

Thoracic Segmental Spinal Anaesthesia for Breast Surgeries - A Prospective Case Series

Sandeep Reddy¹, Kiran Madhala²

¹Government Medical College, Nizamabad 503001, Telangana, India
Email: sandeepreddy.tsr[at]gmail.com

²Government Medical College, Nizamabad 503001, Telangana, India
Email: drkiranmadhala[at]gmail.com

Abstract: *The epidemiology of breast pathologies has seen a notable rise, driven by increased awareness, screening efforts, and advanced diagnostic tools, necessitating a surge in surgical treatments. While general anesthesia remains the conventional choice for breast surgeries, it comes with drawbacks such as drug-related side effects, delayed recovery, and inadequate post-operative pain management. As an alternative, this study explores the feasibility and effectiveness of thoracic segmental spinal anesthesia in female patients undergoing minor breast surgeries. A case series involving five ASA I / II female patients with breast pathologies undergoing procedures like Lumpectomy and Fibroadenoma excision was conducted. The patients received thoracic segmental spinal anesthesia at T4-T5 level, and outcomes were observed. The study found that this technique was effective, resulting in minimal hemodynamic instability and high patient satisfaction. However, further research with larger sample sizes and comparative analysis is warranted to comprehensively evaluate potential drawbacks and complications associated with this approach.*

Keywords: breast pathologies, thoracic segmental spinal anesthesia, minor breast surgery, anesthesia technique, patient satisfaction, isobaric ropivacaine, butorphanol

1. Case Series

- Case series was done in five female patients of ASA I / II with breast pathology posted for minor breast surgery like Lumpectomy and Fibroadenoma excision.
- Written informed consent from the patient was taken and proper pre-anaesthetic evaluation and routine investigations were done.
- On arrival to the operating room ECG, NIBP and Pulse oximeter were connected.
- Thoracic segmental spinal anesthesia was done at T4 - T5 level with 27G Needle and 1.5ml of Isobaric Ropivacaine 0.75% with 0.2ml of Butorphanol was given.
- Patients were placed in the neutral position and sensory block was achieved from T2 - T10 level.
- Respective surgeries lasted from 30 - 90 mins.
- Following parameters enlisted in the table beside have been observed to access the outcome.

Anaesthetic technique and outcome	
1. Midline approach	4 (80)
2. Paramedian approach	1 (20)
3. Paresthesia from spinal needle	0 (0)
4. Paresthesia during injection	0 (0)
5. Sensory block level achieved (from T2- T10)	5 (100)
6. Duration of surgery (min)	60 ± 30
7. Time to full block regression (min)	150 ± 30
8. Need for intraoperative analgesia	0 (0)
9. Need for General Anaesthesia	0 (0)
10. Complications	
Hypotension	0 (0)
Bradycardia	1 (20)
Nausea	0 (0)
11. Post operative neurological deficit	0 (0)
12. Patient satisfaction	
Totally satisfied	5 (100)

Data are expressed as n (%) or mean (range); T, thoracic



2. Discussion

- Posterior subarachnoid space is wider at the mid-thoracic region compared with other regions, which was shown in the study by imbelloni et al [1] who performed MRI of the thoracic spine in 50 patients. Going by this study we performed the block at T5 Level to minimize the risk of injuring the spinal cord and noticeably there was no evident neurological deficit post operatively.
- In another study by Van Zundert et al [2] who performed segmental spinal anaesthesia at T10 level in

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20 patients and the sensory block was achieved from T2 - T4 had minimum haemodynamic changes and no respiratory complications. Similarly in our study, one out of five patients had bradycardia which was managed by Inj. Atropine

3. Conclusion

- We have found that segmental spinal anaesthesia for minor breast surgery performed at T5 level was effective and associated with minimal haemodynamic instability and a high patient satisfaction rate.
- The main limitations of this study are the small number of patients included as well as the absence of the comparison with another technique whether general or regional. Further studies with larger sample sizes are required to infer any potential disadvantages or complications associated with this technique.

References

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Author Profile



Sandeep Reddy, 2nd Year Post Graduate in MD Anesthesiology, Government Medical College, Nizamabad 503001, Telangana, India



Kiran Madhala, Professor and Head of the Department, Department of Anesthesiology, Government Medical College, Nizamabad 503001, Telangana, India