Orthopedic Shoulder Surgery in the Ambulatory Surgical Center: Safety and Outcomes

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Introduction

• The shift towards performing orthopaedic surgeries in the outpatient setting and in ambulatory surgical centers (ASC) is driven by cost savings for both the patient and healthcare system and patient convenience.

• Current research is limited due to difficulty defining pertinent surgery-related adverse events and it is unknown whether risks of these events are influenced by the outpatient setting of surgical care.

• Literature on the outcomes following shoulder surgery in ASCs in sparse in the orthopedic literature. One study in the anesthesia literature reported a 4.8% rate of unplanned admission following outpatient shoulder surgery.

Objectives

• To compare rates of peri-operative morbidity and adverse events between patients undergoing shoulder surgery in ASC vs Hospital Based Outpatient Departments (HOPD) setting

• To identify factors associated with unplanned admission following surgery

Materials & Methods

20.9 Million patients from Humana
Claims Dataset

CPT codes for shoulder surgeries
excluding arthroplasty and including only surgeries performed in ASC and HOPD

85,549 patients

1:2 Propensity Score Match for the following variables: age, sex, region, race, year, comorbidity burden, anesthesia type, CPT code

23,780 in ASC group
47,279 in HOPD group

Results

Factors Associated with Unexpected Admission

<table>
<thead>
<tr>
<th>Outcome</th>
<th>ASC Odds Ratio</th>
<th>95% Confidence Interval</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Anesthesia (reference group regional)</td>
<td>1.34</td>
<td>1.08-1.59</td>
<td>0.008</td>
</tr>
<tr>
<td>Open Shoulder Surgery (reference group arthroscopic)</td>
<td>2.35</td>
<td>1.90-2.61</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Male Gender (reference group female)</td>
<td>2.58</td>
<td>2.17-3.15</td>
<td>0.007</td>
</tr>
<tr>
<td>Charlson Comorbidity Index (odds ratio represents increased odds for every point increase in CCI)</td>
<td>1.16</td>
<td>1.12-1.17</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>HOPD (reference group is ASC)</td>
<td>2.37</td>
<td>2.18-2.58</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Conclusion

• The lower rates of peri-operative morbidity in the ASC cohort suggest that proper patient selection is taking place and lends reassurance to surgeons who are or are considering practicing in an ASC.

• Patients in whom some or all the risk factors for unplanned admission (general anesthesia, increased comorbidity burden, open surgery) apply may be more suitable for HOPDs as admission from an ASC can be difficult and potentially unsafe.