LETTER

Superior costotransverse ligament is the main actor in permeability between the layers? Target-specific modification of erector spinae plane block

To the editor,

There is controversy regardingmechanisms of action of the erector spinae plane block (ESPB). Both cadaveric and clinical imaging studies have shown local anesthesia spread between transverse processes and erector spinae muscles in craniocaudal direction with limited spread anteriorly. It has been shown that local anesthetics can spread to the paravertebral area by extending through the intertransverse ligament.[1]

Accordingly, increasing the volume of local anesthetic resulted in better clinical effects.[2] In a cadaver study by Nielsen et al,[3] it was shown that gaps were formed between the superior costotransverse ligament (SCTL) in the thoracic paravertebral area which contained the dorsal rami of the spinal nerves. [3]In addition, Nielsen *et al* demonstrated the passage of injection between the lateral costotransverse ligament and SCTL. On the contrary because of limited spread Ivanusic *et al*[4] stated that that ESPB could not be an alternative to paravertebral block.

In our clinic, to increase the effectiveness of ESPB, we started using a double injectiontechnic. 10 ml of local anesthesia is injected like a traditional ESPB between transverse process and muscle layers.Then, we advance the needle over the intertransverse ligament and inject 15 mL local anesthesia above the SCTL in the area between the two transverse processes (figure 1).

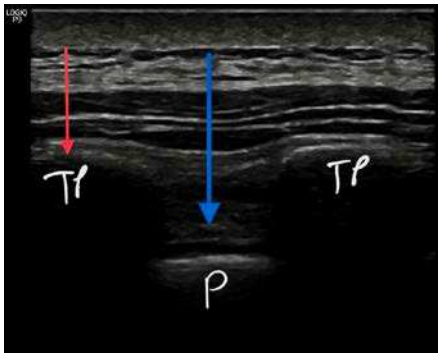

Figure 1 İnjection points of the modified ESPB (TP: transverse processes; P: pleura; red arrow: first injection; blue arrow: second injection). ESPB, erector spinae plane block.

In our modification, although local anesthesia was given above the SCTL, it was seen that the downward orientation of the pleura indicating paravertebral spread. We have seen better clinical results since we started this modification of ESPB.

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