

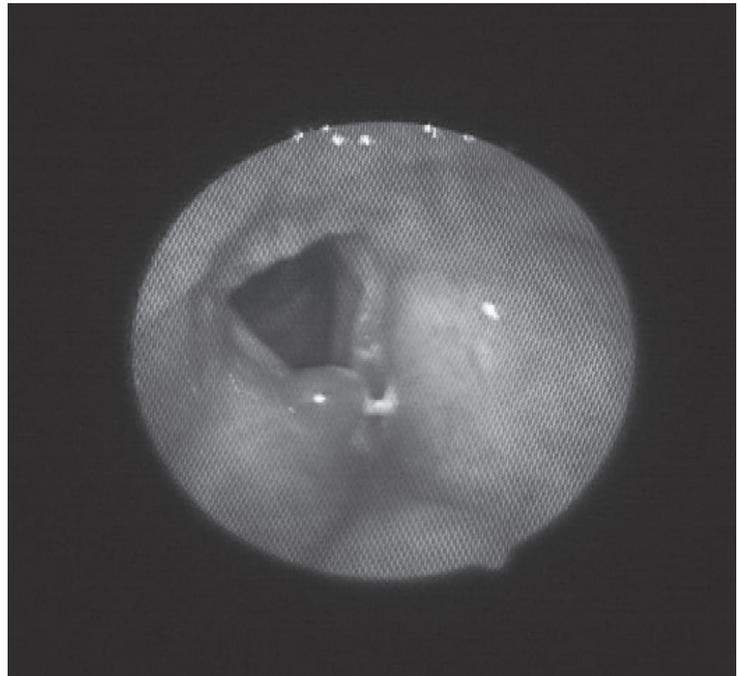
PATHOLOGY QUIZ: ONCOCYTIC CYST OF THE VENTRICULAR FOLD

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Case Presentation

A 56 year old woman presented to the Voice Clinic with recent history of change in voice quality associated with foreign body sensation in the throat and globus pharyngeus. Patient denied any symptoms of gastro-esophageal reflux, namely heartburn and or regurgitation. She had history of smoking but no history of phonotraumatic behavior. Medical history was negative for any systemic illness. On perceptual evaluation, she had a rough voice with mild straining. Laryngeal video-endostroboscopy revealed a 0.5 cm × 0.5 cm polypoidal smooth mass arising from the anterior aspect of the right false vocal fold (see Fig. 1). The true vocal folds were intact and mobile. The patient underwent suspension microlaryngoscopy under general anesthesia with resection of the mass using Carbon Dioxide Laser. The pathology revealed the following: (see Fig. 2).

Fig. 1
Laryngeal video-endostroboscopy showing a polypoidal smooth mass arising from the right false vocal fold measuring 0.5cm x 0.5.



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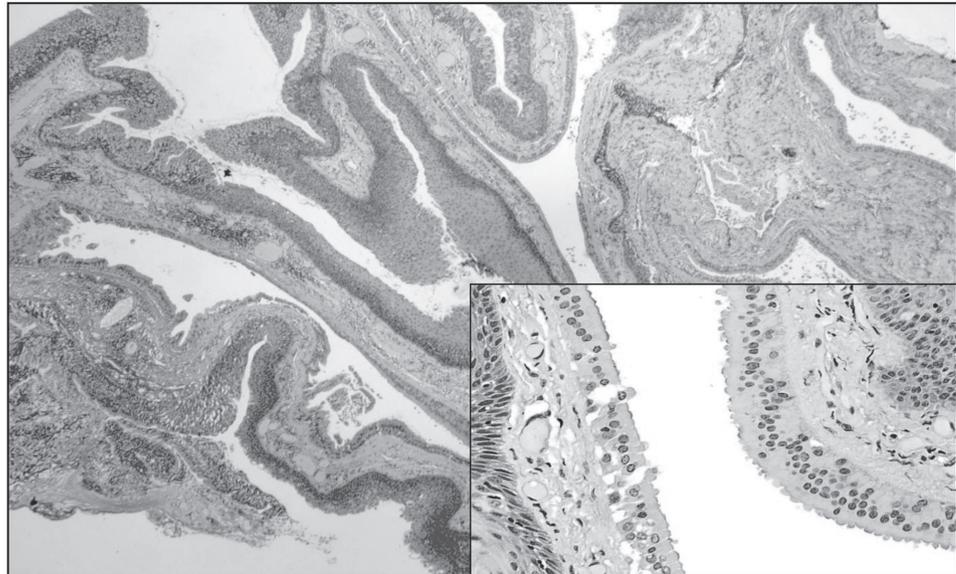
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Fig. 2

*Hematoxylin & Eosin stain-
Low magnification (40X):
Microscopic examination of
the biopsy reveals a simple cyst
lined by respiratory mucosa.
Higher magnification (400X);
The cyst is lined by cuboidal
to pseudostratified columnar
epithelium with abundant
oncocytic cytoplasm and
uniform round nuclei without
atypia or mitotic activity.*



Pathology Quiz: Oncocytic cyst of the ventricular fold

Oncocytic cysts are benign lesions lined by oncocytes¹. Many names have been attributed to these cysts such as oncocytic papillary cystadenoma, oncocytoma, cystic adenoma, eosinophilic granular cell cystadenoma, eosinophilic papillary cystadenoma and oncocytic hyperplasia². Oncocytic cysts rarely occur in the larynx despite the fact that oncocytes can be found in the normal epithelium of the thyroid and parathyroid glands, salivary glands, tongue, lacrimal system, uvula, respiratory tract, esophagus, pharynx and larynx²⁻⁴. In this later the prevalence of oncocytes increases with aging and smoking. When present, oncocytic cysts account for 0.5-1% of laryngeal biopsies⁴ and represent 7% of all laryngeal cysts and one third of cysts of the ventricular folds⁵. The distribution of these lesions is highest in supraglottic sites and lowest in subglottic region⁶. In the supraglottic region, the ventricles and the false vocal cords are the two most common sites due to the abundance of seromucinous glands in their epithelium¹. Invariably, the lesion appears as a single polypoidal mass or as a submucosal enlargement measuring less than 1cm in dimension^{6,7}. Multiple lesions are rarely reported. In our case the mass was isolated, polypoid in shape with a cystic appearance. The differential diagnosis included laryngocele, hemangioma, amyloid

deposition, among other lesions⁷. The patient may be asymptomatic or reports hoarseness of several months duration, less often with pain, stridor or respiratory obstruction^{1,7}. Our patient presented with a foreign body sensation, globus pharyngeus and mild change in voice quality. The treatment of choice is endoscopic excision with cold steel instruments or laser. Close follow up is recommended due to the risk of recurrence especially in cases of multiple cysts¹.

There several theories behind the origin of oncocytic cysts. These include occlusion of the ducts, inflammatory and degenerative changes as well as aging^{1,2,5}. The long exposure to the oxidants can lead to inflammation of the mucosal lining which in turn results in metaplastic changes of acinar and ductal cells of the salivary glands and respiratory mucosal lining. The altered metabolism is associated with compensatory hyperplasia of mitochondria and the subsequent appearance of oncocytic cells¹. The metaplasia of the distal segment of the duct leads to cystic dilatation with resultant cyst formation⁸. Oncocytes are energetic cells because of their ability to divide and the abundance of mitochondria in their cytoplasm^{2,9}. With aging and degeneration, oncocytes may undergo mitochondrial alterations which render the cells unable to produce energy¹⁰. Metaplastic changes are rare but have been reported in patients above the age of 50 with a female predominance (F/M = 2:1)^{1,8}

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