vicular fossa) than with the posterior approach (suprascapular notch) [4]. Similarly, Petroff et al. [5] also observed a significant reduction of percentage lung ventilation assessed with electrical impedance tomography in the interscalene block group when compared to the anterior SSN block group. In addition, contrary to the author's fears [1], the upper limb would not likely be paralyzed with this approach because the volume is low and would not spread to the brachial plexus although the median distance to the plexus is 9 mm, as per the referenced study (Ref #4 of the technical report [1]). Furthermore, the referenced study was published in 2012, and many subsequent clinical studies, including the two cited above [4,5], have made no observation of this complication. Hence, the sub-omohyoid approach of the SSN block that provides complete coverage of the SSN might be a better option in shoulder surgeries, as the SSN provides most (70%) of the sensory supply.

Finally, I am not convinced that the technique described in this report is indeed novel [1], as the concept and approach are similar to that described by Tran et al. [2]; only the nomenclature of "DiSC" [1] has been changed from the "anteromedial" approach used in that cadaveric study [2].

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Response to "Comment on The novel diagonal suprascapular canal block for shoulder surgery analgesia: a comprehensive technical report"

Thank you for the insightful comments made by Almeida [1] on our previous article. The Diagonal Suprascapular Canal (DiSC) block has been described as a novel individualized anterior suprascapular nerve (SSN) block [1]. This tailored block is performed from a completely novel anterior entry point in the supine position. It is a step-forward block that allows the SSN to be blocked proximally at the level of the suprascapular notch, at the emergence of the medial and lateral trunk (midpoint of the suprascapular canal [SSC]), or even laterally at the level of the spinoglenoid notch. Anatomical variations in the divisions of the SSN should be considered whenever the block is performed distally (laterally [distally]) in the SSC. However, in most cases, the target of the DiSC block in the perioperative setting is the entry of the SSC. The block may also be administered at the SSC midpoint (or laterally/posteriorly) in specific cases such as isolated infraspinatus tendon rupture or infraspinatus fracture [1].

Siegenthaler et al. [2] evaluated the spread of local anesthetics after performing a supraclavicular SSN block using a sub-omohyoid approach. To the best of my knowledge, this is the only study of local anesthetic spread using the sub-omohyoid SSN block. The authors concluded that as the proximity of the SSN to both thebrachial plexus in the sub-omohyoid region and to the pleura need to be critically considered, the sub-omohyoid approach should be regarded as an alternative to rather than a replacement for the classic posterior approach.

Further clinical studies, despite not observing the local anesthetic spread, have compared the sub-omohyoid SSN block with the interscalene nerve block or posterior SSN approach [3,4]. The sub-omohyoid SSN block results in a diminished forced vital capacity compared to baseline, though the impact is lower than with the interscalene block [4]. In contrast, another clinical study showed that in comparison to the posterior SSN block, the sub-omohyoid SSN

block provides an additional block of the axillary nerve, suggesting that for the sub-omohyoid approach, the local anesthetic may reach at least the superior or intermediate trunk or the posterior division of the brachial plexus, which confirms the results reported by Siegenthaler et al. [2].

Concerns regarding the novelty of the DiSC block are disconcerting. The DiSC block is a novel, potentially safer and simpler anterior approach that involves a diagonal view of the SSC through which the SSN travels [1]. The approach proposed by Tran et al. [5] cannot be performed using an anterior approach because the clavicle conflicts with the ultrasound beam, preventing correct visualization of the SSC during the puncture; thus, the needle is inserted at a posterior entry point in the anterior medial direction using ultrasound visualization that is completely different from that with the DiSC block.

To date, the sub-omohyoid SSN block has either been referred to as an anterior or supraclavicular SSN block. Given the introduction of this novel anterior approach, the term "anterior SSN block" cannot be used as a synonym for the sub-omohyoid SSN. Although anterior SSN block approaches have clear advantages, the sub-omohyoid SSN block is a less selective "anterior SSN block" than the DiSC block [3,4] and may be riskier. Therefore, although the sub-omohyoid SSN block may be the first option in most patients, it must be avoided in high-risk respiratory patients [3]. In conclusion the diagonal suprascapular block is a simple, more selective in some scenarios and a safer anterior SSN block.

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Lipophilicity of drugs, including local anesthetics, and its association with lipid emulsion resuscitation

Local anesthetics are commonly used to provide pain relief during the peri-operative period. However, there is a risk of local anesthetic systemic toxicity (LAST) when these anesthetics are accidentally injected into the bloodstream or administered in excessive amounts. This can lead to cardiovascular depression and central nervous system symptoms, such as seizures. Currently, a treatment approach for LAST involves the use of lipid emulsion [1]. Lipid emulsion has also shown effectiveness in mitigating the cardiovascular depression caused by a toxic dose of non-local anesthetic drugs that have high lipid solubility [1]. The underlying mechanism associated with the use of lipid emulsion for treating drug toxicity is known as the 'lipid shuttle' [1]. This concept suggests that the lipid and surfactant components of the emulsion interact with drugs with high lipid solubility (defined by a log P value greater than 2) [1]. Subsequently, the lipid emulsion containing these lipid-soluble drugs, such as bupivacaine, is transported to the liver, muscle, and adipose tissue for detoxification and storage [1]. Furthermore, lipid emulsion can also alleviate severe vasodilation induced by a toxic dose of aminoamide local anesthetics, and the extent of this effect is dependent on the lipid solubility of the specific local anesthetic used (with bupivacaine having a higher log P value than ropivacaine and mepivacaine) [2]. Currently, the log P (or log $P_{o/w}$) value is widely used to indicate the lipophilicity of drugs, such as local anesthetics (log P [PubChem] values: bupivacaine = 3.41; ropivacaine = 2.9; lidocaine = 2.44; and mepivacaine = 1.95). Moreover, the octanol/water (o/w) partition coefficient is only a surrogate indicator regarding lipophilicity of drugs including local anesthetics that may be used as one of several factors to predict whether intractable cardiovascular collapse induced by a toxic dose of a drug