



## A Rare Case Presentation of Oncocytic Cyst of the Larynx

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### Abstract

**Introduction:** Oncocytic cysts of the larynx are rare, benign, slow-growing tumours lined mostly or entirely by oncocytes. Oncocytic lesions are very usual in the larynx, seen in the lining of laryngeal cysts that affect the ventricles or false vocal cords. Since oncocytic cysts can occur anywhere in the larynx except the free edge of the actual vocal cord, barren of glandular epithelium, they are almost often solitary, involving an isolated spot.

**Case Presentation:** A 55 year old gentleman presented in the ENT OPD with difficulty breathing, especially when lying down in the past two months. The gentleman had been having hoarseness of voice for 6 months. A postoperative fiberoptic laryngoscope was done, which revealed mild oedema in the supraglottic region with normal vocal cord function. Histopathology suggested of benign oncocytic laryngeal cyst that arises from the ventricle.

**Conclusion:** It is respiratory or glandular salivary epithelial metaplasia with no risk of malignancy, though recurrence after excision is possible. Hoarseness of voice is the most common symptom, but acute and chronic dyspnea can also occur.

**Keywords:** Oncocytic Cysts; Larynx; Hoarseness

### Introduction

Oncocytic cysts of the larynx are rare, benign, slow-growing tumours lined mostly or entirely by oncocytes; it was first coined by Hamperl in 1930, followed by Nohteri reported the first case in the larynx [1-3]. The oncocytic cysts of the larynx contain large polygonal cells with hyperchromatic, frequently peculiar nuclei and eosinophilic granular cytoplasm. This peculiar feature of the cytoplasm is linked to a large number of hypertrophied mitochondria, which accounts for the cell's eosinophilia and the oncocyte's swollen appearance [4]. The oncocytic change is a metaplasia event that happens commonly in epithelial endocrine cells with high metabolic activity and is linked to inflammation,

degenerative processes, and cellular ageing [5]. The oncocytes have been identified within the epithelial mucosal lining and glands of the upper respiratory tract, the gall bladder, salivary glands, oesophagus, pharynx, tongue, thyroid, pancreas, liver, kidney, thymus, adrenals, internal genitalia, and lacrimal glands [5]. The importance of the existence of these cells in a variety of locations is still not known.

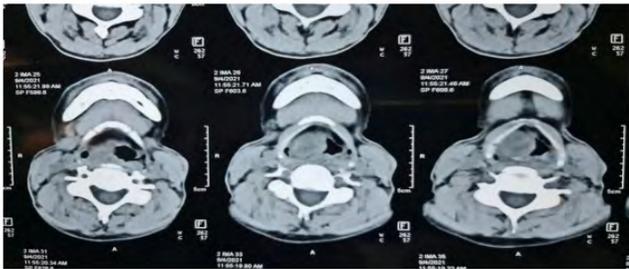
Oncocytic lesions are very usual in the larynx, seen in the lining of laryngeal cysts that affect the ventricles or false vocal cords. Since oncocytic cysts can occur anywhere in the larynx except the free edge of the true vocal cord, barren of glandular epithelium, they are almost often solitary, involving an isolated spot. In contrast,

diffuse involvement with many cysts is extremely rare [6,7]. These cysts are prevalent in the elderly population (70 or 80 years), and their incidence in laryngeal biopsies ranges from 0.5 to 1% [6,7]. The present case study discusses the rare case of 55-year-old male patient Oncocytic Cyst of Larynx.

### Case Presentation

A 55-year-old male patient presented to the ENT OPD with difficulty breathing in the past two months, especially when lying down. For the past six months, the gentleman’s voice had been hoarse. The acute presentations became more severe at night and in the supine position. There were no signs of dysphagia or neck swelling.

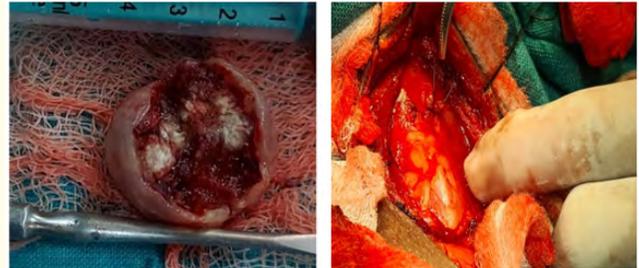
Specific ENT evaluation and general physical examination were done. A fibre-optic laryngoscopy discovered a smooth bulge in the supraglottic region encompassing the right aryepiglottic fold and ventricle. Both voice cords were functional and mobile. A well-defined heterogeneous solid-cystic mass (25 X 24 mm) at the right paraglottic region compressing the supraglottis’s neighbouring section was found on contrast-enhanced computed tomography (CECT) (Figure 1). There was no erosion or invasion of the thyroid cartilage, hyoid bone, or carotid artery. There was no evidence of cervical lymphadenopathy.



