Case Report

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TANAFFOS

Huge Vallecular Epidermoid Cyst Caused a Difficult Intubation Situation: A Case Report

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Background: A vallecular epidermoid cyst is a rare condition that may cause a variety of symptoms such as dysphagia, hoarseness, cough, or even airway obstruction. We recently managed a case of a large vallecular epidermoid cyst with difficult intubation, which is reported here.

Case presentation: A middle-aged male patient with no prior comorbidities presented with a history of hot potato speech and oropharyngeal dysphagia. Flexible laryngoscopy revealed a large cyst with a normal mucosal surface in the vallecular space. The large size of the mass posed a significant challenge to endotracheal intubation. To gain full access to the cyst during induction, retrograde intubation was performed. Transoral removal of the cyst is not possible, which leads to open resection by a transhyoid approach.

Conclusion: Vallecular epidermoid cysts can present with a wide spectrum of clinical manifestations. Although rare, large lesions may pose a significant challenge to endotracheal intubation and may require an alternative surgical approach when endoscopic excision is not feasible.

Keywords: Dysphagia; Epidermoid cyst; Vallecula; Case report

INTRODUCTION

The vallecula is a space located anterior to the epiglottis and posterior to the base of the tongue, which contains lymphoid and glandular tissue (1). The vallecular mass lesions are generally seen in infants and children. These lesions are usually benign, small, asymptomatic, and are most often diagnosed incidentally. However, large vallecular masses are rare and might be associated with airway obstruction, feeding difficulties, and include ductal cysts, malignant masses at the base of the tongue or epiglottis, vascular anomalies, lipomas, dermoid and epidermoid cysts (1, 2). In the present study, we reported a massive cystic lesion of the vallecula with difficult intubation.

CASE SUMMARIES

A middle-aged non-smoker patient presented with a four-month history of progressive hot potato speech and oropharyngeal dysphagia and no history of weight loss. Flexible laryngoscopic examination showed a large vallecular lesion that protruded into the oropharynx and made the examination of the larynx impossible by pushing the epiglottis posteriorly (Figure 1). This lesion (40 mm × 50 mm) was non-erythematous and non-pulsatile with an intact mucosal surface. CT scan of the neck with intravenous contrast showed a large well-defined cystic lesion (38mm × 53mm) with no enhancement in the vallecula (Figure 2). The imaging findings were consistent with a benign cystic lesion. Initially, we decided to perform transoral endoscopic resection of the cyst, but the surgical schedule was changed to a transcervical and suprahyoid approach due to the size and inability to fully access the lesion. The anesthesiologist tried awake fiberoptic intubation due to the high possibility of difficult intubation. According to the mass size and also occupation

of the laryngeal inlet with the mass, there was no proper view of the glottis, so fiberoptic intubation was not suitable for safe airway management. Therefore, after sufficient intravenous and local sedation, we decided to perform retrograde intubation through the cricothyroid membrane. Finally, considering the size of this mass and the fact that full access to the cyst with a transoral approach alone was impossible, the trans-hyoid method for resection of the cyst was selected. The mass was completely removed through the trans-hyoid resection method after establishing a safe airway (Figure 3). The result of pathological examination was reported as an epidermoid cyst (Figure 4).

