

RESEARCH ARTICLE

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A UNIQUE CASE REPORT OF ENDOSCOPIC VALLECULAR CYST EXCISION BY USE OF A CO-ABLATOR

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ARTICLE INFO

Article History:

Received 17th May, 2019
Received in revised form
26th June, 2019
Accepted 08th July, 2019
Published online 30th August, 2019

Key Words:

Vallecular Cyst;
Coblation.

ABSTRACT

Vallecular cysts are quite rare entities, & most publications in the literature are case reports that describe neonatal airway obstruction or difficult intubation in adults. Conservative management is usually performed in asymptomatic cases. Treatment options include cyst aspiration, marsupialization, surgical debulking, & laser excision in symptomatic cases. Here we discuss the unique excision of a vallecular cyst in an elderly patient with the help of a coablator.

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Citation: Dr. Sathe Nilam Uttam et al. 2019. "A unique case report of endoscopic vallecular cyst excision by use of a co-ablator", *International Journal of Development Research*, 09, (08), 29312-29314.

INTRODUCTION

Vallecular cysts, also known as epiglottic mucous retentions or base of the tongue cysts, are ductal cysts resulting from obstruction and retention of mucus in the collecting ducts of the submucosal glands located at the base of the tongue. Vallecular cysts are covered with ductal cells rather than with acinar cells, and this supports the hypothesis that they are dilated ducts and not distended glands (DeSanto, 1970). They are rarely seen in adults and occur because of the tongue base mucus retention (Berger, 2008). Vallecular cysts are usually considered self-limiting lesions of the larynx, but in early infancy, this entity may be associated with severe airway obstruction and feeding difficulties (Mitchell, 1987). In adults, Vallecular cysts are most frequently asymptomatic, and apart from causing nonspecific throat discomfort, are usually discovered during routine laryngeal examinations. Large VCs can become symptomatic, usually causing various degrees of dysphagia. Less frequently, Vallecular cysts are discovered during the induction of general orotracheal anaesthesia when they cause difficulty in endotracheal intubation (Rivo, 2001).

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Moreover, infection of a Vallecular cysts can initiate acute epiglottitis with or without abscess formation, and thus may be associated with life-threatening acute airway obstruction also in adults (7). Vallecular cysts are quite rare entities, and most publications in the literature are case reports that describe neonatal airway obstruction (8-10) or difficult intubation in adults (6, 11, and 12). Conservative management (wait and see) is usually performed in asymptomatic Vallecular cysts. Moreover, in symptomatic cases, treatment options include cyst aspiration, marsupialization (13) surgical debulking, and laser excision (4, 5, 14, and 15). In this article we discuss the unique excision of a vallecular cyst in an elderly male patient with the help of a co-ablator aided with use of a 0(Zero)-degree endoscope.

Case Report

A 65-year-old male patient presented to the outpatient services of the ENT Department of our hospital with complaints of change in voice for three months. Change in voice was insidious in onset, gradual in progression and not accompanied with history of dyspnoea or dysphagia. Patient denied history of any addictions. 70-degree rigid laryngoscopy was done for

the patient in the OPD, where a brownish cyst was seen growing from the base of the tongue onto the epiglottis and into the vallecula. Contrast enhanced CT scan was advised for the patient which confirmed our findings as per laryngoscopy. The swelling was approximately 2cm by 1.5 by 1.5 cm in dimensions and it had fluid in it. Patient was then worked up for surgery. Patient was intubated with an endotracheal tube under visualization without any difficulty. Then with the help of a Magills Laryngoscope, a 0-degree laryngoscope was introduced to visualize the cyst. It was seen extending from the base of tongue to the lingual surface of the epiglottis, and laterally it was seen extending into the vallecula.



Figure 1. Showing vallecular cyst being excised



Figure 2. Showing intraop use of laryngeal wand of coblator and cyst reduction

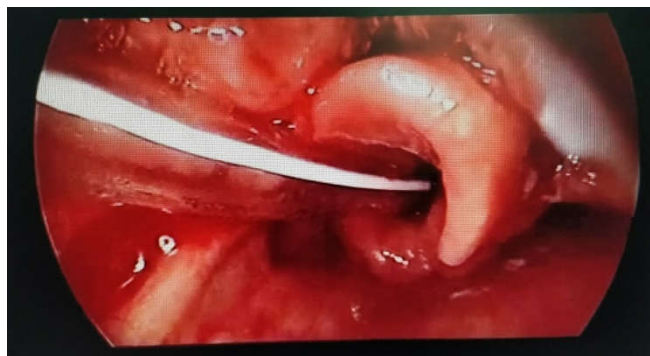


Figure 3. Showing after removal of cyst

Then with the help of forceps, the cyst was gently held, and the co-ablator was introduced. Using the coblation function, the cyst was dissected off its base in an atraumatic fashion, beginning at the base of the tongue, extending into the vallecula and finally dissected off from its attachment on the

