

## Saccular Cyst of Larynx

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### ABSTRACT

A saccular cyst is a mucous-filled dilatation of the laryngeal saccule which can be congenital or acquired. The management of these cysts has changed over the period of time. An adult patient was presented with hoarseness of voice. Videolaryngoscopy showed a well-defined pedunculated mass. Endoscopic-guided excision of the cyst was done. Histopathology showed features of saccular cyst of larynx. Laryngeal saccular cyst should be excised to relieve voice change, respiratory obstruction and for possible carcinomatous change. This article aims at management of saccular cyst along with review of literature.

**Keywords:** Saccular cyst, Larynx, Laryngeal cyst.

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### INTRODUCTION

The laryngeal saccule is a narrow prolongation of the ventricle at its superior extent, extending superiorly between the false vocal cord and the lamina of the thyroid cartilage.<sup>1</sup> It is lined by ciliated respiratory epithelium with 50 to 100 mucous glands. The function of the saccule is the lubrication of the vibrating vocal folds.<sup>2</sup>

A saccular cyst is a mucin-filled dilatation of the laryngeal saccule secondary to obstruction, either acquired or congenital in origin.<sup>3</sup> It is also important to remember that at times these cysts can be associated with carcinoma.<sup>1</sup>

Symptoms of the saccular cysts include hoarseness, muffled voice, dyspnea or the appearance of a neck mass. Laryngoscopic examination usually reveals a bulge in the false cord area in case of internal or combined lesions.<sup>1</sup>

### CASE REPORT

A 47-year-old male patient who is a nonsmoker presented with hoarseness of voice of 5 months duration with no dysphagia or dyspnea. Videolaryngoscopy showed a pedunculated globular mass with smooth surface arising from the anterior part of right false vocal cord (Fig. 1).

The mass rested on the anterior commissure and moved during phonation. The mucosa of the sac was normal pinkish without any hyperemia or irregularity or discoloration. Though vocal cord mobility appeared normal, because of the presence of mass, vocal cords were not adducting completely creating a phonatory gap resulting in breathy dysphonia.

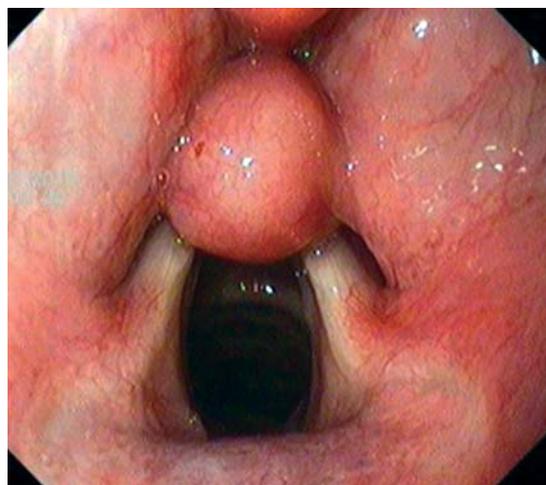


Fig. 1: Endoscopic picture showing saccular cyst

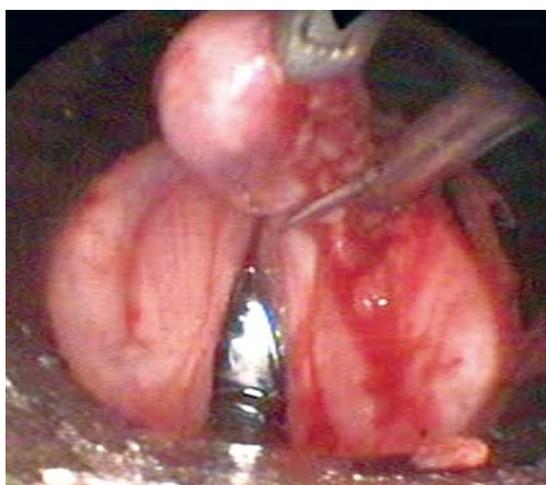


Fig. 2: Intraoperative picture showing cyst being excised

There was no cervical lymphadenopathy and systemic examination was normal. Routine hematological and urine investigations were within normal limits. A provisional diagnosis of benign laryngeal mass was considered.

Under general anesthesia a direct rigid laryngoscope was introduced to focus the vocal cords. An assistant surgeon held the 0° Hopkin's rod endoscope which was connected to a camera and displayed on a monitor. The endoscopic picture gave a good visibility of the saccular cyst with a magnified view. The mass was held with a micro-laryngeal cup forceps. It was retracted medially and a mucosal incision was made and the cyst was excised completely using a micro-laryngeal scissors including adjacent part of mucosa of the ventricle (Fig. 2).

The specimen was sent for histopathological examination. Complete hemostasis was achieved. Patient

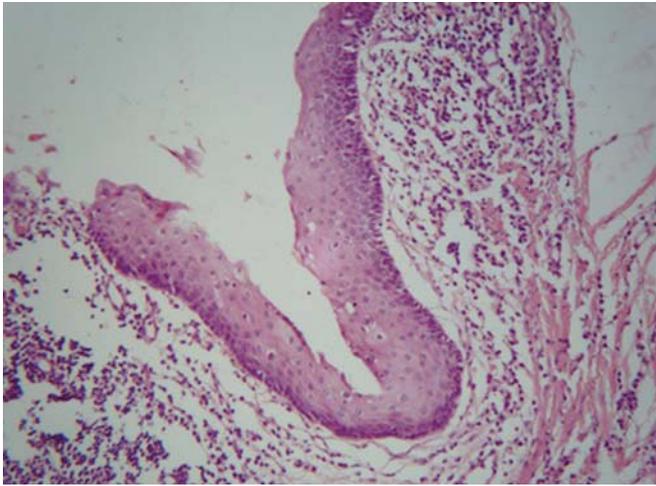


Fig. 3: Cystic epithelial lining, H&E (4x)

