

Transversus Abdominis Plane Blocks Versus Epidural Catheters in Complex Breast Reconstruction Surgery: A Retrospective Cohort Study

Muser, Tyler MD^{1,2}, Saleem, Huma MD², Shaykhinurov, Eduard MS², Ma, Phillip MD², Ranganath, Bharat MD², Patel, Akhil MD²
¹St Joseph's Medical Center, Stockton, CA, USA.
²George Washington University Hospital, Washington, DC, USA.

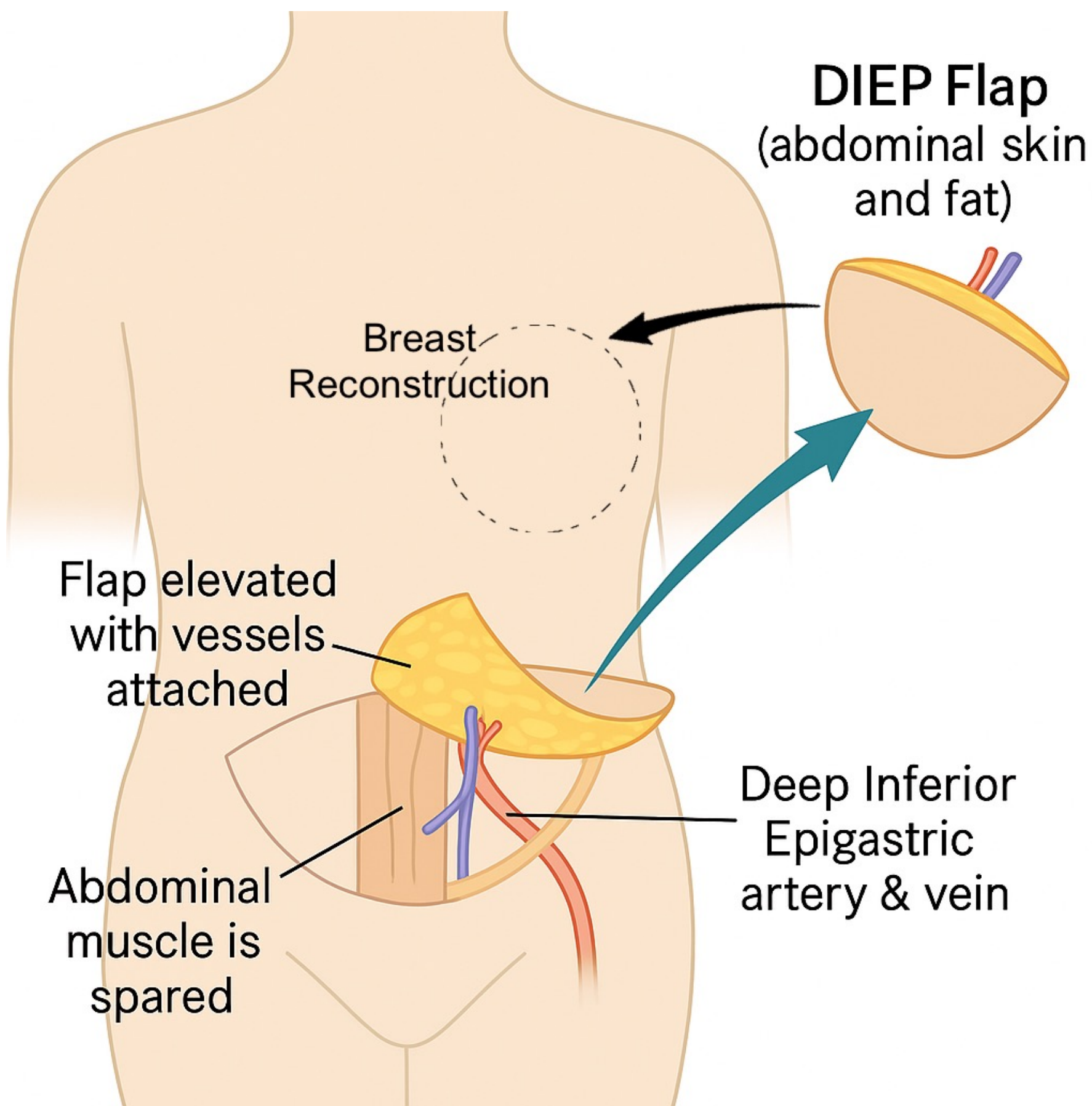
Background

Purpose

- Abdominally based free flap breast reconstruction surgeries are associated with severe postoperative pain →
- We wanted to compare which form of regional anesthesia – Transversus abdominis plane (TAP) blocks or epidural catheters – resulted in better pain control and postoperative recovery outcomes as part of a multimodal pain control regimen

