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Lingual Tonsil

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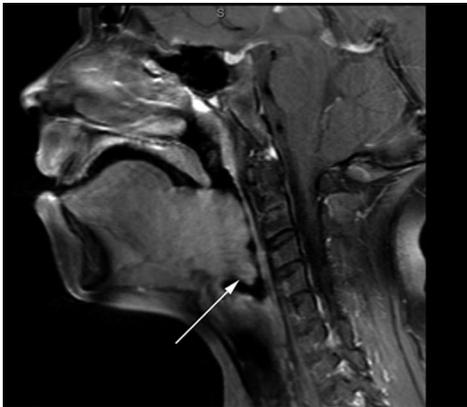


Fig. 1. T1-weighted gadolinium-enhanced sagittal image showing a large tongue base mass. Note the displacement of the epiglottis leading to obstruction of the glottis (white arrow). (Image provided with family consent by Avrum Pollock, M.D., Department of Radiology, Division of Neuroradiology, Children's Hospital of Philadelphia, Philadelphia, Pennsylvania.)

A 12-YR-OLD boy, weighing 65 kg, was presented to the outpatient otolaryngology clinic with symptoms of progressive, severe obstructive sleep-disordered breathing and voice changes. Examination revealed a massively enlarged lingual tonsil with near-complete oropharyngeal obstruction at the tongue base and associated bilateral cervical adenopathy. Magnetic resonance imaging (fig. 1) revealed a mass in the vallecula causing posterior and inferior displacement of the epiglottis with obstruction of the glottic inlet. Because this constellation of findings was suspicious for lymphoma, a chest radiograph was performed and coexistent mediastinal mass was ruled out. The surgical plan was for cervical node biopsy to avoid instrumentation of the tongue base, which might have led to airway obstruction from intralingual hemorrhage; biopsy of the tongue mass would be performed only if the cervical lymph nodes were nondiagnostic.

Considering the severity of this child's clinical airway compromise and wanting to avoid an airway catastrophe,¹ the plan for anesthetic management was to secure the airway with flexible endoscopic intubation under sedation (midazolam and remifentanyl infusion) and topical anesthesia (lidocaine) before any surgical procedure. The location and size of the mass would unlikely permit satisfactory ventilation using a laryngeal mask.²

Direct laryngoscopy was expected to be difficult or impossible. If the initial awake, sedated fiberoptic intubation approach failed, the alternative plan was for inhaled anesthetic induction followed by intubation attempts maintaining spontaneous ventilation with personnel and equipment at hand for an emergent invasive approach to the airway.³

A flexible bronchoscope, threaded through a nasotracheal tube, was inserted into the naris prepared with oxymetazoline and advanced into the pharynx (see Supplemental Digital Content 1, which is an edited video of the procedure for securing the airway of the patient described with flexible endoscopic intubation under sedation and topical anesthesia, <http://links.lww.com/ALN/A572>). The narrowed oropharynx was observed to intermittently collapse during respiration and completely obstruct any view of the supraglottic larynx. Excessive anterior soft tissue presented a narrow lumen for endoscopic navigation. Bubbles seen with respiration guided navigation beneath a barely recognizable epiglottis, revealing an excellent view of the glottic inlet followed by uneventful tracheal intubation and induction of general anesthesia.

Intraoperative pathologic evaluation of the cervical node biopsy was negative for malignancy. Multiple biopsies of the tongue and lingual tonsil were interpreted as tonsillar hypertrophy. Coblation lingual tonsillectomy was performed.⁴

Once malignancy was ruled out, dexamethasone was used to reduce the airway swelling. Postoperatively, the trachea remained intubated to allow postoperative airway swelling to subside.⁵ Laryngoscopy confirmed patency of the airway on day 3, and the trachea was successfully extubated.

References

1. Arrica M, Crawford MW: Complete upper airway obstruction after induction of anesthesia in a child with undiagnosed lingual tonsil hypertrophy. *Pediatr Anesth* 2006; 16:584-7
2. Fundingsland BW, Benumof JL: Difficulty using a laryngeal mask airway in a patient with lingual tonsil hyperplasia. *ANESTHESIOLOGY* 1996; 84:1265-6
3. American Society of Anesthesiologists Task Force on Management of the Difficult Airway: Practice guidelines for management of the difficult airway. *ANESTHESIOLOGY* 2003; 98:1269-77
4. Maturro SC, Mair EA: Coblation lingual tonsillectomy. *Otolaryngol Head Neck Surg* 2006; 135:487-8
5. Guarisco JL, Littlewood SC, Butcher RB: Severe upper airway obstruction in children secondary to lingual tonsil hypertrophy. *Ann Otol Rhinol Laryngol* 1990; 99:621-4