Kill two birds with one stone: Selective trunk block (SeTB) with single skin penetration

Boohwi Hong, MD PhD ¹,², Yumin Jo, MD ¹, Chahyun Oh, MD ¹

¹Department of Anesthesiology and Pain Medicine, Chungnam National University Hospital, College of Medicine, Chungnam National University, Daejeon, Korea

²Biomedical Research Institute, Chungnam National University Hospital, Daejeon, Korea

Address correspondence to:
Boohwi Hong, MD, PhD, Department of Anesthesiology and Pain Medicine, Chungnam National University Hospital 282 Munhwa-ro, Jung-gu, Daejeon 35015, Korea
Tel: 82-42-280-7840; Fax: 82-42-280-7968
Email: koho0127@gmail.com

Acknowledgements relating to this article
Assistance with the study: none declared.
Financial support and sponsorship: This work was supported by research funding from National Research Foundation of Korea (NRF- 2022R1C1C1007982) and Chungnam National University.
Presentation: none declared.
Conflicts of Interest: none declared.
To the Editor,

The selective trunk block (SeTB) introduced by Karmakar et al. [1] produces sensorimotor blockade of the entire upper extremity except for the medial aspect of the upper arm. Also, it is feasible for shoulder surgery, because SeTB can blockade suprascapular nerve before take-off from the superior trunk. Interestingly, contrary to its name, it can anesthetize the entire upper extremity 'non-selectively'. A recently published cadaver anatomic study provides us with valuable information about SeTB as a promising all-purpose brachial plexus block (BPB) technique for upper extremity surgery [2]. With the advancement of the ultrasound imaging resolution and with several pioneers in this field, we have been able to identify and treat each component of brachial plexus in a more detailed fashion, and now we can perform a more precise BPB such as superior trunk [3], intertruncal [4], and SeTB [2,5].

The original SeTB consisted of two-staged injections with separate skin punctures, respectively [5]. The first injection is performed at the interscalene groove, and the second at the supraclavicular fossa to block superior/middle trunks, and inferior trunk, respectively. We suggest a technical modification to the SeTB. We often get a corner pocket image of the plexus when performing supraclavicular approaches, keeping the lateral part of the linear probe (HFL50xp: 15–6 MHz, X-Porte, FUJIFILM SonoSite, Inc., Bothell, WA, USA) away from the clavicle (Fig 1A). This imaging technique has several advantages including improved cross-sectional visualization of the plexus, avoiding interference of trapezius muscle during needle manipulation. Furthermore, it provides us with the image of the suprascapular nerve in the image before it branches out of the superior trunk. A corner pocket injection, the second injection of SeTB, can be done using this image. In our institution, ten mL of local anesthetics (1:1 mixture of 0.75% ropivacaine and 1%
lidocaine) is usually used at the corner pocket injection. Then, without withdrawing the needle completely out of the skin, the medial part of the probe is rotated to the cephalad direction. Through this rotatory movement, the image for the first injection of ScTB can be acquired. Then the needle can be re-aligned with the probe (Fig 1B). At this interscalene level, an additional 10 to 15 mL of the local anesthetics is administered. Thus, the two-staged blockade can be done with single skin penetration.

Since the blockade is often performed while a patient is awake, a single skin penetration can reduce the patient's discomfort significantly. The ScTB presented by the original authors shows a more advanced BPB, and we think it is one of the monumental achievements in ultrasound-guided BPB.
References


Figure 1. A. Ultrasound image for the corner pocket injection. The image was acquired during the probe is tilted caudad and rotated so that the lateral part of the probe is away from the clavicle. The needle is targeting below the inferior trunk, the corner pocket of the supraclavicular fossa. B. Ultrasound image for the injection between the superior and middle trunk of the brachial plexus. The image was acquired during the medial part of the probe rotated to the cephalad direction while maintaining the lateral part in the same position as the needle penetration. The needle is targeting between the superior and middle trunk.
SA, subclavian artery; ST, superior trunk of the brachial plexus; MT, middle trunk of the brachial plexus.