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Are Deep Supraspinatus Muscle Plane Block and Suprascapular Nerve Block the Same Approaches?
A cadaveric nomenclature study

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- Letter to the Editor -

Dear Editor,

Interfascial plane blocks has become popular in daily anesthesia practice in the field of acute or chronic pain management [1]. Thanks to the use of ultrasound (US), novel plane blocks are defined with an increasing number. For this reason, to decrease the controversy of the name of the novel blocks and their novelties, ASRA-ESRA consensus published a nomenclature study [2]. Although the debates and discussions, new descriptions of novel techniques continue to be defined. One of the novel plane blocks, Deep Supraspinatus Muscle Plane Block (DSMPB), Köse et al [3] proposed DSMPB a safer and easier technique by depositing local anesthetic (LA) into the plane between the supraspinatus muscles (SM) and the posterior scapula. Recently, Teles et al. [4] called DSMPB a “new old technique” as the block was US verification of the indirect anatomical landmark-guided suprascapular nerve block (SNB). Contrary, Çiftçi et al. [5] contributed to the topic by emphasizing the different injection points of the blocks; the needle was inserted approximately 2.5 cm away from the suprascapular notch for a SNB while the insertion point of DSMPB was 4 cm away and likely to act with the principles of interfacial plane blocks. From this point, we decided to perform a cadaveric study to directly test whether the US-guided DSMPB and landmark-guided (US-verified) SNB will result in a similar coverage of anatomical areas or not.

This study was performed by obtaining ethical approval with decision number 715 by the Istanbul Medipol University Ethics and Research Committee. One fresh male human cadaver was obtained by Anatomy Department of Istanbul Medipol University. Cadaver was provided from the donation cadavers of the anatomy department of our university. As the study was approved from the
ethics committee of our university and all rights of the cadaver belongs to the anatomy department, no permissions were required for the use of cadaver in our study. All injections were performed by two investigators experienced in US-guided fascial plane blocks. The cadaver was placed in prone position and the back regions especially around scapula were fully inspected for anomalies. On the right side of the cadaver, US-guided (B-Braun, Philips, Xperius, USA) DSMPB was performed with a multifrequency 11–12 MHz linear probe covered with a protective plastic sheath. The probe was placed on the base of the spinae scapula in the transverse plane. The probe was slowly moved cranially to visualize trapezius and SM on the medial side of scapula. A 22G, 100 mm needle (Stimuplex® Ultra 360®, B-Braun, USA) was punctured from medial to lateral via in plane technique. The needle was inserted below the SM and contacted with supraspinous fossa. Twenty ml of 0.25% methylene blue dye was injected here. On the left side, landmark-guided SNB was performed. The scapula was separated into quadrants with a vertical line passing along the length of the scapular spine. The point in the upper outer quadrant, 2.5 cm lateral to the vertical line was targeted. In order to verify the injection point, the US probe was placed on the targeted point over the scapular spine. After visualizing the suprascapular notch, a 22G, 100 mm needle (Stimuplex® Ultra 360®, B-Braun, USA) was punctured via in plane technique. Twenty ml of 0.25% methylene blue dye was injected into here.

Anatomic dissections were performed by the same anatomists with a standardized method 20 minutes after the procedures. A midline skin incision was performed from the protuberantia occipitalis externa to the coccyx. Then, a second incision was made from acromion through the spinae scapula. After the incisions were combined, the skin was retracted laterally to demonstrate posterior thoracic wall and scapula. The trapezius was reflected from spinous processes and spinae scapula. Then, scapula, supraspinatus muscle and infraspinatus muscle were visualized. Supraspinatus and infraspinatus muscles were dissected from margo medialis of scapula and spinae scapula. On the left side (SNB) there were dye spread areas in the supraspinous fossa. There was minimal dye spread.

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around the shoulder joint capsule from the quadrangular space view. There was also methylene blue around the suprascapular nerve (Figure 1A). On the right side (DSMPB) there was dense dye spread in the supraspinous fossa (Figure 1B). There was methylene blue on both anterior and posterior side of SM. There was also dye spread on the spinae scapula. There was no methylene blue in the infraspinous fossa.

We agree with Teles et al [4] on the point that over the past few years, several novel nerve block approaches have been described resulting in a significant heterogeneity in the vast nomenclature. Recently, an ASRA-ESRA Delphi consensus study was conducted to harmonize and standardize the nomenclature and anatomical descriptions of the paraspinal, chest wall and abdominal wall blocks [2]. However, we believe that it would not be correct to describe DSMPB as a reinterpretation of the classical technique. Although SNB and DSMPB covered some common areas over the scapula, DSMPB provided a denser dye spread in the supraspinous fossa than SNB while SNB covered a larger area over both the supraspinous and the infraspinous fossa. According to these anatomic results of cadaveric evaluation, SNB may be used for either pain control after major surgeries that involves shoulder joint or chronic pain management. Additionally; DSMPB may be used for either chronic pain treatment or pain management after minor shoulder surgeries.
References


Figure 1A. Dissection of the suprascapular nerve block. (Black arrow indicates the suprascapular nerve. SS; spina scapulae)

Figure 1B. Dissection of the deep dupraspinatus muscle plane block. (SS; spina scapulae)