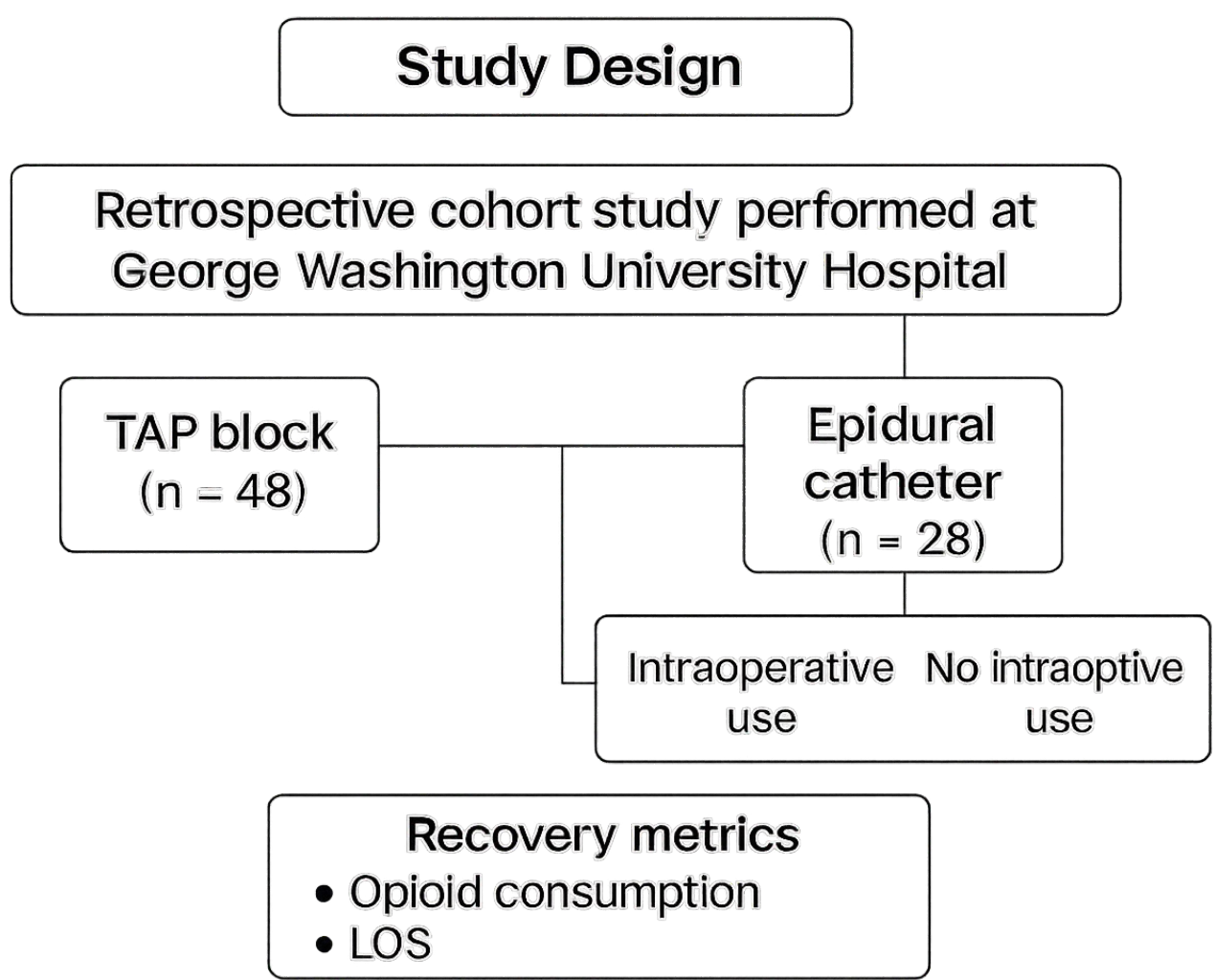
What is ‘Abdominally based free flap breast reconstruction surgery’

This procedure uses a patient’s own lower abdominal skin and fat to recreate the breast after mastectomy



