

Bilateral internal laryngeal nerve block and lignocaine nebulisation after tracheobronchial foreign body removal to prevent airway spasm in a child-A case study

Dear Editor,

Foreign body (FB) aspiration in the airway is common in young children (age <3 years).^[1] Emergent rigid bronchoscopy-assisted removal of FB is generally associated with airway spasms, which can result in life-threatening hypoxia and hypercarbia. In this case report, an ultrasound-guided bilateral internal laryngeal nerve (iSLN) block was given after lignocaine nebulisation in a 1-year-old female child weighing 7.8 kg for prevention of postoperative

cough and spasm following the removal of a foreign body from the right main bronchus. Written and informed consent for publication was taken from the parent. Anaesthesia was induced with an intravenous fentanyl 2 µg/kg, propofol 2 mg/kg, and atracurium 0.5 mg/kg. Anaesthesia was maintained with oxygen and sevoflurane with a target minimum alveolar concentration of 1. A foreign body (torch LED bulb) was retrieved using a rigid bronchoscope under general anaesthesia. At the end of the procedure, the patient started desaturating despite bag and mask ventilation with 100% oxygen. The patient's trachea was intubated with a 4.5 mm endotracheal tube (ETT). Considering airway spasms, ultrasound-guided (US machine M-Turbo, Fujifilm Sonosite, Inc, Bothell, WA, USA) bilateral iSLN block was performed. Under aseptic precautions, a high-frequency (6–13 MHz) ultrasound linear probe (footprint size 4 cm) was placed longitudinally over the submandibular area, and a 24 G one-inch needle was inserted via an out-of-plane approach

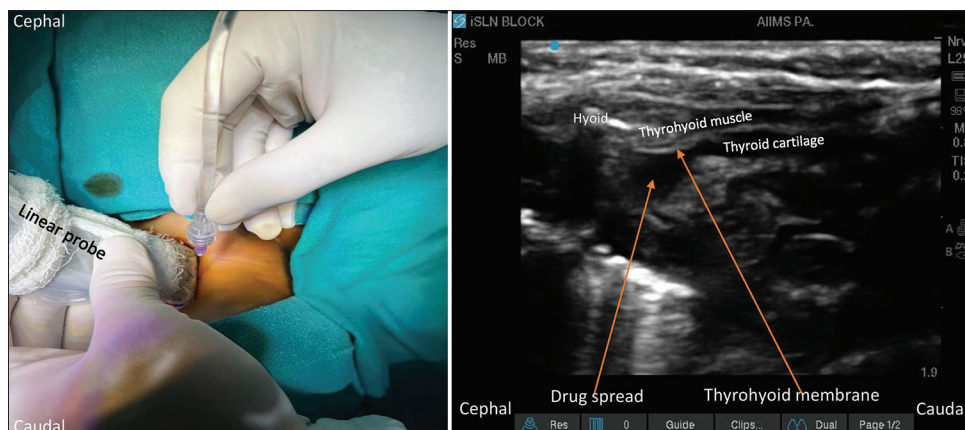


Figure 1: Ultrasound-guided internal laryngeal nerve block using out-plane technique

between the greater horn of the hyoid bone and the thyroid cartilage [Figure 1]. After piercing the thyrohyoid membrane, the drug (2% lignocaine of volume 0.5 ml on each side) was injected in a space bounded by the thyrohyoid membrane laterally and the laryngeal mucosa medially. The patient's airway was also nebulised with 2 ml of 2% lignocaine with adrenaline solution through an in-line technique. After completion of nebulisation, the trachea was extubated after proper suctioning. The patient was assessed for cough severity during emergence before extubation (bucking on the ETT) and also at 1 min, 5 min, 10 min, 30 min, 1 hour, and 4 hours after extubation using a modified Minogue scale (Grade 1: No coughing, Grade 2: mild cough, Grade 3: moderate cough, Grade 4: severe cough).^[2] No coughing (grade 0) was noted at the above time intervals. Our patient was cough-free for 24 hours, with a postoperative cough score 0.

Traditionally, intravenous steroids and β -2 agonist sprays have been used for the treatment of spasms and airway oedema. iSLN block has been used to suppress laryngeal reflex during intubation or extubation and to provide sensory analgesia during biopsy of the supraglottic mass,^[3,4] whereas preoperative local anaesthetic nebulisation has been used for the attenuation of pressor response during laryngoscopy and tracheal intubation.^[5] In our case, bilateral iSLN block resulted in sensory blockade of laryngeal mucosa above the vocal cord. In contrast, nebulisation with local anaesthetic in intubated patients resulted in sensory blockade of airway mucosa distal to glottis, thus leading to a decrease in cough reflex after tracheobronchial foreign body removal.

Declaration of patient consent

The authors certify that they have obtained all appropriate consent forms. In the form, the child's parents consented to her images and other clinical information to be reported in the journal. The parents understand that her name and initials will not be published and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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