Undetected subglottic stenosis in a 6 year old presenting for femoral osteotomy

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Introduction

Laryngotracheal stenosis remains a serious complication of tracheal intubation. Postintubation stenosis, despite the recent use of low pressure cuffs, remains a frequent indication for tracheal surgery.

Case Report

We report a case of a 6 year old with a history of asthma, OSA, and prolonged unknown NICU course who presented for left femoral osteotomy. Endotracheal intubation with an age-appropriate tube was challenging secondary to subglottic stenosis and led to inability to advance the endotracheal tube past the glottic opening. After multiple attempts with smaller tubes a 3.5 cuffed ETT lubricated with surgilube was successfully placed. Following intubation we administered dexamethasone 0.5mg/kg to minimize subglottic edema.

Discussion

When encountered with an unsuspected subglottic stenosis, anesthesiologists must have alternate means of securing an airway, such as smaller endotracheal tube, laryngeal mask airway, bronchoscopy, or emergent tracheostomy.

Upon literature review, we found an increased incidence of laryngotracheal stenosis (LTS) in patients who were previously intubated for more than 48 hours and who were intubated for any non-airway surgery. We can use this as an identifier for patients at risk for subglottic stenosis prior to their scheduled surgery.

While CT, MRI, and rigid bronchoscopy are valuable tools in the evaluation of LTS, they also require sedation and concerns of airway obstruction. High voltage radiography of the neck was reported in one case report to be a less invasive exam of subglottic stenosis and would be a valuable and inexpensive way to screen these patients during the preoperative screening.

Conclusion

We should have a lower threshold of suspicion for subglottic stenosis in patients with history of prolonged intubation accompanied by any symptoms of functional airway obstruction. A preoperative neck radiograph may effectively identify these patients presenting before their surgery.

References