Agri 2025;37(2):133–134
doi: 10.14744/agri.2023.23355

Anterior approach suprascapular nerve block in shoulder surgeries: Customary now!

Raghuraman M. Sethuraman

Department of Anesthesiology, Sree Balaji Medical College and Hospital, Chennai, India

To the Editor,

I read with great interest the recently published case report describing the combination of suprascapular nerve block (SSNB) performed through an anterior approach and axillary nerve block (ANB) for shoulder arthroplasty.[1] I wish to provide my insights on this topic.

The authors have concluded that despite this case demonstrating effective analgesia in shoulder arthroplasty using this combination of SSNB and ANB, further randomized controlled trials are required.[1] However, an in-depth analysis of many factors is necessary. First, we must note that a few studies applying the anterior approach of SSNB had already been published[2,3] before the submission of this case report to the journal. Subsequently, a few more studies were published while this case report was under consideration.[4–6] Notably, all these studies compared the anterior approach of SSNB with the interscalene block (ISB), which is considered the gold standard method of pain relief for shoulder surgeries. Furthermore, all these studies concluded that SSNB performed through an anterior (sub-omohyoid) approach is as effective as ISB, with better preservation of lung function.[2–6] Interestingly, another study comparing the combination of SSNB and ANB (shoulder block) performed through the anterior and posterior approaches, respectively, with ISB was also published before the submission of this case report.[7] Rhyner et al.[7] observed that the shoulder block produced a lesser impact on hemidiaphragmatic function and ventilation when compared to ISB, while opioid consumption was not significantly different.

The authors state that the anterior approach of SSNB was painless in contrast to the conventional posterior approach. However, this is incorrect, as both methods do not differ in that aspect. Other factors must be considered. While the anterior approach of SSNB can be performed in the supine position, the posterior approach requires a sitting, prone, or lateral decubitus position. It is technically more difficult to perform SSNB using the posterior approach. Additionally, the quality of the block would be better in the anterior approach, as the nerve is blocked at the proximal level before it divides into branches. A study also observed that the anterior approach resulted in better pain relief than the posterior approach.[4]

Regarding ANB, the authors did not explain how they performed this technique. Notably, the posterior approach of this block requires a sitting, prone, or lateral decubitus position, similar to the posterior approach of SSNB. Alternatively, ANB can also be performed through the anterior approach. The "subscapularis plane block" is administered with the patient in a supine or semirecumbent position, with the arm adducted and externally rotated. This block covers not only the axillary nerve but also the subscapularis nerve.[8] A cadaveric study has shown that ANB can be performed through an anterior approach in the axillary fossa. This approach requires abduction of the arm to 90 degrees.[9] Notably, while the suprascapular nerve supplies the majority of the shoulder, the axillary nerve is the second major contributor, with the subscapular and lateral pectoral nerves also playing a role.[8] Hence, the combination

Submitted: 04.08.2023 **Accepted:** 05.09.2023 **Available online:** 10.04.2025

Correspondence: Dr. Raghuraman M. Sethuraman. Department of Anesthesiology, Sree Balaji Medical College and Hospital, Chennai, India.
Phone: +91-6379141854 **e-mail:** raghuraman.anaesth@bharathuniv.ac.in / drraghuram70@gmail.com

of other block(s) with SSNB (anterior approach) can be considered if comprehensive sensory coverage or surgical anesthesia is required. The "subscapularis plane block"[8] is a better option for this purpose.

Recently, the erector spinae plane block (ESPB) has been evolving as an alternative technique for providing pain relief in shoulder arthroscopic procedures.[10,11] ESPB resulted in better analgesia than a sham block in one study,[10] while ISB was more effective than ESPB in another study.[11]

To conclude, many studies are available on the anterior/subomohyoid approach of SSNB, and it is widely applied in clinical practice. Therefore, studies comparing it (either alone or in combination with the anterior approach of ANB) with a newer technique such as ESPB can be considered research gaps, thus requiring further investigation.

Conflict-of-interest issues regarding the authorship or article: None declared.

Use of AI for Writing Assistance: No artificial intelligence was used.

Peer-rewiew: Externally peer-reviewed.

References

1. Yörükoğlu HU, Gürkan Y, Aksu C. Anterior approach to suprascapular nerve block combined with axillary nerve block for shoulder arthroplasty. Agri 2023;35:175-6.
2. Wiegel M, Moriggl B, Schwarzkopf P, Petroff D, Reske AW. Anterior suprascapular nerve block versus interscalene brachial plexus block for shoulder surgery in the outpatient setting: A randomized controlled patient- and assessor-blinded trial. Reg Anesth Pain Med 2017;42:310-8. [CrossRef]
3. Auyong DB, Hanson NA, Joseph RS, Schmidt BE, Slee AE, Yuan SC. Comparison of anterior suprascapular, supraclavicular, and interscalene nerve block approaches for major outpatient arthroscopic shoulder surgery: A randomized, double-blind, noninferiority trial. Anesthesiology 2018;129:47-57. [CrossRef]
4. Lim YC, Koo ZK, Ho VW, Chang SS, Manohara S, Tong QJ. Randomized, controlled trial comparing respiratory and analgesic effects of interscalene, anterior suprascapular, and posterior suprascapular nerve blocks for arthroscopic shoulder surgery. Korean J Anesthesiol 2020;73:408-16. [CrossRef]
5. Abdallah FW, Wijeysundera DN, Laupacis A, Brull R, Mocon A, Hussain N, et al. Subomohyoid anterior suprascapular block versus interscalene block for arthroscopic shoulder surgery: A multicenter randomized trial. Anesthesiology 2020;132:839-53. Erratum in: Anesthesiology 2020;132:1619. [CrossRef]
6. Petroff D, Wiegel M, Pech V, Salz P, Mrongowius J, Reske AW. Differential lung ventilation assessed by electrical impedance tomography in ultrasound-guided anterior suprascapular nerve block vs. interscalene brachial plexus block: A patient and assessor-blind, randomised controlled trial. Eur J Anaesthesiol 2020;37:1105-14. [CrossRef]
7. Rhyner P, Kirkham K, Hirotsu C, Farron A, Albrecht E. A randomised controlled trial of shoulder block vs. interscalene brachial plexus block for ventilatory function after shoulder arthroscopy. Anaesthesia 2020;75:493-8. [CrossRef]
8. Sondekoppam RV, Lopera-Velasquez LM, Naik L, Ganapathy S. Subscapularis and sub-omohyoid plane blocks: An alternative to peripheral nerve blocks for shoulder analgesia. Br J Anaesth 2016;117:831-2. [CrossRef]
9. Feigl G, Aichner E, Mattersberger C, Zahn PK, Avila Gonzalez C, Litz R. Ultrasound-guided anterior approach to the axillary and intercostobrachial nerves in the axillary fossa: An anatomical investigation. Br J Anaesth 2018;121:883-9. [CrossRef]
10. Ciftci B, Ekinci M, Gölboyu BE, Kapukaya F, Atalay YO, Kuyucu E, et al. High thoracic erector spinae plane block for arthroscopic shoulder surgery: A randomized prospective double-blind study. Pain Med 2021;22:776-83. [CrossRef]
11. Kapukaya F, Ekinci M, Ciftci B, Atalay YO, Gölboyu BE, Kuyucu E, et al. Erector spinae plane block vs interscalene brachial plexus block for postoperative analgesia management in patients who underwent shoulder arthroscopy. BMC Anesthesiol 2022;22:142. [CrossRef]