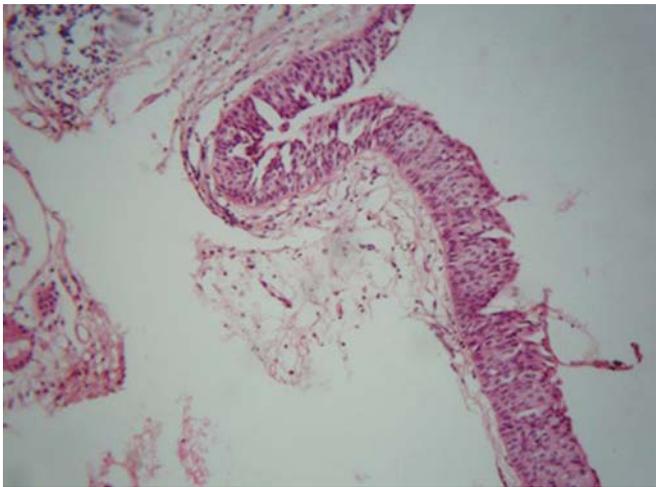


Fig. 4: Cystic epithelial lining, H&E (10x)

was treated with antibiotics and injection of dexamethasone for 2 days. Postoperative period was uneventful. Patient's voice returned to normalcy. Tracheostomy was kept as stand by procedure, but the need for the same was averted by usage of a small endotracheal tube and postoperative steroids.

Gross examination of the cystic mass showed loculations. Microscopic examination showed a cystic structure lined by partly stratified squamous epithelium and partly by ciliated pseudostratified columnar epithelium. Subepithelial stroma showed lymphoplasmacytic infiltrate (Figs 3 and 4). There was no evidence of malignancy.

A diagnosis of saccular cyst of larynx was made.

## DISCUSSION

A saccular cyst is a mucin-filled dilatation of the laryngeal saccule secondary to obstruction, either acquired or congenital in origin.<sup>3</sup> Laryngeal saccular cysts are relatively rare. It represents 25% of all laryngeal cysts.<sup>4</sup> In a review of 2 decades of laryngeal cysts (190 cases) from the Mayo Clinic, ductal cysts were most commonly encountered accounting for 75% of cases usually in the vocal cords and lingual epiglottis.<sup>3</sup>

Various classification systems are put forth for saccular cysts.

I. Based on the content<sup>3</sup>

- Mucin filled (e.g. ductal cysts, tonsillar cysts)
- Cysts due to obstruction of saccule (e.g. saccular cyst)
- Air-filled cysts (e.g. laryngocele).

II. Based on the position of the cyst<sup>3</sup>

- *Medial saccular cysts*: They are limited in size, point medially and obscure the anterior vocal fold.
- *Lateral saccular cysts*: They point superior-laterally and may herniate through the thyrohyoid membrane.

III. Depending on the cause:<sup>5</sup>

- Congenital saccular cyst
- Acquired saccular cysts.

IV. Based on the extent<sup>6</sup>

- *Type I*: Intralaryngeal cyst
- *Type II*: Extralaryngeal cyst.

Radiographically saccular cysts do not appear air filled and CT shows large fluid filled cysts at the level of hyoid bone. Fine cut (1-1.5 mm) CT scan of larynx with contrast is recommended to confirm the diagnosis and to define the extent of the cyst.<sup>5</sup> Histologically saccular cysts are lined by saccular mucosa usually respiratory type, but occasionally squamous or oncocytic mucosa and filled with mucinous material.<sup>3</sup> The cystic wall may be chronically inflamed. In long standing cases, cholesterol clefts are seen in the wall.<sup>1</sup>

Saccular cyst has to be differentiated from the laryngocele (Table 1). The incidence of carcinoma associated with saccular cysts and laryngoceles is well documented and ranges from 5 to 30%.<sup>7</sup> Hoarseness of

Table 1: Comparison of saccular cyst and laryngocele<sup>1</sup>

Saccular cyst	Laryngoceles
<ul style="list-style-type: none"> <li>• Do not spontaneously deflate</li> <li>• Not easily compressible</li> <li>• Fluid (mucus) filled cavity is present</li> <li>• Fluid filled radiographically</li> <li>• Do not communicate with laryngeal lumen</li> </ul>	<ul style="list-style-type: none"> <li>• Deflate</li> <li>• Are easily compressible</li> <li>• Air-filled cavity is present</li> <li>• Air-filled radiographically</li> <li>• Do communicate with laryngeal lumen</li> </ul>

voice, airway compromise and concern of malignancy are the indications for surgery.<sup>5</sup> The complete cyst including the mucosa of the ventricle and false vocal fold should be removed with the specimen to prevent recurrence.<sup>5</sup>

Some of the treatment modalities include endoscopic excision, microlaryngeal surgery, laser excision, extended ventriculotomy, needle aspiration, marsupialization,<sup>8</sup> and excision via external approach. Smaller cysts restricted to laryngeal lumen may be managed endoscopically. Larger cysts and in infants and small children external approach may be required.

## CONCLUSION

As saccular cysts are identified to be associated with neoplastic transformation, it is important to recognize the laryngeal saccular cyst and manage appropriately in its early course of time and differentiate it from other laryngeal cysts. Thorough diagnostic evaluation and surgical intervention necessitates the appropriate patient management. Rigid Hopkins 0° nasal endoscope gives good visibility for complete excision.

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