

Case Report

Oncocytic cyst of larynx: a rare case

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ABSTRACT

Oncocytic laryngeal cyst is an uncommon benign lesion of larynx that develops in the supraglottic area. Oncocytic laryngeal cyst arises from the ventricle and the patient presented with hoarseness of voice. Management of these lesions is conservative and consists of local excision. It is metaplasia of respiratory or glandular salivary epithelium with no risk of malignancy although recurrence after excision can still occur. It usually presents with hoarseness of voice although acute and chronic dyspnea may occur as well. Although oncocytic cysts are benign lesions, follow-up is recommended, as recurrence is possible.

Keywords: Oncocytic cysts, Laryngeal cysts, Hoarseness, Metaplasia

INTRODUCTION

Oncocytic cysts are benign lesions of the larynx that are lined predominantly by oncocytes. The term oncocytes was first coined by Hamperl in 1930. Nohteri reported the first case in the larynx in 1946.

Oncocytes are large, irregular shaped cells, frankly red with uniform granular cytoplasm and a hyperchromatic nucleus and an eosinophilic granular cytoplasm. This peculiar aspect of the cytoplasm is related to the presence of a considerable number of hypertrophied mitochondria, accounting for the eosinophilia of the cells and for the swollen appearance of the oncocytes. The oncocytic change is a phenomenon of metaplasia which occurs frequently in epithelial endocrine cells which has high metabolic activity. It is also associated with inflammation, degenerative or aging processes.²

Parotid is the most common site of oncocytic lesions of the head and neck. They can also be found in the submandibular gland, nasal cavity, larynx, maxilla, lung

and thyroid. Oncocytic lesions of minor salivary glands are rare and heterogenous in nature.³

In larynx oncocytic cysts mainly involve the supraglottic area in particular the false cord and the ventricle because the lamina propria of their mucosa has abundant glandular tissue. However oncocytic cysts can occur anywhere in the larynx, except the free edge of the true vocal cord, which is devoid of glandular epithelium.

They are usually solitary, with involvement of an isolated site, whereas diffuse involvement with multiple cysts are extremely rare.⁴

CASE REPORT

A 63 year old male an agricultural worker came with complaints of swelling in neck for past 6 years and hoarseness of voice for 4 months. There was no stridor, dysphagia or weight loss. No chest or nasal complaints. He was a smoker, 5 cigarettes per day for 30 years. Known case of hypothyroid for 6 years on medical

management and recently diagnosed as diabetic on insulin.

On examination

Swelling in the neck-midline more towards left side, multilobulated of size 10*7 cm extends from 2 cm below mentum to 3 cm above suprasternal notch 2 cm from the the medial border of sternocleidomastoid muscles on either side (Figure 1 A and B).



Figure 1: Preoperative pictures: (A) anterior view; (B) lateral view swelling in neck of size 10*7cms.

Swelling is cystic in consistency, not warmth not tender, skin over the swelling pinchable and normal. Trachea pushed to right side. No significant lymphadenopathy. The remaining head and neck examination did not disclose any other abnormalities.

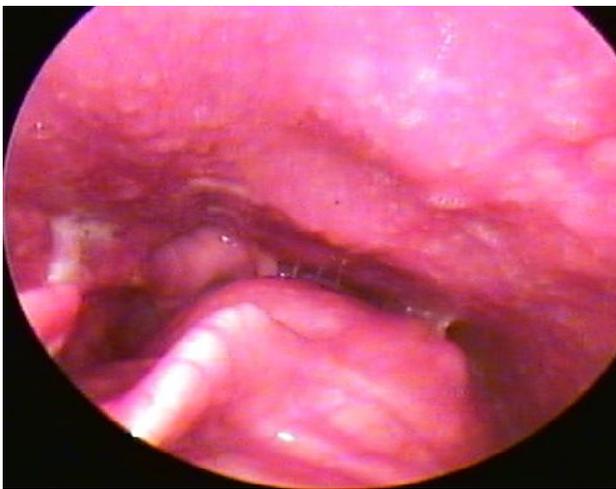


Figure 2: Preop VLS smooth mass in left vallecula and pyriform fossa.

Video laryngoscopic examination shows smooth mass involving left vallecula, pyriform fossa pushing epiglottis to opposite side obscuring the left arytenoids, vocal cords and anterior commissure (Figure 2). Right vocal cord mobile and normal. Computed tomography showed a cystic mass in the anterior aspect of larynx with intralaryngeal extension (Figure 3 A and B).



Figure 3: CT neck: (A) cystic mass seen in anterior aspect of larynx; (B) intralaryngeal extension.

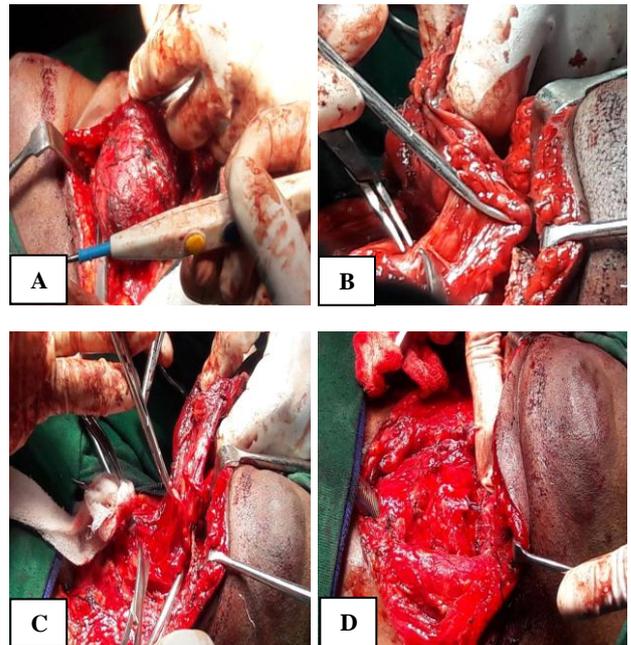


Figure 4: (A) Transhyoid approach; (B) CYST excision; (C) CTST excision; (D) Thyrohyopexy.



