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Comment on Published Article

Comment on “Combined thoracic epidural anaesthesia and interscalene brachial plexus block for modified radical mastectomy in a high-risk patient”

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Dear Editor,

We read the above-referenced article authored by Mahadik et al. recently published in your esteemed journal with great interest.¹ The authors have done a commendable job in conducting this challenging case and drafting the article but we would like to highlight some concerns through this correspondence.

The authors have reported successful perioperative management of 70-year-old patient for MMR under combined thoracic epidural anaesthesia and ipsilateral interscalene block (ISB) Patient had active bronchial asthma with audible wheeze and a history of severe bronchospasm post-extubation and need for mechanical ventilation in the last surgery. We commend the authors for their choice, but regional anaesthesia is a risky proposition in high risk patient unless conducted vigilantly and planned meticulously.

The authors chose to administer 16ml of 0.5% bupivacaine at T6 level. The tip of the catheter was 11 cm beyond the skin and the depth of loss of resistance has not been clarified. It will likely be at upper thoracic level and with the volume and concentration of local anesthetic (LA) utilized, the dermatomal blockade can reach a very high level and bilateral thoracic motor blockade

can lead to breathing difficulty and sympathetic blockade leading to hypotension.² A paravertebral block(PVB) providing unilateral segmental anaesthesia would have been a better choice instead.² In a Cochrane metanalysis, the PVB was found to be as effective as thoracic epidural blockade in controlling acute pain for thoracic surgeries while being safer.³ Further the thoracic epidural can have a very high (up to 20% incidence) of failure.²

Further, the authors mentioned multiple missing teeth and patient was elderly. So airway management and other interventions can be tricky and further difficult intraoperatively when managed as emergency. Notwithstanding, the authors failed to comment on very important aspects like airway assessment parameters, METs, NYHA grading, any pulmonary function tests, and why her chest condition was not optimized before surgery.

Further, authors administered 0.5% bupivacaine (6ml) and 2% lignocaine (9ml) with adrenaline using neurostimulation guidance. Firstly, 15ml is a very high dose, and any volume of 10ml or more has a 100% incidence of phrenic nerve blockade which leads to at least a 25% decrease in FEV1 and can be catastrophic for this patient.⁴ Ultrasound guided block with precise LA deposition limiting LA volume and 0.2%-0.375% concentration would be a better strategy as 0.5% bupivacaine is not required for covering these sensory nerves. Further, supraclavicular

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nerves are branches of cervical plexus which may not get covered with ISB and need infiltration below the clavicle. Similarly, anterior cutaneous branches of intercostal nerves need skin infiltration on the medial side of the breast.

Instead of the thoracic epidural block with ISB using such high volumes, a paravertebral block using lower volumes of local anesthetic in combination with blocks targeting individual nerves like the PEC-II block (lateral and medial pectoral and intercostobrachial nerves) with a supraclavicular nerve block with or without an anterior cutaneous branch block (pecto-intercostal fascial plane block or infiltration along medial sternal border) would have been a safer choice.²

Authors have not mentioned body weight which is important information in deciding the dose of local anesthetic. The total dose of bupivacaine used was 22ml of bupivacaine which comes to be 110mg, in addition to 180mg of lignocaine. This will exceed the maximum dose for a 50kg patient, especially in old frail patients where great caution is needed.⁵ Local anesthetics such as ropivacaine or levobupivacaine would have been a safer choice.

To conclude, we are hopeful, that the readers will get some more insight into this topic through our correspondence.

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