

New Name, No Novelty

To the Editor:

We read with interest the study by Shibata et al (1). We have been involved in the investigation of block execution in the exact same anatomical area, and recently we have performed a very similar cadaveric study (2). Thus, we were quite surprised that the ongoing academic discussion regarding “paravertebral blocks by proxy” (as this “novel” costotransverse foramen (CTF) block adhere to) is omitted in the study (1). Nevertheless, the study by Shibata et al (1) unfortunately contains many inaccuracies that need to be further addressed.

The mid-point transverse process to pleura (MTP) block (3) is referenced as a plane block. Evidently this is not the case, since the MTP block is not injected into any anatomical plane. Rather, the MTP block, as well as the costotransverse block (2), targets the intertransverse tissue complex (ITTC), which has previously been described in much detail (2,4,5).

The mechanism of action of the erector spinae plane (ESP) block (6) is described as being dependent upon anterior spread into the thoracic paravertebral space (TPVS). As much controversy still exists regarding the exact mechanism of action of the ESP block (i.e., is the clinical success [partly?] due to the spread to the lateral cutaneous branches of the intercostal nerves?), we believe this conclusion cannot be left unchallenged in the study by Shibata et al (1). The clinical cases in the study (1) may serve as proof as only very sparse cutaneous sensory loss of the anterior thoracic wall was determined by pinprick (despite clinical low rest pain scores on ESP block sides).

We agree that the CTF is a possible passage to the TPVS, however the authors should emphasize that the CTF is not an open and empty “free hole” per se. Rather, it is a passage way for the dorsal ramus of the thoracic spinal nerve and the accompanying blood vessels at each thoracic level. The nerves and the vessels in the CTF are engulfed in fat and thus, this fat-filled hole contains anatomical structures that communicate between the TPVS, the ITTC, and the muscles of the back properly. The CTF block targets the near vicinity of the CTF and despite the needle tip target being bone contact, the risk of causing direct nerve (or vessel) damage is undoubtedly high.

Quoting Shibata et al. (1): “We performed a needle

injection with minimal dye to the CTF under ultrasound guidance from the other side to assure the needle pathway.” This sentence from the methods section is very unclear and needs clarification; what other side?

When confirming the correct needle tip location, it is stated: “...distension of the fascial plane between the back muscle and the TP...”. “Back muscle” is not a correct anatomical term (aforementioned) and we are insecure that the authors know which (muscular?) structure they refer to. The ultrasound pictures provided in Shibata as Fig. 3D and F (1), may serve as a proof as the needle tip unmistakably targets a completely grey, blurry “structure” without any recognizable so-anatomical landmarks.

In the results section another quote: “With CTF injections, the dye spread was more medial, toward the intertransverse ligament.” This does not make any sense as the intertransverse ligament is located far lateral with respect to the CTF.

Figure 1A – C (1) is troubled as almost all labeling and figure legend are incorrect, especially regarding the superior costotransverse ligament and CTF in Fig. 1A and 1B. Figure 5C is wrongly labeled as it is a basic anatomical fact that the intervertebral foramen in the thoracic spine is invisible when viewed posteriorly.

In the discussion yet another quote: “[injection point]... was anterior to the intertransverse ligament”. Incorrect interpretation of the ITTC anatomy is sadly increasingly common (5). The injection point described (1) is anteromedial (with emphasis on medial) in regards to the intertransverse ligament.

Shibata et al (1) propose this CTF block as a novel block modality. We believe the novelty is negligible as the needle tip target is almost identical with previous described paravertebral by proxy blocks (e.g., the subtransverse process interligamentary block) (4,7). Moreover, Costache et al (3) describes that anterior spread of injectate from the MTP block could possibly occur through the CTF. We also find spread of the dye from the ITTC to the TPVS through the CTF with the costotransverse block (2).

Discussions regarding paravertebral by proxy blocks need to be founded on accurate understanding of the anatomy and a thorough knowledge of the existing peer reviewed literature. The emerging plethora of “novel” regional anesthesia techniques is redundant.

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