Ultrasound-guided interscalene block in a patient with halo brace

Sir,

Ultrasound imaging has opened a Pandora’s box of possibilities as now the anesthetist can visualize and identify nerves and blood vessels as well as the needle during its passage through the tissues.[1] In addition, direct visualization of the spread of local anesthetic decreases the risk of intravascular injection, potential local anesthetic toxicity, pneumothorax, and a failed blockade.[2]

Here, we discuss a successful management of a patient of head injury with cervical fracture stabilized in a halo brace posted for humerus fixation. This case represents only the first case of ultrasound-guided interscalene block in a patient of halo brace in literature even though supraclavicular block has been reported earlier.[3]

The patient in this case, aged 45 years, was a roadside accident victim having sustained head injury with open humeral shaft fractures. Computed tomography head revealed frontal brain contusion and further revealed an unstable fracture of second cervical vertebra [Figure 1]. Her C2 fracture was stabilized in a halo brace by the neurosurgeon under local anesthesia. She was subsequently posted in emergency room for open reduction and internal fixation of humerus with plate and screw. Preanesthetic evaluation revealed a heavily built 85 kg female with Glasgow coma scale 15/15. She had associated type 2 diabetes mellitus and hypertension which were controlled on medical management. Airway could not be assessed properly due to the halo brace, and her mouth opening was only one finger breadth. Routine biochemistry investigations were within normal limits. The main aim of management of this particular case was to provide safe anesthesia with minimal interference of the cervical fixation. The choice of anesthesia in this scenario was discussed with the patient and ultrasound-guided regional block was offered to her for which she consented. Due to the nonavailability of fiberoptic bronchoscope at our institute, she was accepted for regional block in the American Society of Anesthesiologists grade 2 as the patient refused to go to a higher center.

The procedure was explained to the patient and an informed consent was obtained. The difficult intubation trolley was kept on standby in case of any adverse outcome or incomplete block. On arrival to operation theater, standard monitoring 5-lead electrocardiography, noninvasive blood pressure, and SpO2 was attached along with starting of peripheral intravenous (I.V.) line with normal saline in contralateral hand. Baseline pulse rate, blood pressure, respiratory rate, and SpO2 were noted. The patient was positioned head up with the brace with the arm to be operated placed by the side. Ultrasound-guided interscalene block was planned, however the access and manipulation of the neck was severely hindered due to the brace. The neck area was cleaned with 2% chlorhexidine and draped. The ultrasound probe (SonoSite MicroMaxx) of frequency 8–12 Hz was positioned under sterile conditions lateral to the level of cricoid cartilage. The probe had to be manipulated with great difficulty to locate the brachial plexus [Figure 2]. The cervical roots (traffic light sign) could be visualized lateral to the carotid artery and internal jugular vein sandwiched between anterior and middle scaleni. The patient received...
Letters to Editor

10 ml lignocaine 2% and 10 ml bupivacaine 0.5% with 300 µg magnesium sulfate preservative free as an adjunct. After obtaining a successful block, surgery was allowed to proceed. The patient was sedated with injection midazolam 1 mg I.V., and supplemental oxygen was given through nasal prongs. Intraoperative period was uneventful. The surgery lasted for 150 min, and the patient was comfortable throughout the surgery. The patient remained pain free for 8 h postoperatively.

A case of unstable cervical spine fracture provides a daunting task to the anesthetist as it presents various challenges to provide safe anesthesia with minimal movement at the cervical spine. There have been a number of case reports on the management of patients immobilized in a halo frame for different surgeries under general anesthesia with conventional endotracheal tube or other airway devices. The halo device presents a number of challenges to the anesthetist, namely, accessibility to the airway, positioning, and limited mouth opening as was seen in our case.

Ultrasound guidance has made interscalene approach so safe that, in experienced hands, this may be the block of choice for most upper extremity surgeries. However, the possibility of block failure and potential complications such as unilateral phrenic nerve palsy mandated fiberoptic bronchoscope to be kept on standby. In this particular case, ultrasound proved to be a blessing, and frankly speaking “ultrasound saved the day.”

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

JAI SINGH, VERSHA VERMA, AMAN THAKUR, PRIYANKA SOOD
Department of Anesthesia, Dr. Rajendra Prasad Government Medical College, Kangra, Himachal Pradesh, India

Address for correspondence:
Dr. Aman Thakur,
Department of Anesthesia, Dr. Rajendra Prasad Government Medical College, Tanda, Kangra - 176 001, Himachal Pradesh, India.
E-mail: aman.zander@gmail.com

References

1. Gray AT. Ultrasound-guided regional anesthesia: Current state of the art. Anesthesiology 2006;104:368-73.
2. Marhofer P, Greher M, Kapral S. Ultrasound guidance in regional anaesthesia. Br J Anaesth 2005;94:7-17.
3. Delvi MB. Ultrasound-guided supraclavicular brachial plexus block in patient with halo device. Saudi J Anaesth 2010;4:20-2.
4. Crosby ET. Airway management in adults after cervical spine trauma. Anesthesiology 2006;104:1293-318.
5. Sims CA, Berger DL. Airway risk in hospitalized trauma patients with cervical injuries requiring halo fixation. Ann Surg 2002;235:280-4.
6. Bhardwaj N, Yaddanapudi S, Makkar S. Retrograde tracheal intubation in a patient with a halo traction device. Anesth Analg 2006;103:1628-9.

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

Access this article online

Website: www.saudija.org

DOI: 10.4103/sja.SJA_276_17

How to cite this article: Singh J, Verma V, Thakur A, Sood P. Ultrasound-guided interscalene block in a patient with halo brace. Saudi J Anaesth 2018;12:152-3.

© 2018 Saudi Journal of Anesthesia | Published by Wolters Kluwer - Medknow