



Correspondence

Ultrasound guided serratus posterior superior muscle block relieves interscapular myofascial pain[☆]



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Myofascial pain
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To the Editor,

An interscapular pain is recognized as a symptom accompanying low cervical spondylosis or facet joint disorders [1], which causes pathologically a myofascial pain syndrome [2]. In clinical settings, it often presents trigger points in the muscles around the scapula, and several reports are addressed that the trigger point injections or interfascial injections are effective [3]. Recently, serratus posterior muscles have a proprioceptive role for myofascial pain. Above all, serratus posterior superior muscle (SPS) deeply related to shoulder pain and dysfunction [4]. McCarthy et al. described that ultrasound-guided real-time trigger point injections to SPS relieves scapular pain due to scapulocostal syndrome referred to cervical spondylosis or shoulder problem [5]. We modified their technique and performed ultrasound-guided SPS block for patient suffering from interscapular pain. After obtaining the written informed consent for the procedure and the future publishing, the patient was placed in the sitting position. A 8–5 MHz microconvex transducer (c11x; Fujifilm Sonosite Japan Inc.) or a 13–6 MHz high frequency linear transducer (HFL38x; Fujifilm Sonosite Japan Inc.) was chosen according to the physique of the patients. The probe was placed with a sagittal position to the intercostal space, inside of the upper-medial border of the scapula around the most painful region (Fig. 1A). Visualizing the SPS muscle on the surface of the 2nd or 3rd rib, the 25G regular-bevel needle was inserted from caudad to cephalad. We advanced the needle until its tip reached nearby the bone surface, local anesthetics (15 ml of 0.25% ropivacaine per side) was dispensed on the surface of the SPS muscle (Fig. 1B). After 10 min rest, we evaluated the changes in numerical pain rating scale (NRS) before and after the procedure. We conducted bilaterally 30 procedures in 15 patients who had previously received blind trigger point injections (TPI) for lower cervical and scapular pain. All of them alleviated their symptom and preferred the SPS block to the TPI. Their reduced rate of NRS before and after procedure was 80% on average. In one patient, we examined cone beam X-ray CT imaging and confirmed that the mixture of local anesthetic agent and contrast medium was spread around the SPS muscle, and a part of it also extended toward more lateral side over the serratus anterior muscle under the rhomboid muscle (Fig. 1C).

SPS is a thin muscle, commonly arising from C7–T2 and inserting into the lateral of the ribs' angles of 2nd–5th. It is innervated from lower cervical and upper intercostal nerves [4]. We speculate that this procedure could block several nerves, not only the dorsal and lateral ramus of upper thoracic nerve but presumably dorsal scapular nerve (DSN). DSN runs between rhomboid muscles and SPS muscle around the upper angle of the scapular, its entrapment has been considered to affect the scapular pain [6]. SPS block is a kind of fascial block like serratus anterior muscle block. It has an advantage in terms of completing one injection per side, compared to conventional multiple TPI. Furthermore, this approach could be easier and safer than McCarthy's approach by targeting nearby the rib surface. We recommend this procedure for patients suffering from interscapular myofascial pain.

Conflicts of interest

None.

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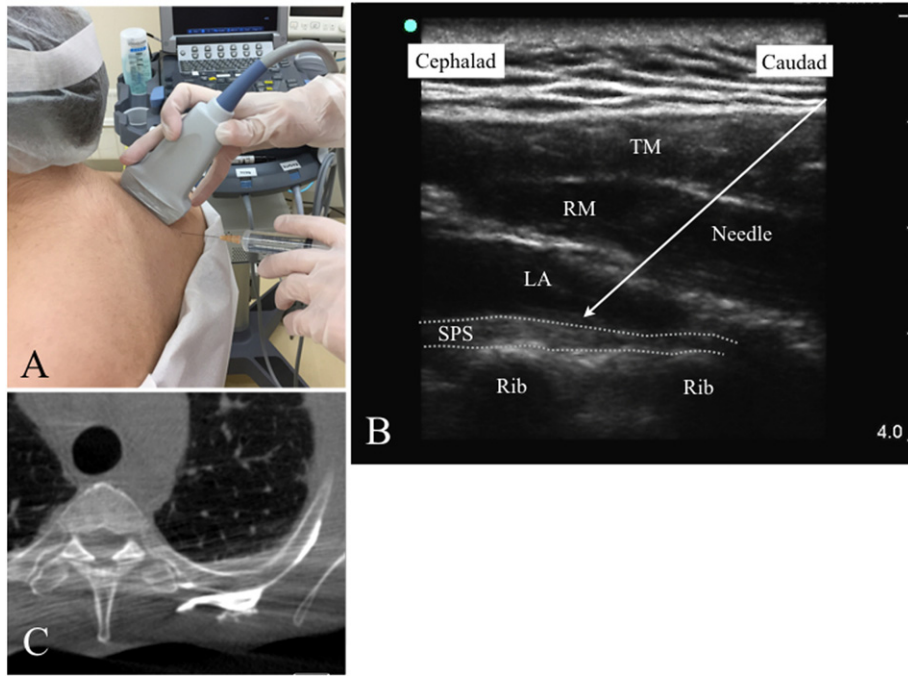


Fig. 1. (A) Probe setting and needle insertion at the medial margin of the scapula. (B) Ultrasound image of undertaking SPS block. The needle is advanced to the top of 2nd rib (white arrows) and the local anesthetic agent (LA) is spreading between rhomboid muscle (RM) and serratus posterior superior muscle (SPS). (C) Cross-sectional image of chest computed tomography scan after SPS block. The mixture of local anesthetic agent and contrast medium was confirmed over the SPS muscle and lateral side of the thorax.