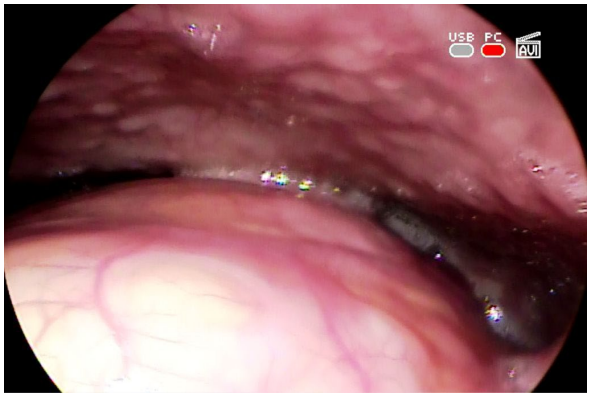


Figure 1. Clinical image of the vallecular cyst seen on direct laryngoscopy



Figure 2. CT scan of the patient

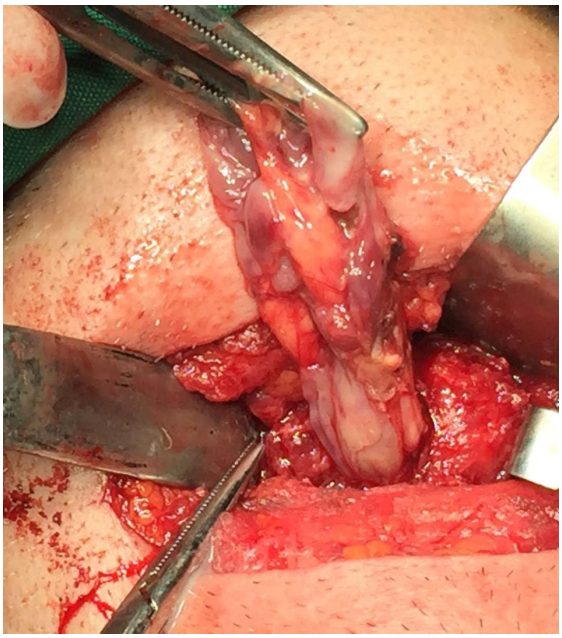


Figure 3. Image taken during surgery

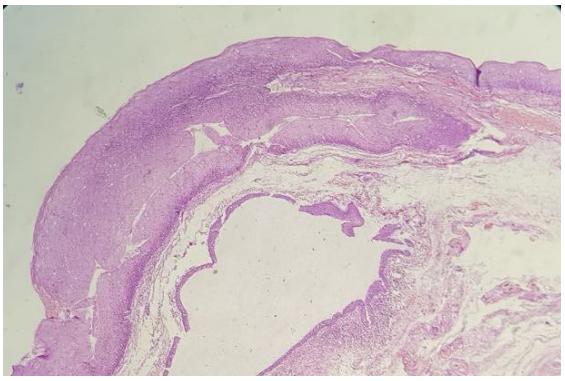


Figure 4. The histological appearance of epidermoid cyst of valleculae

DISCUSSION

The Bulky cysts located in the vallecula are very rare, especially in adults. The most common cysts of this area are retention cysts that are caused by obstruction of the submucosal ducts, which are generally called ductal or vallecular cysts. The Cysts in the vallecular region are usually small, although if they grow, they can cause life-threatening breathing problems and swallowing disorders (3). Differential diagnosis of vallecular masses includes benign cysts, lingual thyroid cysts, thyroglossal cysts, and mass lesions of the base of the tongue, minor salivary gland tumors, schwannoma, lipoma, lymphangioma,

hemangioma, dermoid and epidermoid cysts, granulomatous infection, and neoplastic conditions of the epiglottis. Diagnostic work-up for the cysts that are located in the vallecula must include a detailed medical history, a complete head and neck examination including endoscopic evaluation and appropriate imaging, because each of these components is important to reach a correct diagnosis and make an appropriate decision to choose the best approach (4).

Epidermoid cysts are benign lesions characterized by cystic spaces lined with simple squamous epithelium containing skin adnexa or tissue of all three germ layers such as muscle, teeth, bone, and cartilage. They occur in areas of embryonic fusion and constitute 1.6% – 6.9% of all cysts in the head and neck (1). An epidermal inclusion cyst filled with keratin fibers is usually found in any part of the body, especially on the face, scalp, and neck. It tends to slowly extend into the deeper layers of the epidermis, causing cystic expansion (5).

On imaging, epidermoid cysts typically appear as fluid-attenuating lesions on CT and demonstrate low signal intensity on T1-weighted MRI and high signal intensity on T2-weighted MRI. Sometimes, due to the presence of a cholesterol component, a mixed signal is created. These cystic lesions demonstrate no contrast enhancement or diffusion restriction on diffusion-weighted imaging (DWI).

To the best of our knowledge and based on the reports documented up to now, the present cyst is the largest case reported in the vallecular space, which has caused difficult intubation and led to the performance of retrograde intubation. In this case, airway control is the most important issue; in a difficult intubation situation, there are some ways to secure the airway, such as awake fiberoptic intubation, retrograde intubation, and, as a last resort, tracheostomy. Based on the size of the mass and the obstruction of the laryngeal entrance, the use of fiberoptic intubation was inappropriate, and it was decided to perform retrograde intubation.

Most vallecular cysts can be resected endoscopically, but in this case, we had to use an open approach due to its size. Treatment of vallecular epidermoid cysts is surgical, and no medical intervention is adequate. Simple aspiration is performed to remove the cysts only in emergencies, as the recurrence rate is high with this technique. Marsupialization of the cyst using electrocautery or a CO_2 laser is a less invasive treatment option associated with faster healing; however, it carries a risk of recurrence, as reported in previous studies. Singh et al. found successful outcomes from marsupialisation using micro-instruments, electrocautery, and potassium-titanyl-phosphate (KTP) laser, but it has a 15% recurrence rate (6).

Various techniques have been developed for the complete excision of vallecular lesions, which are the transoral median glossectomy approach and the transhyoid approach (7). In this case, due to the large size of the cyst and the higher probability of recurrence, we preferred to use the transhyoid method to get full access to all dimensions of the mass. In the one-year follow-up, no evidence of recurrence on laryngoscopy was observed, and the patient reported significant improvement in general condition.

CONCLUSION

Vallecular epidermoid cysts may have different signs and symptoms. They may be asymptomatic in adults but sometimes cause dysphagia, dysphonia, and dyspnea. Vallecular epidermoid cysts may rarely cause difficult intubation and may not be removed endoscopically due to their large size. To the best of our knowledge, this represents the first reported case of a lesion of this size that was completely excised using a transhyoid approach.

Conflicts of Interest

There are no competing interests to declare.

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