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CLINICAL INFORMATION

Asymptomatic Vallecular Cyst: Case Report

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Abstract

A 56-year-old man presented himself for an intracranial glioblastoma multiforme excision. After being routinely monitored, he was preoxygenated. We induced anesthesia and paralysis with 200 mg propofol, 50 µg fentanyl and 9 mg vecuronium. Direct laryngoscopy with a Macintosh 3 blade revealed a 2x2 cm cyst, pedunculated, arising from the right side of the vallecula preventing the endotracheal intubation. While the patient remained anesthetized, we urgently consulted an otolaryngologist and aspirated the cyst with a 22-gauge needle and syringe under direct laryngoscopy. We aspirated 10 cc of liquid content. This was followed by an uneventful tracheal intubation with a 9.0 enforced spiral cuffed tube. An alternative to fiberoptic intubation may be careful cyst aspiration to facilitate the intubation.

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Introduction

Cysts in the larynx are rare and usually follow a benign course. They may be accompanied by acute airway obstruction by nature of their location. Laryngeal cysts have been previously reported in the anesthesia literature.¹

Laryngeal cysts have been studied and classified by site, size, contents, and relation to the laryngeal mucosa. Ductal cysts - or mucous retention cysts - are the most common type of laryngeal cysts, comprising 75% of cases. They form by the distention of obstructed collective glandular ducts. Saccular cysts, which comprise the remaining 25%, arise from the saccule, an extension of the ventricle. They may cause respiratory symptoms by enlarging the aryepiglottic fold.^{2,3}

Ductal cysts are usually small, approximately 1-5 mm in diameter and they are often asymptomatic.² They are usually only discovered incidentally at the time of routine otolaryngologic examination or at postmortem examination.¹

The exact incidence of laryngeal cysts is unknown but it is estimated to be low.³ There is no gender predominance and may occur at any age but a greater prevalence in the fifth and sixth decades has been observed. The most common location of ductal cysts is on the true vocal cords. The second most common site is in the vicinity of the epiglottis - on its lingual surface or in the vallecula itself.^{2,3}

Although they are usually asymptomatic, they may occasionally cause symptoms of stridor and failure to thrive, cough, dysphonia, foreign body sensation and dysphagia.⁴

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Figure 1 Vallecular cyst.

Case description

A 56-year-old man presented himself for an intracranial glioblastoma multiforme excision. He had no other medical problems except a dyspnea for several years. He had been seen by the chest diseases department. Before the operation, we performed a respiratory function test and obtained a result of FVC = 4.11 L (87%), FEV1 = 2.78 L (74%), FEV1/FVC=87%. We offered albuterol inhalation to be used when needed. We did not give any other medication. The patient had not been given any anesthesia for any other previous procedure.

His height was 172 cm and weight was 85 kg. He had both normal mouth opening and neck extension. We did not observe any masses or distortion of the tongue or neck. A chest auscultation revealed normal sounds.

After routine monitoring, he was preoxygenated. We induced anesthesia and neuromuscular blockade with 200 mg propofol, 50 µg fentanyl and 9 mg vecuronium. Direct laryngoscopy with a Macintosh 3 blade revealed a 2x2-cm cyst arising from the right side of the vallecula; it was pedunculated. The cyst completely obscured the view of the epiglottis and larynx, preventing intubation despite two attempts by two anesthesiologists using a Macintosh 3 blade, and after further neck extension and cricoid pressure. To prevent a decrease in oxygen saturation (SaO₂), the patient was ventilated with a facial mask. While the patient remained anesthetized, an otolaryngologist was consulted and the cyst was aspirated by a 22-gauge needle and syringe under direct laryngoscopy. We aspirated 10 cc of liquid content. Thereafter, we intubated the trachea with a 9.0 enforced spiral cuffed tube.

Discussion

In this case report, an asymptomatic vallecular cyst became apparent during induction of general anesthesia (Fig. 1), which was a cause of difficult intubation. The present patient was asymptomatic and his airway examination was normal. Moreover, his anesthesia records and hospital charts were unremarkable.

When general anesthesia is induced in a patient and difficult intubation ensues, it is important to maintain oxygenation and ventilation. We accomplished these actions in our patient with a face mask and 100% oxygen. In the case of difficult intubation, one should remember to limit repeated attempts at laryngoscopy to avoid hemorrhage and edema. If the patient cannot be intubated or ventilated by mask, then a “cannot intubate, cannot ventilate” (CICV) situation exists and immediate life-saving rescue maneuvers must be instituted. This was not the situation in our case; we promptly switched to a more experienced anesthetist for intubation and an ENT surgeon attended to the patient during mask ventilation.

The ASA Difficult Airway Algorithm lists laryngeal mask airway (LMA), esophageal-tracheal combitube and transtracheal jet ventilation (TTJV) as appropriate nonsurgical solutions for a CICV situation.⁵ In the case of a laryngeal cyst, the first two options may fail to solve the problem because both provide supraglottic ventilatory mechanisms. Moreover, as these devices are inserted blindly into the airway, they might traumatize the cyst, causing its rupture or of its blood vessels, which would result in bleeding and aspiration. The solution, therefore, should be to advance the ventilatory mechanism below the lesion by either TTJV or surgical airway. Although emergency tracheostomy was previously described in the management of an obstructing epiglottic cyst,⁶ all reported cases in which the cysts were discovered during anesthesia were managed by nonsurgical techniques. We aspirated the cyst with a 22-gauge needle and syringe, which was a safe method to solve the problem.

We consulted an otolaryngologist while the patient was still anesthetized so the cyst could be removed before intubation. This avoided the risk of any airway obstruction after extubation. This case would certainly have been managed differently had we known before induction of anesthesia. A reasonable alternative would have been awake fiberoptic intubation or prior removal of the cyst by otolaryngology before the main surgery.

The patient’s asymptomatic vallecular cyst, which we diagnosed during general anesthesia induction, caused difficulty in laryngoscopy and tracheal intubation. In this rare condition, airway management depends on whether ventilation and oxygenation can be maintained. If this end is achieved by the patient’s return to spontaneous ventilation, a fiberoptic-guided tracheal intubation may be a safer first method of approach. The patient should be allowed to wake up, since a return to spontaneous ventilation facilitates fiberoptic exposure of the larynx. We drained the cyst by a 22-Gauge spinal needle enabling to remove the obstacle in front of the vocal cords and endotracheal intubation could be done by a Macintosh laryngoscope easily after the deflation of the cyst. We believe this may be a safer way of dealing with the cyst than fiberoptic intubation.

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Conflicts of interest

The authors declare no conflicts of interest.

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