**Figure 1:** a) Laryngoscopic presentation and b) Pre-operative CT scan showing a supraglottic mass to the surrounding soft tissue.

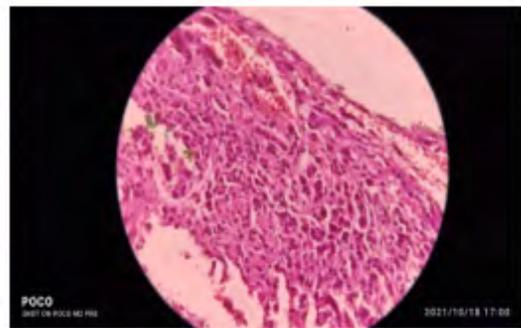
After tracheostomy, intubation anaesthesia was performed. The Laryngofissure technique was used to remove the supraglottic mass and monofilament nonabsorbable suture was used to repair the larynx. After surgery, the patient was extubated, and feeding was continued through Ryle’s tube until the fifth postoperative day. The patient was successfully decannulated on the tenth

postoperative day after receiving proper tracheostomy care. A postoperative fiberoptic laryngoscope indicated minor oedema in the supraglottic region with normal vocal cord function following surgery.



**Figure 2:** Direct laryngoscopic view of the cyst during surgery.

On histological examination, squamous mucosa with seromucous glands containing an oncocytic cyst- specimen showed a benign oncocytic cyst was found (Figure 3).



**Figure 3:** Microscopic picture of oncocytic lesion of the larynx

### Outcome and follow up

After two months, the patient was evaluated for a postoperative voice which was mild husky, which gradually improved over two months by continuing to follow up and swallowing was normal [1].

### Discussion

Oncocytic cysts can appear everywhere in the larynx, except the vocal cord’s free edge, which is devoid of glandular epithelium. They are usually solitary, affecting a single site, and their morphology varies; they might manifest as a polypoid, sessile, pedunculated

lesion or as a submucosal swelling [8,9]. Oncocytic cysts of the larynx are extremely rare, with just about 150 occurrences reported in the literature [10]. Oncocytic cysts of the larynx account for 15% of all laryngeal cysts. Oncocytes are rarely seen in young people, but they are increasingly seen in the salivary glands. Other organs as they get older and are frequently linked to enhanced respiratory chain enzyme activity, such as cytochrome c-oxidase and succinate dehydrogenase [5]. Laryngeal oncocytic cysts are rare lesions that affect primarily women between the ages of 40 and 60 [5]. A study reported that 80% of larynges from patients over 50 years had focal oncocytic alterations. In contrast, these changes were not present in larynges from patients under 50 [11]. The conversion to an oncocytic appearance is thought to result from physiological changes related to functional exhaustion since thyroid tumours formed of oncocytes are rarely functional [4].

DeSanto divided laryngeal cysts into two types: ductal and saccular. Ductal cysts are more prevalent than saccular cysts are caused by the obstruction of mucoserous gland ducts. Except for the free margin (devoid of mucoserous glands) and the epiglottis, they usually affect the chord. Saccular cysts are mucus-filled cysts that form when the laryngeal saccule is obstructed. Both have respiratory epithelial linings and range from 1 to 7.5 cm. Other types of laryngeal cysts include development and oncocytic cysts. The former can manifest as airway obstruction or branchial cleft in the second or third decades [1-3]. The most common symptoms for oncocytic laryngeal cyst are hoarseness, continuing for weeks or years before the diagnosis. Studies reported that these cysts have a neoplastic origin (thus the term "oncocytic papillary cystadenoma"), with papillary infoldings visible in these cysts as evidence of the condition's neoplastic nature [11].

Complete excision using laryngofissure, endoscopic laser excision, or CO<sub>2</sub> laser marsupialization are all options for treating oncocytic laryngeal lesions. However, recurrence is possible and could be caused by multifocal involvement or metaplasia recurrence [10]. The present case of oncocytic laryngeal cyst steadily improved over two months, and swallowing was normal.

## Conclusion

The laryngeal oncocyte is a benign lesion that affects the supraglottic area. Oncocytic metaplasia or hyperplasia of the glandular or respiratory epithelium occurs in the elderly age. A

postoperative fibreoptic laryngoscope revealed mild oedema in the supraglottic region, suggesting a benign oncocytic cyst. The majority of treatment is conservative control with local excision. However, long-term monitoring is advised because of the unknown malignant potential of these lesions. Clinicians should be aware of this differential diagnosis and the uncertainty surrounding this lesion's therapy.

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