Methods

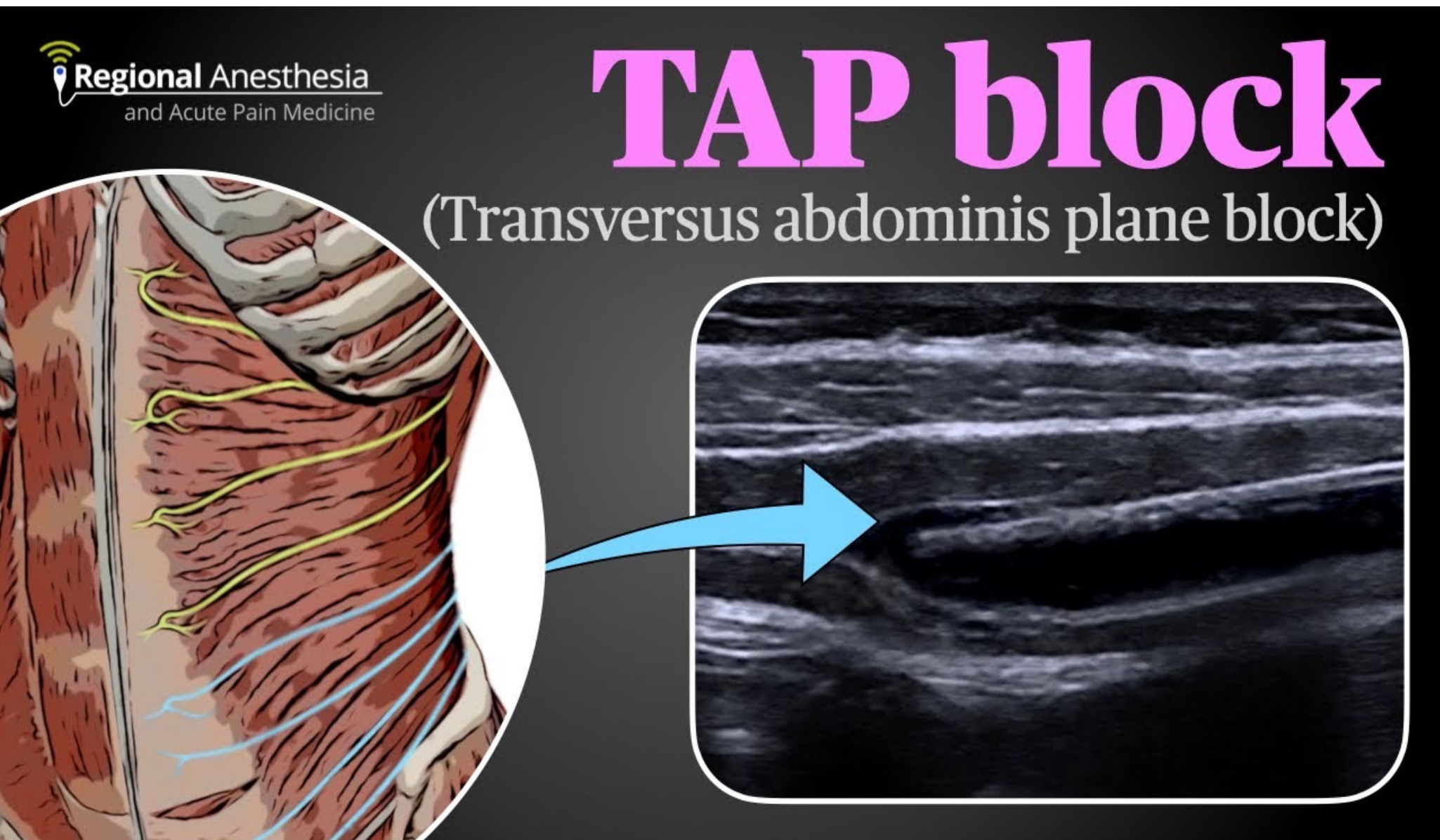
- This retrospective cohort study* was performed at George Washington University Hospital.
- Patients received either a TAP block (n = 48) or an epidural catheter (n = 28), with the epidural group subdivided into those in which the catheter was used intraoperatively and those in which it was not.
- Opioid consumption, including preoperative, intraoperative, and postoperative doses, was converted to morphine milligram equivalents (MMEs), and LOS was obtained from charts.



The two types of regional anesthesia we compared in this study:

