Improving Recovery Efficiency: Early Outcomes of a Posterior vs. Anterior Shoulder En Bloc Recovery Approach

[1]Cassandra Grose, CRCST, CST

[1]Versiti Organ and Tissue, Milwaukee, WI USA

Background

Shoulder en bloc recovery is traditionally performed using an anterior approach. Limited visualization and access during anterior recovery may increase technical difficulty and the risk of contamination. A posterior approach may provide improved exposure. Facilitate tissue handling, and enhance recovery efficiency while maintaining graft quality. This study evaluated whether a posterior shoulder en bloc recovery approach reduces contamination risk and improves procedural efficiency compared with the traditional anterior approach.

Objective

To evaluate whether a posterior shoulder *en bloc* recovery approach reduces contamination risk and improves procedural efficiency compared to the traditional anterior approach.

Methods

A retrospective observational analysis of shoulder *en bloc* recoveries performed from January 2025 to February 2026. Outcomes included microbiological culture results, recovery time, and procedural variables. Contamination was defined as any positive post-recovery culture requiring graft discard or additional processing. Visualization and technique-related factors—incision approach, soft tissue handling, lighting, retraction, and team positioning—were assessed for association with contamination outcomes.

Results

A total of 68 shoulders (34 donors) were analyzed. The anterior approach (46) demonstrated a contamination rate of 17.4%, compared to 9.1% in the posterior approach (22). Culture data from both cohorts predominantly identified organisms consistent with typical skin and environmental flora, including *Bacillus* species, *Enterococcus faecalis*, *Streptococcus viridans*, and non–beta hemolytic *Streptococcus*, suggesting contamination is primarily related to procedural exposure. (Figure 1 Anterior approach vs Posterior approach)

The posterior approach was associated with reduced soft-tissue manipulation and operative exposure, both of which are known to influence contamination risk. Culture-level outcomes showed a higher proportion of sterile (“no growth”) results in the posterior cohort (68.7%) than in the anterior cohort (67.4%). Additionally, the posterior approach improved efficiency, reducing recovery time by approximately 10 minutes per shoulder.

Conclusion

The posterior shoulder *en bloc* recovery approach demonstrates improved procedural efficiency and a directional reduction in contamination rates compared to the anterior approach. Findings support reduced handling and improved visualization as key contributors to decreased

contamination risk. While limited by sample size, continued data collection will strengthen comparative analysis and further define the impact of recovery techniques on graft sterility and recovery performance.

Keywords: N/A

Clinical Trial Registry: N/A

Data Deposition: N/A

Disclosures: N/A

Competing Interests: The authors declare no competing interests.

Ethical Approval: Not applicable — this study did not involve human participants, their data, or biological material.

Funding: The authors received no specific funding for this work.

Corresponding Author: Cassandra J. Grose

References:

- Soceka, Megan. *MTF Biologics Contamination Numbers Related to Shoulder En Bloc Recoveries* . 15 Mar. 2026.
- Fike, Alex. Versiti Contamination numbers related to in-house (for all processing partners) Shoulder En Bloc Recoveries. 31 Mar. 2026.

Tables and Figures:

Figure 1. (Anterior approach vs Posterior Approach)

Metric	Anterior Approach	Posterior Approach
Donors (n)	23	11
Shoulders (n)	46	22
Positive Cultures (n)	8	2
No Growth (n)	31	15
Contamination Rate	17.4%	9.1%

