yet to be defined, including preoperative optimization and postoperative rehab.[1]

We surveyed the members of the American Shoulder and Elbow Society (ASES) regarding perioperative management of shoulder arthroplasty patients in three main domains: preoperative optimization, intraoperative protocols, and postoperative patient care. To this end, we hypothesized that fewer than 50% of perioperative management questions would garner 75% or more agreement. We also hypothesized that incorporating preoperative optimization, particularly for BMI, hemoglobin A1c, and the use of planning software, would correlate with a surgeon's stage in career/practice volume.

We found that in the preoperative domain, a majority of respondents (70.9%*) refused to operate on patients with elevated hemoglobin A1c levels. On the other hand, a majority (64.9%*) do not use a BMI cutoff. A majority utilize preoperative CT scans and use planning software (72.1%* and 65.3%*, respectively).

Intraoperatively, tranexamic acid (TXA) is administered by 74.8%* of surgeons. A large majority of respondents employ interscalene blocks for preoperative analgesia (90.1%*). About half (50.3%) reported not currently performing TSA as an outpatient procedure. However, a large majority responded (75.9%*) that they would be interested in performing outpatient TSA in the future. Regarding antibiotic prophylaxis, a majority of surgeons give a first generation cephalosporin (72.2%*), with 68.2%* of patients performing a two-stage revision arthroplasty rather than a single-stage procedure in the setting of a chronic periprosthetic infection.

In terms of postoperative medications, a majority of respondents (52.0%) reported routinely prescribing anticoagulants ($P=0.627$). The most popular amount of narcotic pain medicine at discharge was between 20 and 30 pills (41.1%*). Finally, 31.3% of surgeons start physical therapy between one and three weeks postoperatively as the most popular choice, and a majority allow patients to begin pendulum exercises immediately (59.1%*).

On logistic regression analysis, career stage had no significant effect on the likelihood of using a Hgb A1c cutoff, BMI screening, or preferred physical therapy setting. Interestingly, practice volume had a significant impact on the use of planning software ($P=0.006$), with higher volume practices (defined as more than 50 arthroplasties performed a year) having almost three times higher odds of using software compared to lower volume practices (OR=2.74; 95% CI: 1.35 – 5.65) [Figure 1].

Our results illustrate the lack of a consensus TSA-based perioperative management protocol among shoulder and elbow surgeons. We found wide variability in preoperative optimization protocols, particularly with diabetes, obesity, and nutrition. A similarly broad distribution was seen among respondents regarding postoperative therapy, with disagreement regarding initiation, duration, and setting. This study provides a snapshot of the current practices of shoulder surgery experts in preoperative patient optimization, intraoperative management, and postoperative recovery regimens. Further research is needed to establish clear shoulder arthroplasty guidelines to reduce variability in patient care.

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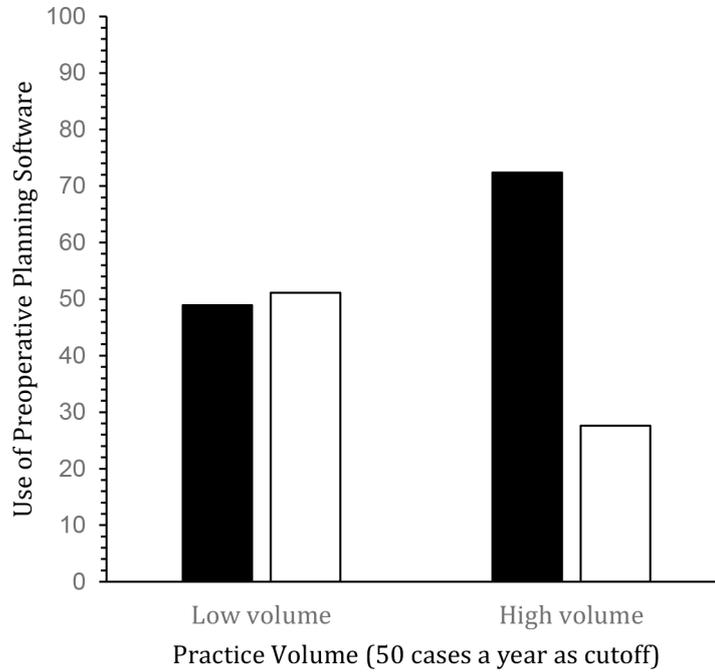4 Johns Hopkins University, Baltimore, USA
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Figure 1. Frequency of respondents using vs. not using software to plan cases within low volume (≤50 TSA per year) and high volume (≥51 TSA per year) practices.

References

1. Management of Glenohumeral Joint Osteoarthritis, Evidence-Based Clinical Practice Guideline.American Academy of Orthopaedic Surgeons (AAOS). Available at: https://www.aaos.org/gjocpg. Accessed March 23, 2020