Neonatal airway anomaly: vallecular cyst

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DESCRIPTION

Neonatal laryngeal cysts are an uncommon but recognised cause of inspiratory stridor and respiratory distress in infants. Although a small cyst may be asymptomatic, due to the anatomical location and the small size of an infant's respiratory tract, larger cysts may cause acute airway obstruction.[1] Affected infants typically display symptoms within the first week of life, which include inspiratory stridor, respiratory distress or feeding difficulties. Congenital vallecular cysts, also known as mucus retention cysts, may arise from the mucosal surface of the true vocal fold, epiglottis or vallecula.[2] Vallecular cysts are particularly dangerous as they may cause posterior displacement of the supraglottis, causing collapse of the airway during inspiration leading to respiratory compromise. Additionally, several reports have documented an association between laryngomalacia and vallecular cysts.[3] Diagnosis is typically obtained through flexible nasopharyngolaryngoscopy, and endoscopic marsupialisation is the recommended surgical approach in infants with a good long-term prognosis.

A 3-day-old full term neonate presented with stridor at an outside institution underwent a flexible fibre optic laryngoscopy that revealed an airway mass that would 'ball valve' and obstruct the laryngeal inlet before being transferred to our hospital. On initial evaluation by our team, the patient had increased work of breathing with abdominal retractions and inspiratory stridor when awake and supine, but had quiet breathing in the prone position. On day of life (DOL) 4, the patient was taken to the operating room for a diagnostic direct laryngoscopy and bronchoscopy with excision of cyst. A 6 mm mucous-filled cyst was found in the left/central portion of the vallecula (figure 1). The patient was found to also have secondary laryngomalacia from mass effect. After laryngoscopy and bronchoscopy revealed no further abnormalities, the patient was placed into suspension laryngoscopy. The vallecular cyst was grasped and the microlaryngeal coblation wand was used to excise the cyst at its base. The cyst was completely excised and the secondary laryngomalacia appeared to improve (figure 1). Postoperatively, the patient's clinical course was slow to improve subsequently requiring a supraglottoplasty that was performed on DOL 16. At that time, there was no evidence of cyst recurrence, the patient had an uneventful postoperative course and the patient was discharged on DOL 19.

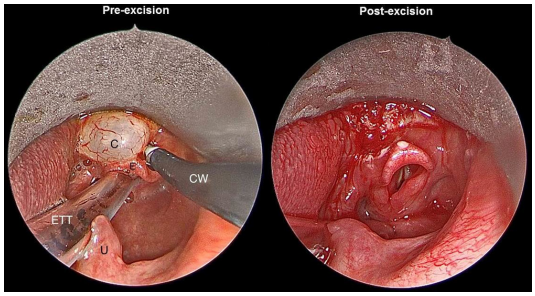

Figure 1 The pre-excision image depicts the vallecular cyst (C), endotracheal tube (ETT), uvula (U), coblator wand (CW) and epiglottis (E). The image on the right illustrates the airway after the cyst had been completely excised.

Learning points

- Awareness of structural airway abnormalities (ie, cysts or masses) and prompt direct visualisation with a prepared surgical plan is important in treating neonatal airway anomalies.
- It is important to pay close attention to coexisting airway abnormalities, especially in the setting of slower than expected clinical improvement after the initial abnormality is surgically treated.

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