

Hypoglossal nerve injury - another rare cause for a common problem

Sir,

A 50-year-old male was scheduled for bilateral modified radical neck node dissection (MRND). He had undergone wide local excision for carcinoma of hard palate nine months back. He was obese (body mass index 36 kg/m²) with a history of snoring. There was no history suggestive of obstructive sleep apnoea. Airway examination revealed adequate neck movements, thyromental distance 6 cm, mouth opening 2 cm and a Modified Mallampati grade 4. Inside the theatre, after attaching electrocardiogram, pulse oximetry and non-invasive blood pressure monitor, the patient was induced with intravenous glycopyrrolate, fentanyl and propofol. Vecuronium was administered after confirming adequate ventilation. As the Cormack–Lehane grade was 3, oral intubation with a 8.0mm flexometallic tube was done with optimal external laryngeal manoeuvre.

Bilateral levels 1 to 5 neck node removal was done. Intraoperatively, dexamethasone, paracetamol, ondansetron, vecuronium and fentanyl boluses were given. Anaesthesia was maintained with oxygen, air and sevoflurane. Patient was reversed with neostigmine and glycopyrrolate and extubated after he regained consciousness and good hand grip. Post-extubation, he developed obstructed breathing and desaturation. Placement of a nasopharyngeal airway (NPA) was not helpful. The saturation improved after giving jaw thrust and continuous positive airway pressure. But on releasing the jaw thrust, obstructed breathing and desaturation reappeared. Adequate oral suctioning was done. There was no neck haematoma. On careful examination, we found that the patient was not able to protrude the tongue and had slurring of speech. But he was awake, obeying verbal commands with no neurological deficit clinically. He was placed in left lateral position with NPA in-situ which relieved his obstruction. After discussing with the surgeon, bilateral hypoglossal nerve injury (HNI) was suspected. Patient was kept in lateral position with NPA and oxygen supplementation in the postoperative ward. Next day also, patient had slurring of speech, inability to protrude the tongue

and difficulty in swallowing. He had also developed signs of aspiration. Hence, after obtaining consent, tracheostomy was done under local anaesthesia.

Common causes of postoperative airway obstruction are incomplete neuromuscular recovery, laryngospasm, bleeding or foreign body in the airway, obstructive sleep apnoea and laryngeal oedema.^[1-3] Among the surgical factors, otolaryngologic, head and neck surgeries are more commonly associated with postoperative obstructed breathing because of bleeding into the airway, haematoma, airway oedema or nerve injuries.^[1,4]

Our patient developed airway obstruction post-extubation. He was conscious with adequate neuromuscular recovery on clinical examination. Also, there were no airway secretions or external neck swelling. Our initial diagnosis was 'tongue fall' as the patient was obese. Hence, we placed a NPA which did not help. But the patient was fully awake with inability to put out the tongue and inability to speak. Hence, other causes like paradoxical vocal cord movement, vocal cord paralysis and laryngeal oedema appeared unlikely, and we suspected HNI after surgical consultation.

Unilateral HNI is often unnoticed due to unremarkable symptoms. With bilateral HNI, serious clinical symptoms like airway obstruction due to tongue root depression, stuttering and deglutition disorder appear.^[5] HNI can occur due to excessive endotracheal tube cuff pressure or supraglottic airway cuff volume.^[4] There are reports of HNI after surgery like carotid endarterectomy and atlanto-axial fixation. A case of bilateral HNI following radical neck node dissection causing obstructed breathing and necessitating reintubation has been reported.^[5] HNI after MRND is a rare complication. Accidental HNI can occur due to inadvertent clamping during bleeding of the venous plexus along the posterior belly of digastric muscle or due to dissection through the fascia of the floor of submandibular triangle where the hypoglossal nerve is situated.^[6] Our patient had bilateral level 2 node secondaries in the neck which was close to the internal jugular vein (IJV) and infiltrating it. During level 2 nodal dissection, even though bilateral IJV was

salvaged, inadvertent HNI could have resulted due to its anatomic proximity to the IJV. Hence, knowledge about the rare causes of obstructed breathing and its clinical signs are imperative.

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 identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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