epiglottis. While dissecting off the cyst, a small break in the cyst wall led to extravasation of a small amount of thick straw-coloured fluid which was suctioned out. The cyst was then removed in-toto and sent for histopathological examination. The site of surgery was examined post removal for bleeding and then haemostasis was achieved. Patient was then extubated without any sequelae. Post operatively, patient was kept on a period of strict voice rest for a period of 24 hours, started on intravenous injection of Dexamethasone 8mg twice a day for two days and patient was started on a soft oral diet. Post-operative stay in the hospital was uneventful, and the patient was discharged after two days. Histopathological examination revealed a simple benign cyst. Patient has been followed post-operatively for serial laryngoscopy and is currently asymptomatic.

DISCUSSION

Laryngeal cysts are rare entities with sporadic occurrence, and their prevalence and incidence are not precisely known. Laryngeal cysts comprise 5% of all laryngeal lesions and out of these laryngeal cysts, 10.5% occur in the vallecular space. They are more common in adults especially in the 5th and 6th decades of life. DeSanto et al. classified the cysts of the larynx into ductal cysts (the most common, originating from obstruction of the submucosal glands), saccular cysts, and thyroid-cartilage foraminal cysts. This kind of cyst may occur anywhere in the larynx, but the most common locations are the vallecula and the true vocal cords. Vallecular cysts may present at any age, although as we previously reported, the age presentation is bimodal. This suggests two separate clinical forms of Vallecular cysts, adult and paediatric Vallecular cysts, with different pathogenesis and symptomatology (1). Options for removal of the cysts include wait and watch, cyst aspiration, marsupialization, debulking with a snare, CO₂ Laser, and use of a microdebrider. We have discussed in this article the use of a coblator. This procedure involves non-heat driven process of soft tissue dissolution using bipolar radiofrequency energy under a conductive medium like normal saline. When current from radiofrequency probe passes through saline medium it breaks saline into sodium and chloride ions. These highly energized ions form a plasma field which is insufficiently strong to break organic molecular bonds within soft tissue causing its dissolution (16). The effect of plasma on tissue is purely chemical and not thermal. Plasma generates H⁺ and OH⁻ ions. It is these ions that make plasma destructive. OH⁻ radical causes protein degradation. When coblation is being used to perform surgery the interface between plasma and dissected tissue acts as a gate for charged particles. In nutshell coblation causes low temperature molecular disintegration. This causes volumetric removal of tissue with minimal damage to adjacent tissue (17).

Due to the use of a coblator, there was no intra-operative charring or heat induced damage to the surrounding tissue, which leads to faster post-operative recovery, and minimised the risk of oedema to the airway, reducing the need for tracheostomy. Due to reduced tissue damage, the patient could be discharged from hospital quickly and could be started on full diet from post-operative day 1. Using coblation we could dissect the cyst in-toto, thus aiding in providing a better sample for histopathological evaluation, thus enhancing the accuracy of reporting. The use of an endoscope in the procedure helped us to gain a better view of the site of surgery, aiding us in complete removal of the cyst.

Conclusion

- Coblation is a new frontier in otorhinolaryngological surgeries, which is aiding the surgeon in providing excellent tissue protection during surgery, which reduces post-operative healing time for the patient.
- It is currently being used in otorhinolaryngology for, Adenotonsillectomy, Tongue base reduction, Tongue channeling, Uvulo-palato pharyngoplasty, Cordectomy, Removal of benign lesions of larynx including papilloma, Kashima's procedure for bilateral abductor paralysis, Turbinate reduction and Nasal polypectomy.
- Of course, as with any other technology it has the cost factor built into it. The cost of wand which is meant for single use is rather high. This technology has a learning curve to surmount. After getting over the curve a surgeon can efficiently handle laryngeal lesions and other otorhinolaryngological lesions.
- With a reduction in the cost of the wand, due to its widespread use, it will act as an effective tool in an otorhinolaryngologists armamentarium.

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