



Response to a letter

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To the Editor:

We are grateful to Dr. Fu-Shan Xue et al. for their helpful comments [1] on our manuscript [2]. Our study has shown that the divided method of multi-level intercostal nerve blocks (ICB) for video-assisted thoracoscopic surgery (VATS) for malignant tumors could reduce the dose of nerve block usage. Our comments on their suggestions are as follows.

(1) The dosage of ropivacaine for ICB

The thoracic surgeons had indeed administered high-concentration ropivacaine (0.75%) for ICB in our facility. We acknowledge the suggestion made by the new anesthesiologist to consider administering 0.25% ropivacaine instead, as 0.75% ropivacaine is excessive as they have mentioned. There is insufficient evidence on the ropivacaine concentration of ICB; it has been determined empirically at many facilities. More evidence-based ICB protocol is desired.

(2) Preemptive analgesia

We agree that the incisional local anesthetic infiltration before surgery may have affected the results. Our results are not a simple ICB method comparison and may suggest the usefulness of preemptive analgesia. Nevertheless, there is a possibility that the preemptive analgesia would influence the effectiveness of postoperative pain. Further research is essential to advance our understanding of multi-level ICB.

(3) Postoperative numerical rating scale (NRS)

The NRS was recorded by the nursing staff when the patients were at rest. We should have provided this information. Certainly, the NRS score does not explain all

postoperative pain. In future studies, evaluating pain scores immediately after surgery and during coughing and body movements would be good.

(4) Remifentanyl dosage

Although there was a difference of perioperative remifentanyl dosage between the two groups significantly, which has limited clinical relevance, because this was a retrospective study and anesthesia were not unified. This result should be assessed with caution.

(5) Postoperative management

The postoperative analgesia should have been done according to Enhanced Recovery After Surgery (ERAS) guidelines. Nevertheless, the insufficiency of multimodal pain management could have existed as postoperative management was primarily overseen by the thoracic surgeons in our facility. As they pointed out, different results may be obtained depending on perioperative management. Establishing a study design to determine ICB effectiveness under adequate multimodal analgesia is difficult but important.

(6) Statistical analysis

We sincerely apologize for any confusion caused by including multivariable logistic regression analysis in the statistical analysis data section of our manuscript. This was an error on our part, and we appreciate Dr. Xue and colleagues' diligence in pointing it out. We confirm that such analysis was not conducted in our study.

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Declarations

Conflict of interest None.

References

1. Yuan Y-J, Li X-Y, Xue F-S. Correct interpretation of between-group statistical differences in analgesic efficacy of different intercostal nerve block modalities.

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2. Nakai A, Nakada J, Takahashi Y, Sakakura N, Masago K, Okamoto S, Kuroda H. Divided method of intercostal nerve block reduces ropivacaine dose by half in thoracoscopic pulmonary resection while maintaining the postoperative pain score and 4-h mobilization: a retrospective study. *J Anesth*. 2023. <https://doi.org/10.1007/s00540-023-03229-w>.

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