Retromolar intubation for severe trismus: a less invasive alternative to tracheostomy and submental intubation

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DESCRIPTION

A 67-year-old woman with renal cell cancer metastatic to the paranasal sinuses presented for nasal endoscopy and palliative debridement. The extensive sinonasal mass was a contraindication to transnasal intubation. Tumour invasion into the lateral and medial pterygoid muscles as well as prior palliative sinus radiotherapy resulted in severe trismus with 5 mm interincisor distance—too small to accommodate an endotracheal tube (figure 1). Debridement was delayed for a year in the hope that jaw physical therapy would increase mouth opening and allow for oral intubation—intubation was deemed necessary due to the vascularity of the metastases. After a year, mouth opening remained restricted and awake tracheostomy was planned.

The anaesthesia team noticed the patient's facial skin was malleable. Skin retraction at the left angle of the mouth revealed a retromolar space large enough to fit an endotracheal tube. Tracheostomy was not anticipated to be difficult. The neck was long and supple. Laryngeal cartilage and sternal notch were visible. Cricoid cartilage was palpable. A plan was made for fibreoptic intubation through the retromolar space with tracheostomy backup. The otolaryngologist injected 10 mL of 1% lidocaine containing 10 μg/mL epinephrine into the anterior neck. Then, under dexmedetomidine sedation at 0.8 μg/kg/hour, the airway was anaesthetised with 5 mL of 4% nebulised lidocaine, 1 inch of 5% lidocaine ointment to the posterior tongue and 3 mL of 4% lidocaine via transtracheal block. A 6.5 mm inner diameter flex-tip endotracheal tube was inserted behind the left maxillary molar. A 5.5 mm diameter flexible video endoscope guided the endotracheal tube into the pharynx and past the vocal cords (figure 2). Surgery was uneventful, blood loss was 100 mL and there were no problems with endotracheal tube compression or kinking. The patient was extubated awake and discharged home the next day.

One in four patients with head and neck cancer acquires trismus.[1] Tracheal intubation is often required for these patients due to the risk for airway bleeding. Trismus makes bag mask ventilation more difficult and severe trismus precludes

Figure 1 Measurement of interincisor distance with maximal mouth opening.

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Figure 2 Retraction of skin at the angle of the mouth to reveal endotracheal tube position in the left retromolar space.

oropharyngeal and laryngeal mask airway insertion. Standard practice for patients with severe trismus and contraindication to nasal intubation is to perform a submental intubation or an awake tracheostomy. These procedures are invasive and associated with a higher rate of infection, bleeding, fistula formation, tracheal injury, voice change and cosmetic deformity, compared with oral intubation.[2 3]

The retromolar space is present in all individuals. It can be visualised by retracting the skin at the angle of mouth. The retromolar space is bound posteriorly by the ascending ramus of the mandible, superiorly by the maxillary tuberosity and anteriorly by the back molars.[4] While there are reports of 'retromolar intubations,' most descriptions are actually standard intubations with intraoperative shifting of the endotracheal tube to the retromolar space prior to maxillomandibular fixation.[3 5–10] Our report differs from these in that we used the retromolar space to access the oropharynx. This case highlights an additional non-invasive point of access to the oropharyngeal cavity when midline oral and nasal passages are unavailable.

Patient's perspective

I was worried going into surgery that I would have a tracheostomy because that is what my ear, nose and throat doctor told me. I was told I would have to have the tracheostomy surgery awake. This scared me and also worried me that it would affect my quality of life after surgery. I was very grateful to the anaesthesia team for avoiding the tracheostomy.

Learning points

- The retromolar space can be used to access the oropharyngeal cavity and intubate patients with severe trismus and nasal passage blockage.
- Retromolar intubation is less invasive and is associated with less morbidity than tracheostomy and submental intubation.
- The retromolar space, which can be visualised by retracting skin at the corner of the mouth, is bound posteriorly by the ascending ramus of the mandible, superiorly by the maxillary tuberosity and anteriorly by the back molars.

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