

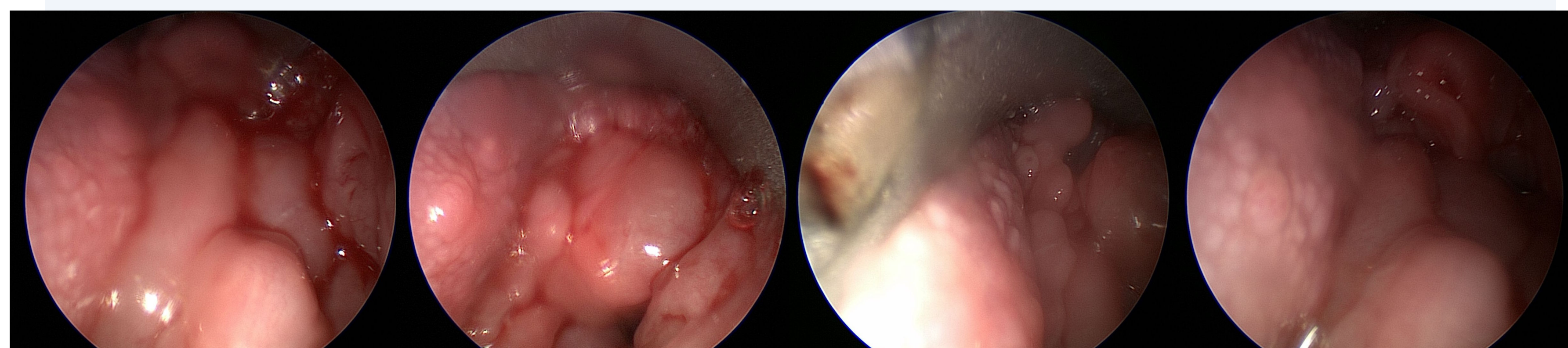
Introduction

Facial mass causing respiratory distress is a pediatric emergency. These children are known difficult airways making anesthesia preparedness critical. These patients may present for elective pediatric surgery, or for emergent definitive airway intervention due to airway compromise from the mass. The ASA has not published the prevalence of facial mass complicating anesthetic management, but in the UK, 40% of reported cases in the NAP4 audit (a major UK study on complications of anesthesia) had head and neck pathology.¹ These masses are associated with high rates of anesthetic morbidity and mortality. Our case describes successful airway management of an infant with acute ventilatory failure from a large, cystic facial mass.

Images



Rigid Bronchoscopy Images



ENT surgeon performed direct laryngoscopy with slotted laryngoscope to examine oropharynx. There was massive tumor filling the oropharynx. It extended into the tongue base making it difficult to identify laryngeal structure. However, far to the right side was a severely deviated larynx with microcystic lymphatic malformation, pushing the supraglottis to the right. A 3.0 bronchoscope was passed between the folded epiglottis. Subglottis and trachea were entirely normal except some tracheomalacia. A 3.0 microcuff ETT placed under visualization.

Case Report

A 7 month old infant girl, 4.5 kg, with a large left facial mass presented with hypoxia and respiratory distress.

- The mass was determined to be cystic lymphadenitis via imaging
- The child was in transit on a flight to seek treatment, when she decompensated mid-flight with facial pallor and increased work of breathing.
- The flight was diverted and she was transported to our facility.
- On evaluation, there was a large, ill-defined mass over the left mandible and neck to the shoulder.
- Flexible laryngoscopy was done by ENT at bedside, but they were unable to visualize airway structures.
- Afterwards, the child had worsening retractions and desaturations.
- She was emergently transported to the OR for airway protection.
- She was induced with titration of Sevoflurane and 100% FiO₂ while maintaining spontaneous respiration. A nasopharyngeal airway was needed for airway patency.
- Versed & Precedex were titrated for adequate anesthetic depth.
- Direct laryngoscopy and rigid bronchoscopy were done by the surgeons.
- Initially, it was difficult to visualize the larynx because the tumor filled the oropharynx and tongue base.
- With manipulation, the cords were observed deviated laterally secondary to the mass.
- With a view, a 3.0 cuffed ETT was placed.
- Propofol was then given to increase depth of anesthesia for the controlled tracheostomy.
- Once tracheostomy was done she was sedated with Fentanyl & Rocuronium for transport and was mechanically ventilated.
- Postop, pt was weaned to trach collar on room air and was discharged POD 20.

Discussion

The origins of a facial mass or swelling can vary from congenital causes to acquired processes of the soft tissue or bone.

Inflammatory swelling is the most common type of facial swelling in children, and lymphadenitis is its most common cause, followed by sinusitis and odontogenic infection. Lymphadenitis commonly manifests as swelling and erythema in the upper neck and submandibular and/or parotid region caused by *S. aureus* and Group A Streptococci.²

Airway compromise is a concern as the mass has the potential for airway obstruction that can make mask ventilation and intubation difficult.

These patients may be stable initially, but they can decompensate unpredictably and quickly.

In our case, a team effort between ENT and pediatric anesthesia was crucial.

The primary goal was to maintain spontaneous respiration while achieving a deep anesthetic plane to allow for airway evaluation.

This can be managed with slow titration of Sevoflurane with a combination of Precedex, Ketamine and/or Versed.

Establishing an emergent surgical airway can be difficult which is why the maintenance of spontaneous ventilation is so important.

References

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3. Khanna G, et al. "Causes of Facial Swelling in Pediatric Patients: Correlation of Clinical and Radiologic Findings." *RSNA*. Jan-Feb 2006. Vol 25, Issue 1 <http://pubs.rsna.org/doi/full/10.1148/rg.261055050>