Comment on Published Article

Pre-injection technique to identify neural elements in the costoclavicular space for brachial plexus block: Where and what to inject?

Sir,

We read with interest the captioned letter "Use of a pre-injection technique to identify neural elements in the costoclavicular space for brachial plexus block for upper limb orthopaedic surgery".[1] We appreciate the authors' idea of a pre-injection technique to identify the neural elements in the costoclavicular space (CCS), but have few suggestions.

The authors have chosen the supraclavicular fossa as their pre-injection site and administered 3 ml of local anaesthetic (LA) with the assumption that it would reach the CCS. However, one should keep in mind that even a small LA volume of 5 ml at the supraclavicular fossa may be associated with hemidiaphragmatic paralysis (HDP).[2] Therefore, we rather recommend a hydro-dissection technique using 0.9% saline at the CCS. In this method, as the needle passes the subclavius muscle and approaches the brachial plexus sheath (paraneural sheath),[3] small aliquots of 1-2 ml of 0.9% saline will be injected [Figure 1a] to appreciate if the injection is intramuscular or just outside the epimysium of the subclavius muscle/ paraneural sheath. Once confirmed, the block needle is gently advanced into the paraneural sheath between the lateral and posterior cords [Figure 1b] and a second injection of saline will now separate the tightly clustered cords. This helps to delineate the neural components.

This hydro-dissection technique is simple, effective, carries no additional risks for HDP and does not require two separate injections. Hence, we recommend it over the pre-injection technique described by the authors at the supraclavicular fossa for identifying the neural elements in the CCS.

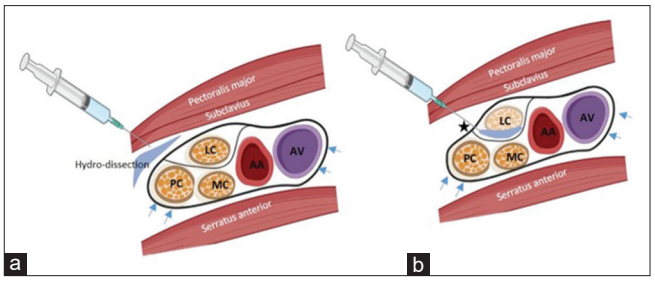

Figure 1: (a) Schematic diagram demonstrating hydro-dissection technique with needle tip just outside the subclavius muscle and the brachial plexus sheath at the costoclavicular space (CCS); (b) Schematic diagram demonstrating block needle inside the brachial plexus sheath at the gap/fissure between the lateral and posterior cord of the brachial plexus sheath at the CCS. AA: Axillary artery (1st part); AV: Axillary vein; LC: Lateral cord; MC: Medial cord; PC: Posterior cord; Blue coloured arrows demonstrating the brachial plexus or paraneural sheath around the cords of the brachial plexus at the CCS. Black star (*) demonstrating the gap/fissure between the lateral and posterior cord of the brachial plexus after the saline hydro-dissection technique

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Conflicts of interest

There are no conflicts of interest.

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