



## Potential mechanism for bilateral sensory effects after a unilateral erector spinae plane block

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Received: 22 December 2019 / Revised: 23 December 2019 / Accepted: 16 January 2020 / Published online: 22 January 2020  
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To the Editor,

We read with interest the recent letter of Dr. Altıparmak *et al.*<sup>1</sup> regarding the potential mechanisms for bilateral sensory effects after unilateral erector spinae plane blockade (ESPB) in patients undergoing laparoscopic cholecystectomy. Their observations allude to possible effects on the extent of sensory blockade resulting from pneumoperitoneum and patient positioning.

Pneumoperitoneum during laparoscopic surgery has important effects on abdominal wall mechanics and on the topography of the abdominal muscle layers. Consequently, it might influence the spread of the local anesthetic (LA) deposited between the muscle layers in the abdominal wall. Altıparmak *et al.* mainly based their arguments on the study in fresh-frozen cadavers by Desmet *et al.* where they injected methylene blue dye to study whether a pneumoperitoneum influences the spread of LA during the midaxillary approach of the transverse abdominus plane (TAP) block.<sup>2</sup> Nevertheless, we question certain points that they address.

Although Desmet *et al.* did not find a statistical difference in the methylene blue dyed surface area between the insufflated sides and non-insufflated sides, the percentage of stained segmental nerves was higher after insufflation. Altıparmak *et al.* conclude that, similarly to the results of Desmet *et al.*, a pneumoperitoneum-related mechanism can influence the spread of LA solution during ESPB. Nevertheless, Desmet *et al.* clearly explained that a posterior spread was not possible during the TAP block and therefore excluded a spread toward the paravertebral space. The observed extension in their study was craniocaudal, in the region between the iliac crest and the costal margin, which explains that the percentage of stained segmental nerves was higher after insufflation; in no observations did the dye cross the midline.

The second question relates to the volume of LA used to perform the unilateral ESPB. The authors stated that 30–40 mL of 0.25% bupivacaine was injected unilaterally. We suggest that a volume of 40 mL is unusually large and may have unduly influenced the wide spread of the anesthetic more than the pneumoperitoneum did. Thus, it makes it difficult to know if the same effects would be expected with the much smaller volumes typically used in clinical practice.

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This letter is accompanied by a reply. Please see Can J Anesth 2020; 67: this issue.

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**Conflicts of interest** None.

**Funding statement** None.

**Editorial responsibility** This submission was handled by Dr. Hilary P. Grocott, Editor-in-Chief, *Canadian Journal of Anesthesia*.

## References

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