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.

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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Conflicts of interest

There are no conflicts of interest.

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Sphenopalatine ganglion block for abortive treatment of a migraine headache

A migraine headache is defined by the International Classification of Headache Disorders 3 criteria (ICHD-3) as a recurrent, debilitating primary headache disorder lasting 4-72 hours that impacts or is aggravated by daily activities. It has significant morbidity and can be debilitating. It is usually a pulsatile headache that can present with or without prodromal symptoms (“aura”) and usually extends into a period of recuperation with resolution symptoms. It is further defined as episodic or chronic based on the frequency of attacks.

[1] Migraine headaches are a global healthcare burden with about 1.04 billion suffering from migraine headaches around the world, making this the sixth most common disease worldwide.

[2] It is also the subject of ongoing research. The pathophysiology is only partially understood and new treatments are still being tested.

The current treatments for migraine headaches are divided into abortive treatment of acute migraine headache, and prophylaxis aimed at decreasing headache frequency. Acute headaches are usually treated with non-steroidal anti-inflammatory (NSAID) medications and second line treatments such as triptans (sumatriptan, ergotriptan). However, triptans are powerful vasoconstrictors with some risks and side effects. These medications are contra-indicated in patients with concurrent coronary artery disease, pregnancy and lactation. More recently, interventional techniques have emerged in hard-to-treat cases. Two recent studies examined the application of a sphenopalatine ganglion (SPG) block with local anesthetics for migraine abortion. A 2015 randomized control trial evaluated patients with chronic migraine (CM) with six weeks (12 treatments) of SPG block with bupivacaine and found that patients had a significant reduction in pain up to 24 hours after each treatment.

[3] Another recent series of cases reported similar results with lidocaine.

[4] Here, we report a case of a 45-year-old man with recurrent episodic migraine headaches presenting with an acute and debilitating migraine attack lasting two days that was not relieved with NSAIDs nor triptans. Having failed to respond to conventional management, an interventional approach was selected and the patient was treated with a trans-nasal SPG block with 0.25% bupivacaine. The block was performed using a 3 mL syringe attached to a 20-gauge IV catheter. The patient was asked to extend his neck during the procedure and roughly 0.5–1 mL of bupivacaine was quickly injected into each nostril. The procedure was tolerated well and no adverse effects were experienced. The patient experienced complete resolution of symptoms after 30 minutes of local anesthetic instillation and had no recurrence of symptoms noted several days later.