

# Erector Spinae Plane (ESP) block – A new approach to acute pain management following Video Assisted Thoracic Surgery (VATS)

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## Background

- Epidural analgesia is still considered the gold standard in pain management following thoracotomy<sup>1</sup>, but as the transition to minimally invasive techniques gathers pace, our peri-operative pain strategy must evolve too.
- VATS (Video Assisted Thoracic Surgery) has no such analgesic gold standard; Paravertebral blocks with or without indwelling catheters, a variety of chest wall blocks and systemic analgesics are all gaining favour in different institutions.
- With our recent focus on enhanced recovery following minimally invasive surgeries such as VATS, regional blocks without indwelling catheters are important for acute post-operative pain management as part of multimodal analgesia.
- The ultrasound (US) guided erector spinae plane (ESP) block, a novel interfascial plane block defined by Forero et al. in 2016<sup>2</sup>, is one such technique.
- Available literature suggests that this block provides effective thoracic wall analgesia in cases of rib fracture<sup>3,4</sup>.

## Aims and objectives

- Our aim is to compare analgesic efficacy of the ESP block against paravertebral catheters (PVC) for management of acute post-operative pain following VATS.
- To be able to make the comparison, we looked at the breakthrough analgesia requirements post-operatively in both groups along with any episodes of severe pain requiring repeat regional block.

## Methods

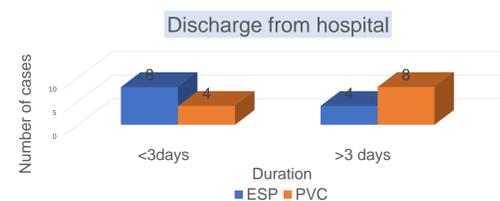
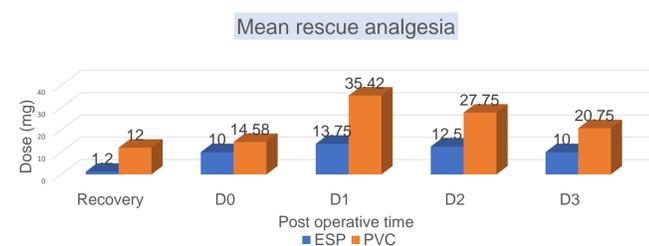
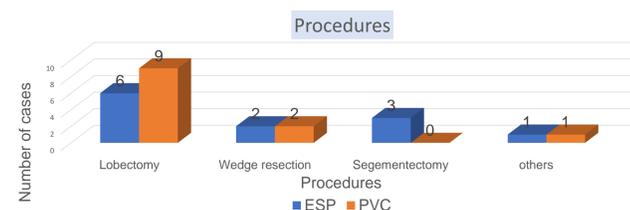
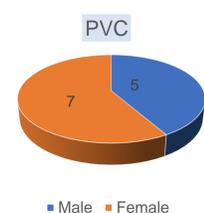
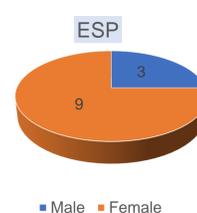
- We recruited a total of 24 patients into two groups of 12 and collected data retrospectively by reviewing patient records.
- The ESP group received oral gabapentin (600mg) pre-operatively. ESP block was performed before the surgical incision using ultrasound guidance using 20 ml of 0.5% L-bupivacaine



- In the Paravertebral group, no gabapentinoids were given pre-operatively. The Paravertebral catheter (PVC) was surgically placed and a bolus dose of 20 ml of 0.5% L- bupivacaine was given and a continuous infusion started in recovery.
- Anaesthesia was maintained using propofol and remifentanyl TIVA.
- Intra-operative and post-operative rescue opioid requirements were noted up to 3 days post-operatively.
- Post-operative analgesia was prescribed as per the departmental practice. We also looked for any episodes of severe pain requiring repeat regional analgesia.

## Results

- There was no significant difference in mean intra-operative opioid use between the two groups.
- Patients from the PVC group required significantly more rescue analgesia in recovery (p=0.0235) and on post-operative day 1 (p=0.0058)
- One patient from the PVC group required repeat regional block whilst none from the ESP group did.
- Discharge from hospital was earlier in the ESP group with 66.66% patients discharged by day 3 as compared to 33.33% from the PVC group.



## Conclusion

Erector spinae plane block is a useful technique to consider for acute post-operative pain management following Video Assisted Thoracic Surgery.

## References

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