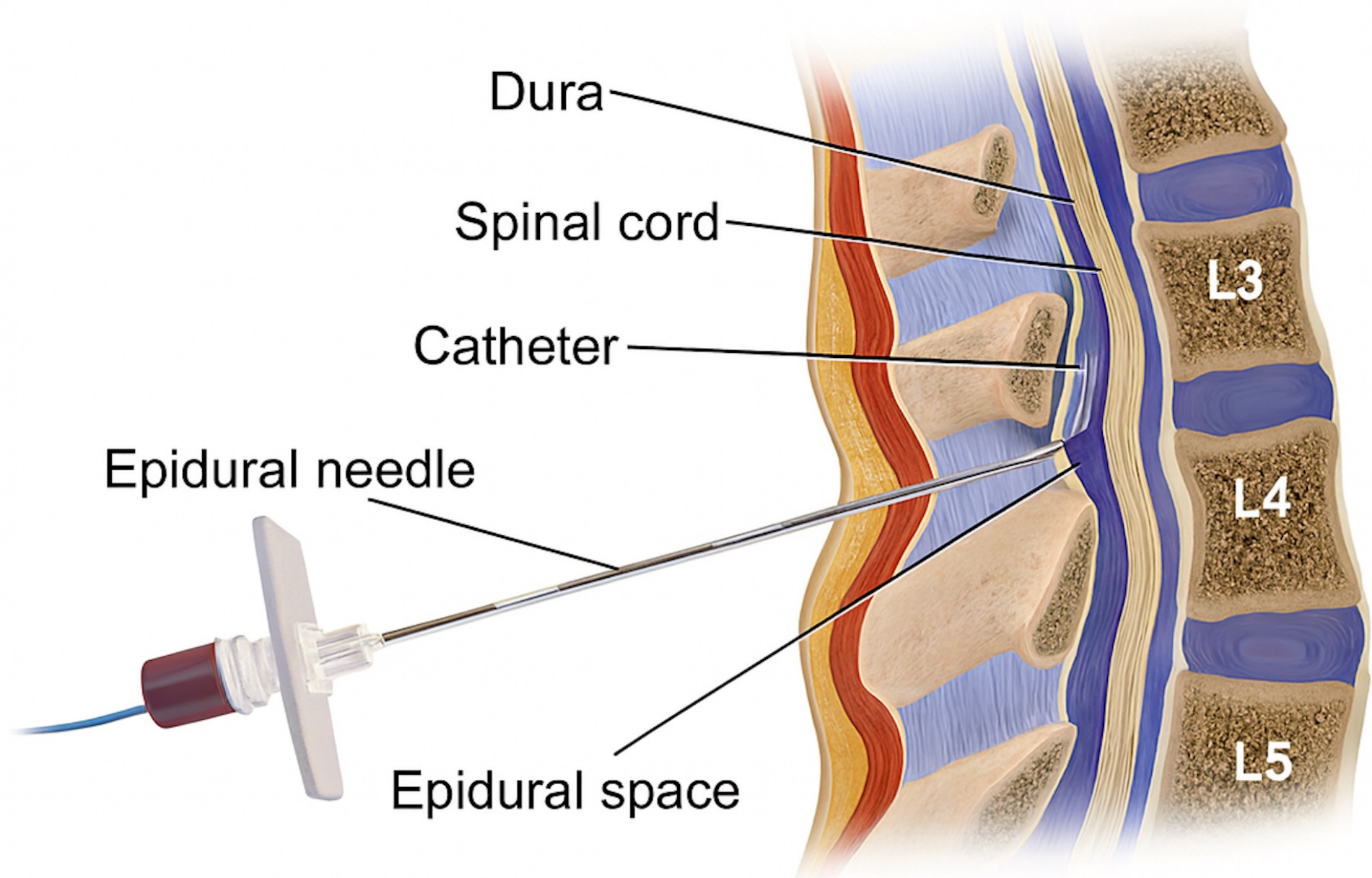
Transversus Abdominis Plane (TAP) Blocks:

TAP blocks involves ultrasound-guided injection of local anesthetic between the internal oblique and transversus abdominis muscles, targeting the **sensory** thoracolumbar nerves (T6–L1) that supply the anterior abdominal wall.



Epidural Catheter Blocks:

A catheter is placed into the epidural space around the spinal cord, allowing infusion of local anesthesia. **Both sensory and motor fibers over multiple dermatomes.**



Results

Table 1 Summary of Postoperative Recovery Metrics

	Epidural Not Used	Epidural Used	TAP	P-Value
n	16	12	48	
MME, mean (SD)	226.4 (217.9)	129.4 (118.9)	121.1 (72.3)	0.015
LOS, mean (SD)	5.4 (0.7)	5.2 (0.7)	3.6 (1.1)	<0.001

- TAP blocks had a significantly reduced mean LOS (p < 0.001).
- LOS between the two epidural groups did not differ significantly.
- There were no significant differences in opioid consumption across groups (p = 0.087).

Conclusion

- TAP blocks were associated with a significantly shorter hospital stay compared to epidural catheters in abdominally based free flap breast reconstruction.
- Opioid administration, however, did not differ significantly between groups.
- These findings support TAP blocks as an effective tool for multimodal analgesia regimens in this population and suggest they may be a superior modality.

References

- Desai N, El-Boghdady K, Albrecht E. Epidural vs transversus abdominis plane block for abdominal surgery: a systematic review, meta-analysis, and trial sequential analysis. *Anaesthesia*. 2021;76(1):101-117.
- Abdallah FW, Chan VW, Brull R. Transversus abdominis plane block: a systematic review. *Reg Anesth Pain Med*.2012;37(2):193-209.
- DIEP Flap vs. Implant Breast Reconstruction. *Texas Center for DIEP Flap Breast Reconstruction*. Published 2024. Accessed October 12, 2025. <https://txdiepflap.com/diep-flap-vs-implant-breast-reconstruction/>
- Epidural Anesthesia. *Belgian Society of Anesthesia and Reanimation*. Accessed October 12, 2025. <https://www.anesthesie-sj.be/en/epidural-eng/>