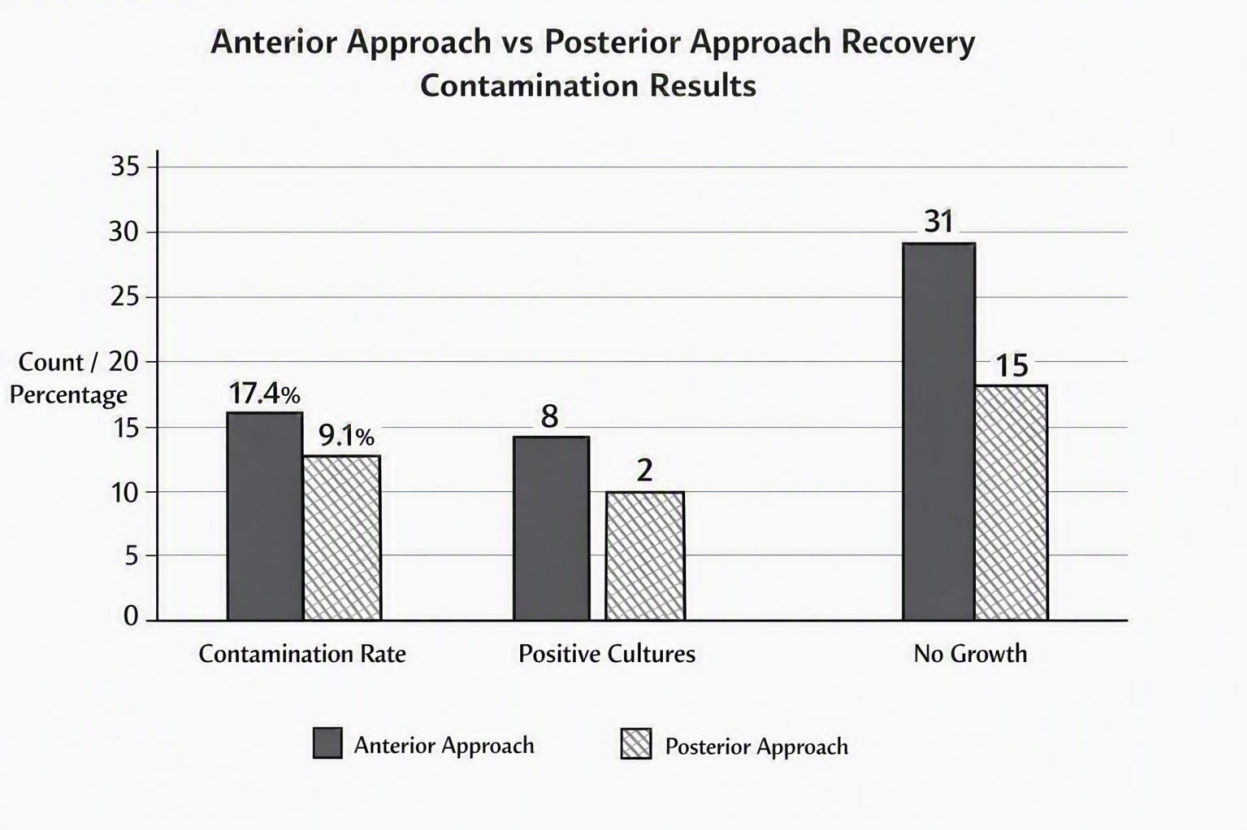


Figure 2: Anterior Approach vs Posterior Approach Recovery Contamination Results.

Improving Recovery Efficiency:

Early Outcomes of a Posterior vs. Anterior Shoulder En Bloc Recovery

Cassandra J. Grose, CRCST, CST
Versiti Organ and Tissue



BACKGROUND

- Shoulder en bloc recovery is traditionally performed using an anterior approach.
- Limited visualization and access during anterior recovery may increase technical difficulty and the risk of contamination.
- A posterior approach may provide improved exposure, facilitate tissue handling, and enhance recovery efficiency while maintaining graft quality.
- This study evaluated whether a posterior shoulder en bloc recovery approach reduces contamination risk and improves procedural efficiency compared with the traditional anterior approach.

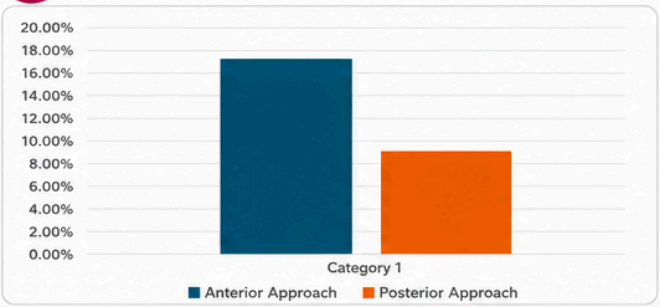
OBJECTIVE

To evaluate whether a posterior shoulder en bloc recovery approach reduces contamination risk and improves procedural efficiency compared with the traditional anterior approach.

METHODS

- Retrospective observational study of shoulder en bloc recoveries performed between January 2025 and February 2026.
- Compared posterior and anterior recovery approaches.
- Primary outcomes: Microbiological culture results and recovery time.
- Secondary outcomes: Procedural variables including visualization, soft tissue handling, lighting, retraction, and team positioning.
- Contamination was defined as any positive post-recovery microbiological culture requiring graft discard or additional processing.
- Associations between surgical approach, procedural factors, contamination, and procedural efficiency were evaluated.

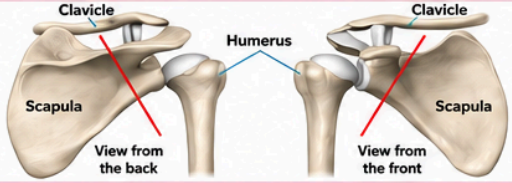
RESULTS



48% REDUCTION
in contamination rate with the posterior approach

RECOVERY OUTCOMES

Metric	Anterior Approach	Posterior Approach
Donors	23	11
Shoulders	46	22
Positive Cultures	8	2
No Growth	31	15
Contamination Rate	17.4%	9.1%



KEY FINDINGS

- **48%** Reduction in contamination rate
- Enhanced intraoperative visibility
- Provides superior surgical field exposure
- **10 min** Reduced recovery time by 10 min. on average

CONCLUSION

The posterior shoulder en bloc recovery approach demonstrated improved procedural efficiency and lower contamination rates. Reduced tissue handling and enhanced visualization may contribute to improved graft sterility outcomes. Continued data collection will strengthen comparative findings.

versiti™
a Donate Life Organization

DONATE LIFE