



Vallecular cyst in infant: An Anaesthetic Challenge

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Introduction

Vallecular cyst is an uncommon but well-recognized cause of upper airway obstruction in newborns and infants.¹ Stridor with or without respiratory distress is the most common presentation secondary to narrowing of the upper airway.² Although benign in nature, it may cause severe airway obstruction and even death thus poses an anaesthetic challenge, especially when pediatric airway is already a challenging task.³

Case report

A 2 months old male infant weighing 4 kg, presented with stridor, recurrent pneumonia, noisy breathing and regurgitation since birth. Contrast enhanced CT showed a mass of size 1.7x1.5x1.4 cm at base of the tongue. (Figure 1) It was compressing the laryngeal pathway against oropharyngeal region. (Figure 2) A diagnosis of vallecular cyst was made and patient was planned for decompression and marsupialization of the cyst under general anaesthesia.

General anaesthesia in the above case was challenging not only because securing airway was difficult but there were also chances of cyst rupture, loss of airway, airway edema, bleeding and cannot ventilate cannot intubate scenarios.

So, awake intubation after inhalation induction was planned. Emergency tracheostomy was kept standby. All the monitors were attached and 24G

iv cannula secured in right hand. Preoxygenation with 100% oxygen was done for 3 minutes and Inhalational induction was done with sevoflurane 2% to 8% in 100% O₂ with spontaneous respiration.

Laryngoscopy was attempted but the glottis could not be visualised and the patient desaturated to 70%. Patient was ventilated with 100% O₂ and emergency tracheostomy was performed by the ENT surgeon using 3.0 mm ID tracheostomy tube. Marsupialisation of cyst was done and the patient was shifted on T-piece with O₂ on spontaneous respiration. Trial for decannulation was given after one week in operating room but the patient again desaturated to 70%. Sequential change of tracheostomy tube with 2.5 mm ID was done.

Patient decannulated after 14 days of the procedure and was able to maintain patent airway with spontaneous ventilation.

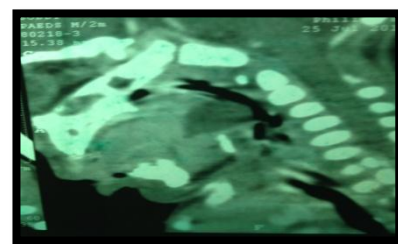


Figure 1: CT scan sagittal cut showing large hypodense mass in base of tongue and vallecula with displacement of epiglottis downwards.



Figure 2: Bronchoscopic view showing the cyst.

Discussion

Vallecular cyst is a benign retention mucous cyst.⁴ Commonest site is laryngeal surface of epiglottis. So it usually causes distortion of epiglottis, fills vallecular region and thus obstructs the airway. Laryngomalacia can occur due to flaccid epiglottis, poorly supported arytenoids or short epiglottic folds which further increases risk of airway occlusion resulting in hypoventilation, hypoxemia or death.⁵ Management includes marsupialisation and excision

Anaesthetic plans include rapid sequence induction (RSI) and awake intubation with fiberoptic or spontaneous respiration.^{6,7} In our case we did not attempt RSI because of fear of laryngomalacia and airway collapse. Paediatric fiber optic was not available. So, awake intubation with spontaneous respiration was attempted but view was completely obstructed during direct laryngoscopy.

As the patient started desaturating, emergency tracheostomy was done. Patient could not be decannulated because of laryngomalacia which is present in 90% of cases. Careful preoperative assessment with investigations like CT scan help in planning anaesthetic management of such a case of vallecular cyst with backup plan for airway crisis management.

Conclusion

Vallecular cyst poses a great anaesthetic challenge⁸ even to an experienced anaesthesiologist. Also age, symptoms, location of the cyst and most importantly clinical judgement

of anaesthesiologist needs to be kept in mind to avoid cannot ventilate cannot intubate situations. A comprehensive anaesthetic plan is the key for successful outcome in such patients.

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