Superior Trunk block for humerus surgery: Application beyond the shoulder analgesia

Sir,

Ultrasound-guided superior trunk block (STB) has been described for anesthesia and/or analgesia in shoulder and clavicle surgeries.[1-3] Recently, Kang *et al*. concluded that STB offers non inferior analgesia and less hemi diaphragmatic paresis as compared to interscalene brachial plexus block in arthroscopic shoulder surgery.[4] We hereby describe a novel application of STB for the surgery of humeral shaft fracture.

A 72-year-old male patient was scheduled for open reduction and internal fixation with plating of a displaced fracture of mid-shaft of the left humerus. After obtaining informed and written consent, ultrasound-guided left sided STB was performed with a 22-gauge, 50 mm needle using an out-of-plane technique and 5 ml of 0.75% ropivacaine was injected [Figure 1]. Within 10 min of local anesthetic (LA) deposition, the patient had lost cold sensation in the required dermatome. Distal upper limb motor functions were intact and clinical signs of respiratory distress were not encountered. The surgery was performed in the supine position, and the procedure lasted for 1 h. Intravenous paracetamol 1 gm, dexamethasone 8 mg, and ketorolac 30 mg were used as a part of multimodal analgesia. Intravenous dexmedetomidine infusion (0.5 mcg/kg/hour) was used for conscious sedation during the surgery. Oxygen by facemask was delivered at the rate of 3 lit/min. The patient was calm and comfortable throughout the surgery. Sonographic assessment of diaphragmatic movements revealed no ipsilateral hemi-diaphragmatic paresis. The patient was monitored for an hour in the recovery room and then transferred to the ward.

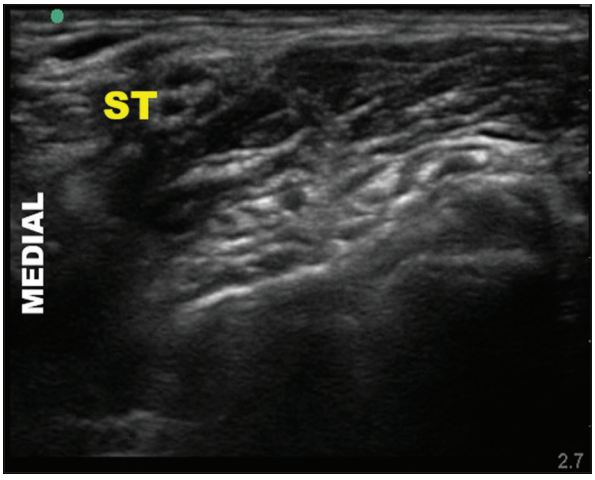

Figure 1: Ultrasonographic image of the superior trunk after local anesthetic injection; ST, superior trunk

His Numeric rating scale score was less than 3/10 till 18 hours. His postoperative course was uneventful.

The reason for choosing STB is that at this location, the trunks and divisions are densely packed, which can reduce local anesthetic (LA) volume/dose and thus lessens the chances of phrenic nerve palsy. Kang *et al*. observed hemi diaphragmatic palsy in 29% cases with 15 ml of 0.5% ropivacaine and in a cadaveric dye injection study there was no involvement of phrenic nerve with 5 mL of injectate fluid.[4,5] With this idea, we used only 5 ml of local anesthetic (LA) without any untoward effects. A randomized controlled trial on larger population would be required to find out the incidence of phrenic nerve involvement with low volume STB, and to establish its efficacy and safety over other described techniques in humerus surgeries.

To conclude, ultrasound-guided single-shot STB with low volume of LA can provide reliable anesthesia for the surgery of humeral shaft fracture.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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