



Letter to the Editor

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Local anesthetic systemic toxicity following erector spinae plane block: sometimes less is more

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In their recent communication Yawata et al. [1] report a case of local anesthetic systemic toxicity (LAST) following ultrasound guided lumbar erector spinae plane block (ESPB) in a patient undergoing endoscopic surgery for lumbar spinal stenosis. I commend the authors for sharing their experience, although contrary to their assertion there has in fact been a previous report of this complication in the literature [2]. However, the previous report by Karaca and Pinar [2] had critical omissions that made it of limited value, most notably the body weight of the patient, and the concentration of local anesthetic (LA) drugs used.

Yawata et al. [1] report the use of a total volume of 30 ml of 0.5% (150 mg) levobupivacaine in a 58 kg man (body mass index 21.8 kg/m²). They describe the use of techniques designed to minimize the risk of inadvertent intravascular injection, observing linear spread of injectate in the plane deep to the erector spinae muscle, and the absence of blood on aspiration. In common with the previous report the principal manifestations of LAST following ESPB were neurological.

Interfascial (or fascial) plane blocks are regarded as ‘volume’ blocks. The underlying principle is that a volume of LA is injected into a fascial plane remote from the intended site(s) of action. The LA has to traverse the fascial plane to reach the intended target nerve(s). This is in direct contrast to nerve blocks or plexus blocks, where the neural target is visualized using ultrasound and LA is deliberately deposited in close proximity to neural structures, often permitting the use of lower volumes of LA. In contrast to ‘traditional’ nerve blocks fascial plane blocks are rarely used as a sole anesthetic technique.

The use of ESPB for surgery of the lumbar spine remains controversial at this time [3], although there is evidence that ESPB reliably blocks the dorsal ramus of the spinal nerves [4]. Thus, of all the reported uses of ESPB to date, its use in back surgery is one of the most promising areas for further investigation [5].

It could be argued that the risk of LAST could be reduced by using a lower concentration of LA, while still utilizing the required volume. There is a paucity of data comparing the duration of action of different concentrations of LA in fascial plane blocks. Similarly, the maximum safe dose of LA for fascial plane blocks has not yet been formally elucidated. Therefore, in the interest of patient safety it would seem wise when using large volumes of LA to use a lower concentration of LA (such as 0.25% rather than 0.5% levobupivacaine) for ESPB.

While there remain many unanswered questions about ESPB, there is certainly no evidence of reduced efficacy of ESPB with lower concentrations of levobupivacaine.

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Conflicts of Interest

No potential conflict of interest relevant to this article was reported.

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