Figure 5: Post-operative VLS: normal vocal cord and arythenoids.

Under general anaesthesia tracheostomy and excision of cyst by transhyoid approach (Figure 4A) done. The cyst extends in between thyroid and hyoid bone to left pyriform fossa was completely dissected out and removed in toto (Figure 4 B and C). Thyrohyopexy done (Figure 4D). On 8th post operative day tracheostomy spigotting done proceeded with decanulation after 24 hours.

Postoperative VLS showed bilateral vocal cord, arytenoids and aryepiglottic fold normal except congestion over left ventricles (Figure 5). The patient is on regular follow up.

HISTOLOGICAL EXAMINATION

Histological examination revealed a cyst filled with mucoid material, with papillary infoldings lined with a monostriated oncocytic epithelium. Oncocytes were composed of columnar cells with darkly stained nuclei and abundant granular, eosinophilic cytoplasm (Figure 6 A and B) without atypia or mitotic activity. The surface of the cyst was covered by a normal stratified squamous epithelium. The cyst was localized in the lamina propria, composed of connective tissue, rich in blood vessels, and with rare lymphoid elements.⁵

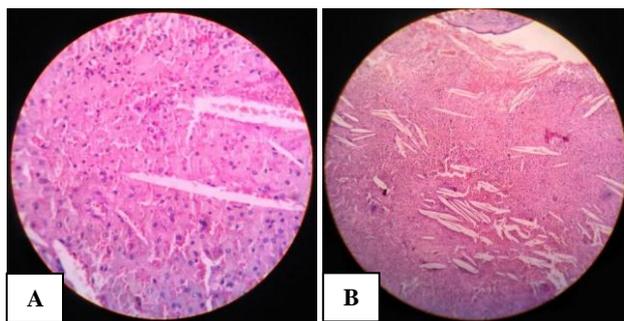


Figure 6 (A and B): Histopathology of cyst.

Histopathology shows oncocytes composed of columnar cells with darkly stained nuclei and abundant granular, eosinophilic cytoplasm (Figure 6 A and B) without atypia or mitotic activity.

DISCUSSION

Desanto classified laryngeal cysts into ductal and saccular cysts. Ductal cysts are more common occurs due to the obstruction of cyst of mucoserous glands. Saccular cysts occurs due to the obstruction of saccule. Other laryngeal cysts are developmental or oncocytic. Oncocytic cyst accounts 15% of all laryngeal cysts.⁶

Laryngeal oncocytic cysts are uncommon lesions, found predominantly in females. Usually present at a mean age of over 60 years. However, oncocytic lesions have occasionally been found under 50 years of age and,

exceptionally, in very young patients. Some authors believe that smoking is a cofactor.⁷

Hoarseness is the most common presenting symptom. It persisting for weeks or even years before the diagnosis is arrived. Pain over swelling or throat pain, difficulty in breathing or stridor or laryngeal obstructions are unusual presenting complaints.

Laryngeal oncocytic cysts originate from the irreversible transformation of glandular epithelial cells lining salivary gland ducts or acini. They can also arise from the transformation of respiratory epithelium as reported cysts are lined with ciliated oncocytes.

Altman et al suggested that mitochondrial proliferation may represent a compensatory mechanism against mitochondrial defects. Oncocysts generally presents in elderly age group in the salivary glands and other organs. Oncocytes are considered as an abnormal cellular metabolic response with the disturbance of mitochondrial enzyme organization. They are often associated with increased activity of respiratory chain enzymes, including cytochrome c-oxidase and succinate dehydrogenase. Increases in the number of mitochondria are frequently reported in mitochondrial diseases associated with respiratory chain defects.⁸

Tanji et al demonstrated that mitochondrial DNA and mt-DNA encoded respiratory enzymes deficiency plays a significant role in oncocytic transformation in various liver diseases such as cirrhosis and chronic hepatitis. One of the most common mtDNA deletions is 4977-bp deletion has been described in oncocytoma has also been involved in inflammation and ageing.⁹

Salreno at al suggested that changes in oncocytes are also seen in the hepatocytes of patients receiving highly active retroviral therapy (HAART) as a result of mitochondrial damage.¹⁰

Many terms are used to describe the oncocytic cyst including oncocytoma, oncocytic cystadenoma, oncocytic adenomatous hyperplasia, oncocytic papillary cystadenomatosis and eosinophilic granular cell cyst.

MANAGEMENT

Management of these lesions is conservative and consists of local excision, the endoscopic approach being the treatment of choice. Although oncocytic cysts are benign lesions, follow-up is recommended, as recurrence is possible, especially in the case of patients with multiple involvement, since they may present a tendency to develop new cysts. In these cases, multifocal oncocytic metaplasia is probably more common than currently held and is likely responsible for recurrence.¹¹

Our case of laryngeal oncocytic cyst may be because of chronic inflammation of the mucosa due to prolonged heavy tobacco smoking.

CONCLUSION

Oncocytic cyst of larynx is a benign cystic lesion that affects the supraglottic area. It is oncocytic metaplasia or hyperplasia of glandular or respiratory epithelium that occurs in old age.

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Ethical approval: Not required

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