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 regarding mechanisms 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 liga-
ment (SCTL) in the thoracic paravertebral
area which contained the dorsal rami of
the spinal nerves. In addition, Nielsen et
al demonstrated the passage of injection
between the lateral costotransverse liga-
ment and SCTL. On the contrary because
of limited spread Ivanusic et al stated that
that ESPB could not be an alternative to
paravertebral block.

In our clinic, to increase the effective-
ness of ESPB, we started using a double
injection technic. 10 ml of local anes-
thesia 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).

In our modification, although local
anesthesia was given above the SCTL,
nevertheless we have seen better clinical
results since we started this modification
of ESPB.

Sami Kaan Coşarcan, 1 Alper Tunga Doğan, 1
Ömür Erçelen, 1 Yuşuz Gürkan 2

1Anesthesiology, American Hospital, Istanbul, Turkey
2Anesthesiology and Reanimation, Koc University
School of Medicine, Istanbul, Turkey

Correspondence to Dr Sami Kaan Coşarcan,
Anesthesiology, American Hospital, Istanbul 34365,
Turkey; skcosarcan@gmail.com

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