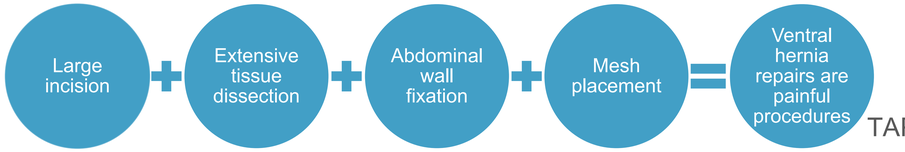
TRANSVERSUS ABDOMINIS PLANE BLOCKS FOR COMPLEX ABDOMINAL WALL RECONSTRUCTION DECREASE HOSPITAL LENGTH OF STAY COMPARED TO EPIDURALS

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BACKGROUND



- Historically, epidurals were considered the gold standard for pain management after abdominal surgeries and are known to provide effective analgesia[1]
- Transversus abdominis plane (TAP) blocks provide regional anesthesia to the anterolateral abdominal wall by interfering with afferent neurovascular bundles from the ventral rami which are located between the internal oblique muscle and the transversus abdominis muscle[2]
- TAP blocks interrupt the transmission of pain signals ultimately treating the source of pain compared to parenteral and enteral analgesic methods which treat the symptom of pain by dampening the receptors[2]

HYPOTHESIS

- TAP blocks with liposomal bupivacaine decrease the length of stay (LOS) compared to epidurals and intravenous pain medication (IVPM)

METHODS

- A retrospective review of all open ventral hernia repairs with retrorectus mesh between 2016 and 2020
- Length of stay (LOS) was used as the primary outcome
- Secondary outcomes included post-operative pain and 90-day post-operative complications

RESULTS

- Patients with TAP blocks went home an average of 1.4 days sooner than patients who had an epidural

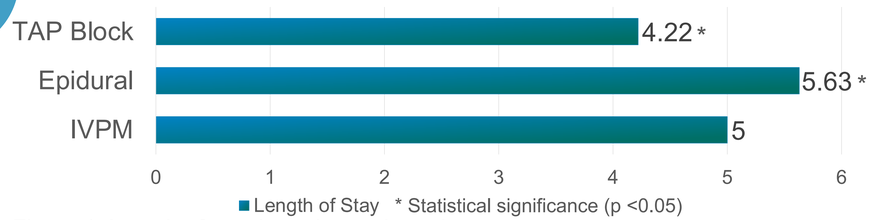


Figure 1. Length of stay based on pain regimen

- Epidurals were used in patients with longer surgeries and larger areas of mesh
- Patients with TAP blocks had higher POD1 and POD2 pain scores compared to patients with epidurals
- There were no significant differences in post-operative complications

Table 1. Outcomes based on pain regimen

	IVPM	Epidural	TAP Block	P-value
Number of patients (n)	11	66	18	
Length of Stay (days)	5.00 ± 1.00	5.62 ± 1.66	4.22 ± 1.40	0.004*
Mesh Size (cm^2)	379.09 ± 167.28	461.85 ± 172.19	338.17 ± 144.91	0.015*
Duration of Surgery (minutes)	216.45 ± 69.14	251.11 ± 71.49	207.94 ± 51.90	0.034*
POD1 Max Pain Score	6.91 ± 1.97	5.00 ± 2.56	7.50 ± 1.72	0.0002*
POD2 Max Pain Score	5.18 ± 2.23	4.12 ± 2.45	7.17 ± 2.01	0.00002*

* Statistical significance (p <0.05)

CONCLUSION

- TAP blocks with liposomal bupivacaine should be considered for post-operative pain control in complex ventral hernia repairs
- Our study found no difference in the number of post-operative complications between the TAP block group and epidural group suggesting that shorter stays are not associated with worse outcomes
- The higher pain scores associated with TAP blocks and the lack of a difference in post-operative outcomes supports the need to individualize care by weighing the risks and benefits of each modality

SPECULATION

- Considering TAP blocks cover T9-L1 dermatomes, epidurals may prove to be beneficial for very large hernias that would extend outside of this range
- While this study was not designed to assess the cost differences between liposomal bupivacaine and epidurals, the decreased LOS by an average of 1.4 days should offset the increased cost of liposomal bupivacaine

REFERENCES

1. Iyer, S. S., Bavishi, H., Mohan, C. V., & Kaur, N. (2017). Comparison of Epidural Analgesia with Transversus Abdominis Plane Analgesia for Postoperative Pain Relief in Patients Undergoing Lower Abdominal Surgery: A Prospective Randomized Study. *Anesthesia, essays and researches*, *11*(3), 670–675. https://doi.org/10.4103/0259-1162.206856
2. Fayezizadeh M, Majumder A, Neupane R, Elliott HL, Novitsky YW (2016) Efficacy of transversus abdominis plane block with liposomal bupivacaine during open abdominal wall reconstruction. Am J Surg 212(3):399-405. doi: 10.1016/j.amjsurg.2015.12.026. Epub 2016 Apr 12. PMID: 27156796.

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