

Vallecular Cyst: Airway Challenge and Options of Management

Tan Shi Nee^{1*} and Aminuddin Saim²

¹ENT Medical Officer KPJ University College, Malaysia

²KPJ Ampang Puteri Specialist Hospital, Malaysia

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Introduction

Vallecular cyst is a benign cyst with unknown aetiology. It is a rare presentation in adult and may obscure view for airway intubation. Prompt anticipation of difficult airway is important to reduce morbidity and mortality. We describe a case of vallecular cyst with surgical option for airway access and discuss the surgical management option based on current literature review.

Case Report

A 36years Malay gentleman presented to the ENT clinic with hoarseness of voice for the past one year. His symptoms were not associated with any difficulty in swallowing or breathing. He had history of tuberculosis treated a year earlier. On nasoendoscopy, there was a mass at the right vallecular region measuring 2 cm×3 cm. The vocal cord was normal. No other abnormality was identified. Routine blood and radiographic lateral neck x-ray did not reveal any abnormalities. MRI and CT SCAN of the neck demonstrated a lesion arising adjacent to the epiglottis seen at the region of hypopharynx and vallecular measuring 2.7×2.6 cm. He consented for an excision biopsy of the cyst. On the operation table, endotracheal intubation via laryngoscope failed and emergency tracheostomy was performed to secure airway in view of the large vallecular cyst (Figure 3). Post operation, the histopathology report came back as a benign cyst (Figure 4).

Axial view demonstrates lesion seen in the region of the hypo-pharynx and vallecular measuring 2.7 x 2.6 x 3.2 cm. It extends from the anterior aspect of epiglottis/base of tongue into the airway. Vocal cords appear normal (Figure 1). Sagittal view shows the lesion arising adjacent to the epiglottis. This lesion also indents the posterior/ prevertebral wall causing narrowing of the airway. No obvious obliteration of the



Figure 1: Axial view demonstrates lesion seen in the region of the hypo-pharynx and vallecular measuring 2.7 x 2.6 x 3.2 cm. It extends from the anterior aspect of epiglottis/base of tongue into the airway. Vocal cords appear normal.

pyriform fossa. The hypo-pharynx appear normal (Figure 2).

Discussion

Vallecular cyst is a rare benign lesion which commonly arises from the lingual surface of the epiglottic region. It is known as epiglottic mucous retention, or base of the tongue cyst, and is classified as a ductal cyst that results from obstruction and retention of mucus in collecting ducts of submucosal glands containing clear and non-infected fluid [1]. This cyst is uncommon and its exact cause is unknown [1]. Several theories explained its pathogenesis. However two major hypotheses are that the cyst is a consequence of ductal obstruction or embryological malformation [2]. The commonest site of vallecula cyst is over the lingual surface of the epiglottis. Thus the increased size of the vallecular cyst may distort the epiglottis and fill the vallecular region as well as obstruct view of the airway [3]. This may lead to blockage of the laryngeal inlet and risk of respiratory airway distress [2,4].

There were a few methods on management of vallecular cyst. The conventional modalities include marsupialisation, or excision, where they were done either with CO₂ laser or electrocautery using direct vision with or without microlaryngoscope with a camera assembly or via snaring of the cyst using a set of tonsillectomy instruments [5-9]. Depending on the size of the vallecular cyst difficult airway is a possibility in these patients. There were a few methods in current literature reviews for intubation options in patient presenting with vallecular cyst. The commonest is normal rapid sequence induction with cricoids pressure followed by oral intubation with the help of styletted endotracheal tube [6,8]. This is feasible if the size is small and no obstruction of view of the vocal cord. Another option is via transnasal fiberoptic intubation or flexible fibre optic nasolaryngoscopy. This can be used if the normal common endotracheal intubation fails [8]. The trachea can also be intubated via a rigid laryngoscope by the otolaryngologist, which can be used to displace the cyst to view the vocal cord as the rigid laryngoscope is longer than the anaesthetic laryngoscope [3]. The last option is usually tracheostomy performed by the ENT surgeon if all other methods fail [10]. In this case, intubation was unsuccessful via endotracheal intubation due to large vallecular cyst obstructing the view of the intubation. Thus an emergency tracheostomy was performed by the ENT surgeon before surgical procedure of removing the cyst. Post operative period was uneventful and the patient was discharged on the 3rd post operative day after weaning down from the tracheostomy. On

***Corresponding author:** Tan Shi Nee, ENT Medical Officer KPJ University College, 2nd year masters ORL, 30 Lorong Haji Taib 3 Jalan Raja Laut 50350 Kuala Lumpur, Malaysia, Tel: 60162065908; E-mail: tshinee@hotmail.com

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Figure 2: Sagittal view shows the lesion arising adjacent to the epiglottis. This lesion also indents the posterior/ prevertebral wall causing narrowing of the airway. No obvious obliteration of the pyriform fossa. The hypo-pharynx appear normal.



Figure 3: Vallecular cyst noted to be on the right side of vallecular region.



Figure 4: After removal of the vallecular cyst.

follow up one week later, via endoscopic review, the wound was found to have healed completely and no recurrence noted.

This case reinforces the need to avoid repeated intubation attempts as this may increase complications as well as the need for an ENT surgeon to prepare for tracheostomy should endotracheal intubation fails via normal methods. Repeated attempts at intubation following

difficulty to visualize the vocal cord may predispose patient to airway distress or cyst rupture or even aspiration. In opting for tracheostomy to secure the airway in this case, complications of failed intubation could be avoided.

Conclusion

In preparing a patient with vallecular cyst for surgery, meticulous airway assessment and proper planning are mandatory as any difficult airway scenarios. Pre-operative assessment should be meticulously made in determining the options of intubation. Tracheostomy should be planned in advance if the vallecular cyst obstructs visualization of the airway.

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