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Case Report

Management of an anticipated difficult airway due to a vallecular cyst in an adult patient: When surgical airway takes the lead!!

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Abstract

Vallecular cysts, although infrequent in adults, pose a challenge for anesthesiologists in view of the risk of airway obstruction at anesthesia induction or aspiration in case of cyst rupture. The present case is of a 35-year-old male patient who was scheduled for excision of a vallecular cyst. An awake technique was initially decided for nasotracheal intubation using a flexible videolaryngoscope, Ambuscope ™ after complete topicalization of the airway with local anaesthesia. However, anticipating the need for a tracheostomy, the surgical team was prepared and this was timely chosen as the only viable option following failure to visualise the glottis despite negotiating every possible way around the cyst. This case highlights the successful management of a large vallecular cyst in an adult patient, where failed awake nasotracheal intubation despite optimal preparation necessitated an early, planned tracheostomy. This reiterates the fact that the surgical airway may not be always chosen as the last resort in crisis but also as a timely intervention to prevent an airway catastrophe.

Keywords: Vallecular cyst, Surgical airway, Tracheostomy.

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1. Introduction

Vallecular cysts, commonly known as epiglottic mucus retention or tongue base cysts, are generally caused due to obstruction in one of the submucous gland ducts. They are frequently found in infants and children with clinical presentation ranging from being asymptomatic, to resulting in feeding problems, failure to thrive and even death in a few cases due to severe laryngeal obstruction.[1,2] Although, infrequent in adults the possible symptoms include, hoarseness, dysphagia and airway obstruction, especially in case of a secondary infection like epiglottitis.[3,4] Securing the airway, may be a daunting task in cases with vallecular cysts covering the laryngeal inlet causing a two-fold risk of either an airway compromise during induction or aspiration in case of cyst rupture. The present case describes the successful management of a vallecular cyst on the laryngeal inlet in an adult patient where failed awake intubation using a flexible videolaryngoscope, Ambuscope™ despite optimal preparation prompted an early, planned and non-emergency tracheostomy, thereby preventing a potential airway catastrophe.

2. Case Report

A 35-year-old male patient presented with a history of dysphagia and anorexia for 10 days without symptoms of

hoarseness or stridor. His vital parameters were stable and on examination, there were no palpable neck masses or visible abnormality in the oral cavity. The airway examination revealed a Modified Mallampati grade of II, adequate mouth opening and normal neck movements. The patient did not have any comorbidities and all laboratory investigations were within the normal limits. Flexible nasal endoscopy performed by the surgical team revealed a cystic mass arising from the vallecula and pushing the epiglottis posteriorly (**Figure 1**). Computerized tomography of the head and neck revealed a cystic lesion filling the vallecula with a size of 3x2 cm. Owing to the challenging airway, an informed consent for tracheostomy was taken before the scheduled excision procedure, anticipating the need for a surgical airway any time. An awake technique for intubation via the nasotracheal route was planned using Ambuscope™.

Topicalization of the airway was performed by nebulisation with 4 ml of 4% lignocaine twice in the preoperative area with standard vital parameter monitoring. Subsequently, the patient was shifted in the operating room and dexmedetomidine as an infusion was administered in the dose of 1µg/kg intravenously over 10 minutes while maintaining paraoxygenation via nasal cannula @15 litres per minute. Airway anaesthesia was continued with bilateral superior laryngeal nerve blocks performed on each side using 2ml of 2% lignocaine. Following this, Ambuscope™ was advanced and the " spray as you go technique was used to ensure its smooth passage through the airway using aliquots of 3 ml of 2% lignocaine. The cystic swelling was found to be encroaching on the laryngeal inlet and glottic visualization failed despite every possible attempt of negotiating the scope around it. Extreme caution was exercised to prevent cyst rupture at all times and the backup option for securing the airway, surgical tracheostomy was decided without delay after two failed attempts using Ambuscope™. After, securing a cuffed tracheostomy tube no 7.5 mm ID and confirming placement by the capnography waveform, anaesthesia was induced by standard technique. All vital parameters remained stable throughout the intraoperative period. The cyst was excised and the contents were a mix of thick and cloudy serous fluid. At the end of the surgical procedure, neuromuscular blockade was reversed and the patient was shifted to the post-anaesthesia care unit in an awake and stable state. The process of decannulation was initiated after the confirming the absence of laryngeal edema and the patient was discharged from the hospital 7 days after the operative procedure.

