



Comparison of Postoperative Outcomes in Outpatient versus Inpatient Elective Total Shoulder Arthroplasty

Karim Mhanna B.S., Grace Peterson M.D., Tyler Bilden M.D., Travis Menge M.D., Kendall Hamilton M.D., Peter Ugolini M.D.

Introduction

- **Total shoulder arthroplasty (TSA)**—including anatomic and reverse—has become an increasingly common treatment for: Glenohumeral arthritis, Rotator cuff arthropathy, and Proximal humerus fractures
- **Utilization trends:**
 - TSA rates are rising faster than total hip or knee arthroplasty.
 - Average **hospital stay** decreased from *2.5 days (early 2000s)* to *1.3 days (2020)*.
- **Shift toward outpatient settings:**
 - Outpatient TSA increased from *2.2% in 2010* to *22–38% in 2021–2022*.
 - Growth accelerated after **Medicare approval of outpatient TSA in 2021**.
- **Safety and outcomes:**
 - Studies show **comparable or improved outcomes** for outpatient vs. inpatient TSA.
 - Similar or **lower complication and readmission rates** in outpatient settings.
- **Hypothesis:** Outpatient TSA demonstrates TSA demonstrates *no difference or fewer* short-term adverse events compared to inpatient TSA.

Methods

- **Design:** Retrospective cohort study (May 2021–Apr 2024) at a single integrated health system (hospitals + ASCs). IRB exemption obtained.
- **Data Source:** Electronic medical records and surgical registries; CPT codes 23472 (TSA), 23473–23474 (revisions).
- **Inclusion:** Elective anatomic or reverse TSA.
- **Exclusion:** Fracture cases, hemiarthroplasty, contraindications, or duplicate bilateral TSAs.
- **Variables:** Demographics (age, BMI, diabetes, smoking, ADI), inpatient vs. outpatient status, 30-day complications, ED visits, and readmissions.
- **Definitions:** Outpatient—same-day discharge; Inpatient—overnight stay.
- **Outcomes:** Compare 30-day complications, ED visits, and readmissions between groups.
- **Statistics:** Descriptive and univariate analyses (t-test/Wilcoxon, Chi-square/Fisher's). Correlations via Pearson/Spearman; significance $p < 0.05$.

Results

Study Population:

- 1,436 TSA cases identified; **1,285 met inclusion criteria**
- **Outpatients:** 799 (62.2%)
- **Inpatients:** 486 (37.8%)

Demographics:

- Outpatients were **younger** (67.9 vs. 72.4 yrs, $p < 0.01$)
- **Lower BMI** in outpatients (31.4 vs. 32.4, $p < 0.01$)
- **Lower ADI** (4.3 vs. 4.6, $p = 0.02$)
- **Diabetes:** 15.3% outpatients vs. 20.8% inpatients ($p = 0.01$)
- **Pre-op optimization visit:** 62.6% outpatients vs. 75.1% inpatients ($p = 0.01$)
- No difference in **smoking status** ($p = 1.0$)
- **Revision TSA subgroup:** only diabetes ($p = 0.04$) and pre-op visit ($p < 0.01$) differed

Discharge Status:

- 100% of outpatients discharged home
- 5.1% of inpatients discharged to **skilled nursing facility**

30-Day Outcomes:

- **ED visits:** 6.4% outpatient vs. 12.1% inpatient ($p < 0.01$)
- **Complications:** 2.9% outpatient vs. 5.3% inpatient ($p = 0.03$)
- **Readmissions:** 2.9% outpatient vs. 4.5% inpatient ($p = 0.34$; NS)
- No significant differences in **revision TSA subgroup**

Additional Findings:

- **Diabetes** associated with higher 30-day ED visits (11.7% vs. 7.8%, $p = 0.03$)
- No significant correlations between **BMI** or **ADI** and ED visits, admissions, or complications

Conclusions

- Analysis of **1,285 TSA cases** across hospitals and surgery centers showed that **outpatient TSA** patients had **significantly fewer postoperative complications** and **lower 30-day ED visit rates** than inpatient TSA patients.
- **Readmission rates** within 30 days were **not significantly different**, indicating outpatient management does not increase short-term risk.
- **Outpatient TSA** is a **safe and effective option** with low complication and readmission rates when **patients are appropriately selected**.
- Findings align with prior studies supporting the **safety and efficacy of outpatient TSA** and highlight opportunities to reduce healthcare utilization without compromising outcomes.
- Continued efforts to optimize **patient selection** and **perioperative management** may further improve outcomes and expand safe outpatient TSA use.

References

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