Case Report of a Laryngocele Causing Respiratory Distress in a Neonate

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Introduction

- A laryngocele is a rare air-filled dilation of the laryngeal saccule
- May extend internally into the airway, externally through the thyrohyoid membrane or present as a combination
- Approximately 1 in every 2.5 million people per year
- Patients may be asymptomatic or present with stridor, hoarseness, cough, sore throat, shortness of breath or respiratory distress
- Only a few cases reported in the literature, found to be either congenital or acquired, related to increased laryngeal pressure or mechanical obstruction
- The largest study published in 2023 included 11 cases
- Newborn cases are more likely to be symptomatic, so the treatment of choice is surgery
- Ambros, et al. reported neonate presenting with stridor that required a tracheostomy to secure the airway due to severity of obstruction with endoscopic marsupialization 5 days later
- Literature has reported open, endoscopic and robotic surgical removal techniques

Methods

- Single surgical case report
- Performed at a tertiary medical center in Richmond, Virginia
- Focus on marsupialization and cauterization of a congenital laryngocele
- Combination of cold and hot surgical techniques

Surgical Technique

Procedure 1. Direct laryngoscopy, rigid bronchoscopy with excision of laryngeal mass

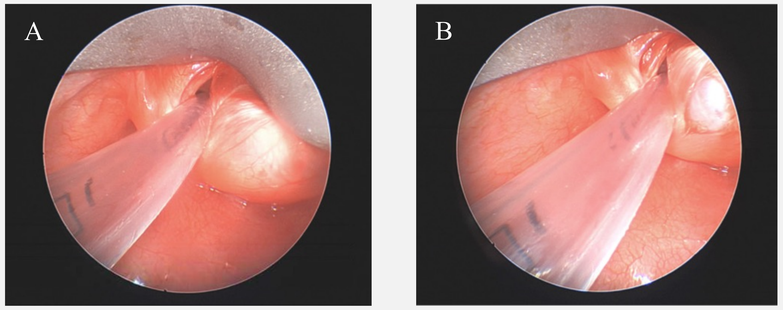

Figure 1: (A) Laryngocele of right aryepiglottic fold; (B) Removal of mucosa.

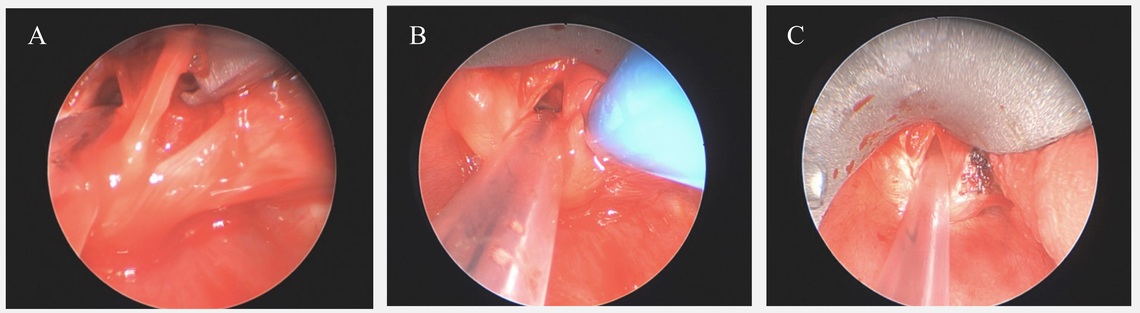

Figure 2: (A) Cold steel excision; (B) Heat hemostasis; (C) Total excision.

Procedure 2. Direct laryngoscopy, rigid bronchoscopy with excision of remaining laryngocele cyst wall

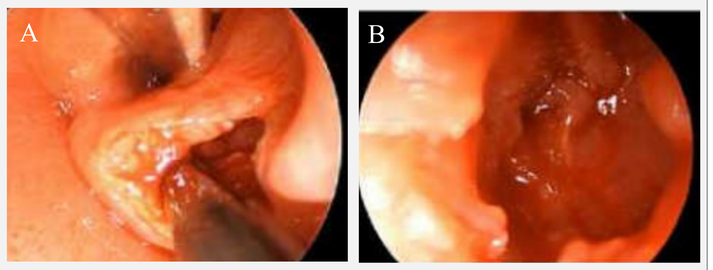

Figure 3: (A) Right laryngeal cyst wall excised with hot and cold instruments; (B) no re-accumulation of fluid, no communication between prior laryngocele pocket and airway

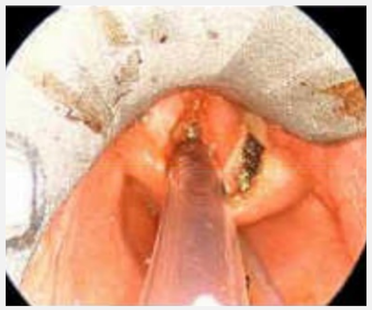

Figure 4: Surgicel was placed in the pocket to prevent re-accumulation and achieve hemostasis

Discussion

- One-day old female born at 37 weeks transferred from an outside hospital for respiratory distress, was intubated after transfer and found to have a laryngocele of the right aryepiglottic fold obstructing the airway, taken to the OR for direct laryngoscopy with marsupialization and cauterization
- On POD7, bedside flexible laryngoscopy was performed with concern for re-accumulation and the patient was taken back to the OR on POD8 for a second direct laryngoscopy and excision of remaining laryngocele capsule, no re-accumulation found at this time
- On POD14, repeat flexible laryngoscopy showed edematous right AE fold with expected post-surgical eschar
- During the two month follow up appointment, parents reported intermittent and squeaking noises; at four months, the patient was found to be asymptotic with no respiratory symptoms and appropriate weight gain
- Overall, this case presents the rare diagnosis of a congenital laryngocele in a symptomatic neonate, successfully treated with cold and hot surgical techniques.

References

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