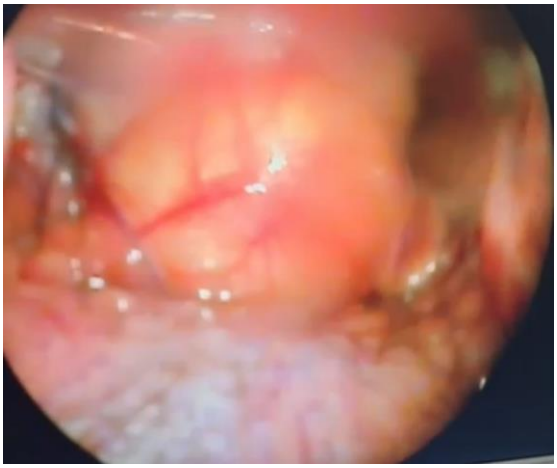

Figure 1: Flexible nasal endoscopic view of vallecular cyst

3. Discussion

The awake technique of intubation has often been chosen in literature for excision of vallecular cysts, owing to the risk of inability to secure the airway following standard anaesthesia induction.[5,8] The present case was also thus initially prepared for an awake nasotracheal intubation using Ambuscope™ keeping the surgical team ready for a tracheostomy required at any time.

The vallecular cyst was mobile, fluid filled covering the laryngeal inlet, making it impossible to negotiate the Ambuscope™ under it. No attempt of cyst manipulation by any device or forceps was made in order to prevent rupture as the surgeons were suspecting the possibility of blood as a constituent of the cyst. However, aspiration of a large vallecular cyst, prior to intubation has been reported in a case where inhalational induction was performed instead of adopting the awake technique like ours.[9]

In the present case, surgical airway was kept as a backup option, but ultimately became the only viable one. Early decision to consider tracheostomy was made owing to the inability in visualising the glottis despite manoeuvring the Ambuscope™, around the cyst. Since, the surgical team was prepared, tracheostomy was performed on a non- emergency basis with stable vital parameters and in a clean, non- bloody airway contrary to choosing it as a last resort.

The present case describes the timely and successful management of a large vallecular cyst by tracheostomy, re- emphasizing the importance of planning, anticipation and keeping a low threshold for adopting a surgical airway in scenarios where it remains the only safe option.

4. Conclusion

Airway managers must keep in mind the possibility of timely obtaining a surgical airway before the "can't ventilate and can't intubate" situation arises especially in surgical procedures involving the airway itself.

Declaration of Patient Consent

Informed patient consent was obtained for publication of clinical information.

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Conflict of Interest

Nil.

References

1. Oelsen JM, Hewett KM, Discolo CM, Jackson BF. Congenital vallecular cyst as a cause of neonatal stridor and apnea. *Pediatr Emerg Care*. 2018;34(8):e152–4. https://doi.org/2010.1097/PEC.0000000000001571
2. Muslim NN, Shakri NM, Kalimuthu S, Gopalan S, Abidin PNBZ. Vallecular cysts in newborns: A case series demystifying the obscured anomaly. *Cureus*. 2024;16(4):e57626. https://doi.org/10.7759/cureus.57626
3. Torun MT, Seçkin E, Tuncel Ü, Kılıç C, Özkan Ö. A rare entity: Adult asymptomatic giant vallecular cyst. *Case Rep Otolaryngol*. 2015;2015:723420. https://doi.org/10.1155/2015/723420
4. Jahagirdar SM, Karthikeyan P, Ravishankar M. Acute airway obstruction, an unusual presentation of vallecular cyst. *Indian J Anaesth*. 2011;55(5):524–7. https://doi.org/10.4103/0019-5049.89896
5. Kumar N, Kumar A, Kumar A, Dubey PK, Bharti B. Near-obstructive vallecular cyst. *Can J Anaesth*. 2019;66(12):1514–5. https://doi.org/10.1007/s12630-019-01483-9
6. Kannan TJ, Karthik A. Anesthetic Management for the excision of a pedunculated vallecular cyst causing airway obstruction: A case report. *Cureus*. 2025;17(4):e83018. https://doi.org/10.7759/cureus.83018
7. Yuce Y, Uzun S, Aypar U. Asymptomatic vallecular cyst: case report. *Braz J Anesthesiol*. 2013;63(5):419–21. https://doi.org/10.1016/j.bjan.2013.03.018
8. Walshe CM, Jonas N, Rohan D. Vallecular cyst causing a difficult intubation. *Br J Anaesth*. 2009;102(4):565. https://doi.org/10.1093/bja/aep031
9. Bestas A, Demirel I, Kaygusuz I. Airway management in an adult patient with a large vallecular cyst. *J Med Cases*. 2014;5(3):160–2. https://doi.org/10.14740/jmc1970e