Laryngeal Mask Airway in Pediatric Tonsillectomy and Adenoidectomy: a large cohort analysis

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INTRODUCTION

Tonsillectomy and/or adenoidectomy (TA) are among some of the most widely performed surgical procedures. While endotracheal intubation (ETT) is typically used during these procedures, airway management may also be performed using laryngeal mask airway (LMA), which may have benefits including decreased airway irritation. Furthermore, LMA usage has been shown to decrease operating room times, surgical costs, and time under anesthesia. Studies on adult patients have shown a reduction in respiratory complications such as sore throat and laryngospasm with LMA use, but the utility and safety has not been extensively explored in the pediatric population. One study noted no difference in rates of laryngospasm between groups using LMA and ETT. In this study, we present, to our knowledge, the largest single institution cohort study reporting LMA use in adenoidectomy and tonsillectomy procedures.

METHODS

- Inclusion criteria:
  - patients under age 18
  - tonsillectomy, adenoidectomy, or both using single-use laryngeal mask airway
  - July 1st, 2018 and December 31st, 2023.
- Patients were assessed for primary safety outcomes by identifying any perioperative complications necessitating conversion from LMA to ETT.
- All procedures were performed by same attending surgeon (LPS)

RESULTS

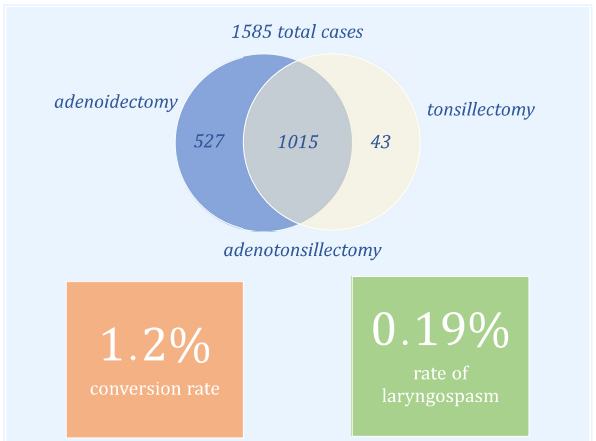

Figure 1. Patient Population and Complication Rates

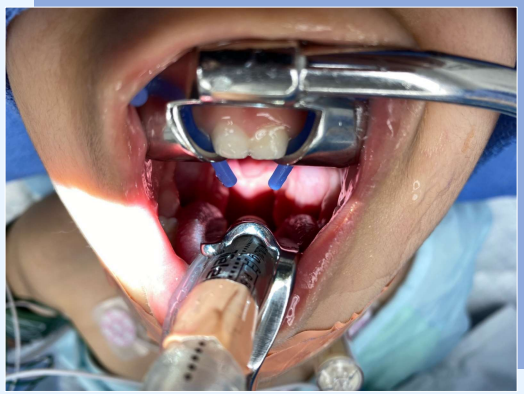

Figure 2. External view showing LMA and mouthgag in place

CONCLUSIONS

- LMA provides an advantageous alternative particularly well suited for brief elective procedures in children
  - ease of insertion
  - minimal cardiac/respiratory stimulation
- we report a 0.19% rate of laryngospasm for LMA
  - compared to 1.5% found during traditional ETT
- these findings represent the largest single center cohort study published to date, and the lower complication rate may be attributed in part to proficiency as a function of consistency
- patients received inhalational induction with a volatile anesthetic and spontaneous ventilation followed by peripheral intravenous line placement
- this method allowed for prompt LMA insertion and minimal sympathetic stimulation compared to ETT
- procedures performed with spontaneous ventilation
  - allows for quicker anesthetic emergence
  - previously shown by our group to contribute to increased intraoperative efficiency and operating room turnover rate

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