

Difficult Airway In A Teenager With Lingual Tonsil Hypertrophy: Multidisciplinary Approach

Matthew W. Palascak, M.D., Arundathi Reddy, M.D., Gresham T. Richter, M.D., and Colin W. Fuller, M.D.

Department of Anesthesiology and Otolaryngology, University of Arkansas for Medical Sciences and Arkansas Children's Hospital, Little Rock, AR

Email: mpalascak@uams.edu Twitter: @UAMS_Anes @drpedsoto @archildrens Instagram: UAMS_Anes

Background

Lingual tonsils are a potential source of upper airway obstruction in children and adults, especially in the setting of obstructive sleep apnea post prior adenotonsillectomy. Rarely however will they cause difficulty in intubation. Herein we present a case with severe lingual tonsil hypertrophy contributing to near complete acute airway obstruction and difficult airway exposure in an otherwise normal 18-year-old male. A perioperative team approach and intraoperative interventions to establish a safe airway are described.

Case Report

A 18-year-old male ASA 2 presented to otolaryngology clinic for noisy breathing, muffled voice, awake and asleep upper airway obstruction. Flexible endoscopy demonstrated severe overgrowth of lingual tonsils circumferentially around the supraglottis to the vocal folds. A discussion was initiated between anesthesia and otolaryngology teams regarding airway management strategies prior to endoscopy and intervention in the operative room. Patient was brought for diagnostic intraoperative sleep endoscopy (DISE) during spontaneous respiration and subsequent microlaryngoscopy and bronchoscopy (MLB).

PMH: Asthma, ADHD, snoring and muffled voice, GERD

PSH: Cystoscopy x2 several months prior to case

Previous Airway: Easy mask. Multiple grade 3 / 4 views, eventually ETT placed with video laryngoscope, Glidescope; Best recorded view was grade 2B.

Exam: Mallampati class: II. Normal thyromental distance. Good mouth opening. Full neck range of motion. Muffled voice.

Careful pre-operative airway planning lead to success in a teenager with lingual tonsils and history of difficult intubation.

Anesthetic Airway plan

- ✓ Mask ventilation with spontaneous breathing
- ✓ ETT of various sizes available
- ✓ LMAs, including intubating LMA
- ✓ Oral and nasal airway adjuncts
- ✓ Fiberoptic scope for potential awake intubation
- ✓ Video laryngoscope for backup (C-MAC)
- ✓ ENT surgeons prepared for DISE, MLB and surgical airway
- ✓ Preoperative: IV placed, glycopyrrolate administered

Operative Strategy

- Inhaled mask ventilation sevoflurane and nitrous oxide with spontaneous respirations
- Mask ventilation was adequate so propofol infusion started with fentanyl for DISE and MLB
- Otolaryngology findings
 - MLB demonstrated grade 4 view (top image)
 - A rigid telescope with diagnostic laryngoscopy using a 0 degree Hopkins telescope and camera was used to intubate patient through obstructed glottis from the lingual tonsils (middle image)
 - A 6.0 uncuffed ETT passed over the scope. No tracheomalacia.
 - ETCO₂ visualized on anesthesia machine
- Suspension Lindholm laryngoscope (in valecula) used to remove lingual tonsils
- Lingual tonsillectomy with microdebrider performed. Epiglottopexy performed and exposure was much easier. (bottom image)
- At the end of the procedure, patient fully awake for extubation and taken to the recovery area with blow-by oxygen.
- Discharged on POD 1 and was without airway complications while in PACU or inpatient

