

## [NM-163] Pediatric Lingual Tonsillar Hypertrophy Causing an Unexpected Difficult Airway

Schiffmiller M, Patel A

Rutgers University - New Jersey Medical School , Newark , NJ, United states

---

### Introduction:

Lingual tonsillar hypertrophy (LTH) is associated with prior adenotonsillectomy (T&A) and unexpected difficult direct laryngoscopy (DL) and bag-mask ventilation (BMV). The following case depicts how the interim development of LTH in a child with a previously documented normal DL can lead to an unexpected difficult airway/intubation without a change in symptoms or airway exam.

### Case:

An 11 year-old girl with known developmental delay, severe double thoracic scoliosis, and asymptomatic asthma presented for spinal fusion for scoliosis repair. She underwent uncomplicated T&A at age six for obstructive sleep apnea (OSA). At age nine, DL performed by ENT for suspected, recurrent OSA revealed a normal airway. Preoperative polysomnography showed mild-moderate OSA.

Preoperatively, the patient's vital signs and exam were grossly normal. Pertinent findings were normal weight, no recent upper respiratory tract infection, and normal lung exam without wheezing or stridor. Airway exam revealed poor mouth opening, Mallampati III, and normal thyromental distance.

After a smooth IV induction with lidocaine, propofol, and fentanyl, BMV was easy; then rocuronium was given. Upon DL with a Mac 3 blade, bleeding was noted in the posterior oropharynx, and multiple friable mucosal projections obscured the view of the pharynx and larynx. Vocal cords were briefly visualized but an attempt to pass a 6.5 endotracheal tube failed. BMV was then notably difficult even with two hands. Bleeding tissue prevented visualization of the vocal cords with video laryngoscopy. Blind tracheal intubation was successful with a 6.5 endotracheal tube.

ENT was consulted intra-operatively to evaluate the airway. Fiberoptic pharyngoscopy showed exuberant pedunculated lesions along the oropharynx extending into the laryngeal inlet. Frozen section biopsies revealed lymphoid hyperplasia.

The patient was brought to the PICU intubated for concerns of airway obstruction and difficult reintubation. She was extubated the next day after a full ENT evaluation.

Months later, the patient underwent lingual tonsillectomy. The surgeon noted exuberant LTH throughout the entire tongue base, greater laterally than centrally. The tissue was sessile and prolapsed into the airway, pressing down on the epiglottis. This partial obstruction likely contributed to the patient's OSA.

Subsequently, T1-L2 spinal fusion was done with easy intubation and without complication.

### Discussion:

Pediatric OSA is most often due to adenotonsillar hypertrophy, and it is usually corrected with T&A. Infrequently, other obstructive processes may cause OSA to recur or persist following T&A. The history of persistent OSA should indicate to the anesthesiologist the potential for LTH. Unfortunately, even with a previously normal DL, LTH may subsequently develop, and result in an unexpected difficult intubation.

### References:

Ovassapian A, Glassenberg R, Randel GI, Klock A, Mesnick P, Klafta J. The unexpected difficult airway and lingual tonsil hyperplasia: a case series and a review of the literature. *Anesthesiology*.2002;97:124-132.  
Guarisco JL, Littlewood SC, Butcher RB. Severe upper airway obstruction in children secondary to lingual tonsil hypertrophy. *Ann Oto Rhino Laryngo* 1990;99:621-4.

---