

# Infected Epiglottic Cyst Presenting With Stridor in an Adult: A Case Report

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## ABSTRACT

Epiglottic cyst is a benign tumour that can occur at all ages. Considering that the diameter of the respiratory tract is smaller in infants and children, an epiglottic cyst may easily obstruct the airway and large cysts may present as stridor, cyanosis with feeding and respiratory difficulty. On the other hand most adult epiglottic cysts remain benign and asymptomatic. Rarely they may progress to epiglottitis or epiglottic abscess, leading to airway obstruction and respiratory arrest. We report the case of a 20 year old male patient who presented to us with abrupt onset of dyspnoea and stridor. Our foremost priority was to secure the airway and emergency tracheostomy was done. Laryngoscopic examination revealed a large cyst occupying lingual surface of epiglottis including the free margin. Contrast enhanced CT scan of neck demonstrated prominent epiglottis with hypodense lesions suggestive of abscess within it. The patient underwent microlaryngoscopy with marsupialization of the cyst wall. Patient was subsequently decannulated and on follow up showed no recurrences of cyst.

**Keywords:** Epiglottic cyst, Microlaryngoscopy, Stridor, Tracheostomy.

## INTRODUCTION

Laryngeal cyst is a rare entity and constitutes only 4.3% to 6% of all benign laryngeal tumours.<sup>[1]</sup> The clinical presentation of this benign tumour varies in relation to its size and location. The majority of cysts originate from the epiglottis.<sup>[2]</sup> Laryngeal cyst was first described by Verneuil in 1857 while doing post-mortem examination of an infant. In 1864 a case of epiglottic cyst was first reported by Durham in an 11 year old boy. Most of the adult epiglottic cysts remain benign and asymptomatic in contrast to the congenital epiglottic cyst which almost always causes neonatal respiratory distress or even sudden death. Here we report a case of infected epiglottic cyst in a 20 year old male patient who presented to us with sudden onset of stridor.

## CASE REPORT

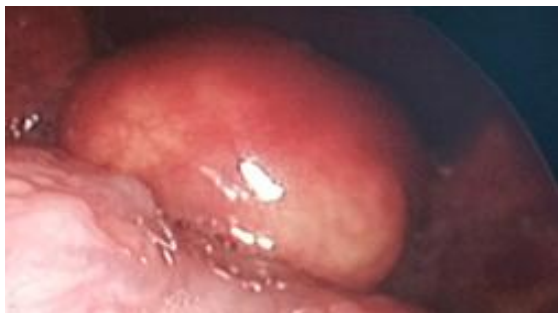
This is a case report of a 20 year old adult male who presented to the emergency department with abrupt onset of dyspnoea and noisy breathing since 2 hours. He also reported of having fever since 1 day. There

was no history of any systemic illness. On examination the patient was afebrile and had an anxious and worried look. The stridor was present during both inspiration and expiration (biphasic). SpO<sub>2</sub> was measured and was below 90%. With this age, history and clinical presentation we considered this to be a case of acute epiglottitis with stridor. Since our topmost priority was to secure the airway, we did an emergency tracheostomy and Jackson's metallic tracheostomy tube No: 5 was inserted. The whole procedure was uneventful. We ordered for a complete blood examination which showed an elevated WBC count with predominant polymorphonuclear leukocytes. The oral cavity was examined carefully and no abnormality was noticed. When the general condition of the patient improved, the larynx was evaluated with 70 degree endoscope which revealed a globular yellowish red cystic mass arising from lingual surface of epiglottis including the free margin. The surface of the swelling appeared smooth with prominent vessels [Figure 1, Figure 2]. X- Ray soft tissue neck lateral view showed increased soft tissue shadow of the epiglottis (? Thumb sign) [Figure 3]. The patient was subjected to contrast enhanced computed tomography (CECT) scan of the neck which demonstrated a prominent epiglottis with hypodense lesions, largest measuring approximately 2.5x2 cms with ring enhancement. The findings were suggestive of infected epiglottic cyst with abscess within it [Figure 4, Figure 5].

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Patient was treated with parenteral antibiotics, adrenaline nebulisation and intravenous fluids. The condition of the patient gradually improved in 1 week and marsupialization of epiglottic cyst was planned. Preliminary diagnostic direct laryngoscopy was done under GA by intubating through the tracheostoma. Diffuse swelling was noted occupying whole of the lingual surface of epiglottis including the free margin extending up to both vallecula. The other supraglottic structures, laryngeal surface of epiglottis and bilateral vocal cords appeared normal. Using microlaryngoscopy, marsupialization of the cyst wall was done. Cyst wall was sent for histopathological examination (HPE). The post-operative recovery was uneventful. The HPE report suggested of chronic infected cystic lesion. The patient was decannulated 2 weeks from the day of tracheostomy. Figure 6 shows the laryngoscopic image at the time of discharge. The patient is on regular follow up and no recurrences of cyst noticed till date.



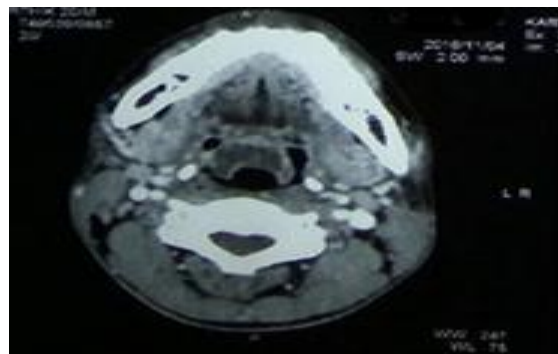
**Figure 1:** Endoscopic view of the huge epiglottic cyst causing airway obstruction.



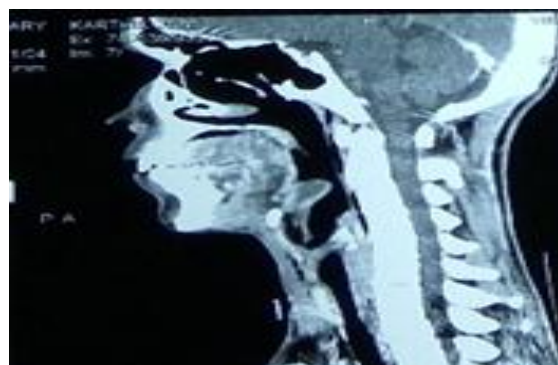
**Figure 2:** Endoscopic view of interior of larynx of the patient with the vocal cords in view.



**Figure 3:** X-ray lateral view soft tissue neck (? Thumb sign).



**Figures 4:** Axial view of CECT Neck showing prominent Epiglottis with a ring enhanced hypodense lesion.



**Figure 5:** Sagittal view of CECT Neck showing the lesion.



**Figure 6:** Endoscopic view at the time of discharge of the patient.

## DISCUSSION

Epiglottis is a thin flap like structure made up of elastic cartilage, covered with a mucous membrane and forms the entrance to the larynx. The upright position of this structure during rest allows air to enter larynx during respiration. During the process of swallowing, it folds back to cover the larynx and thus preventing food from entering the air passage. Epiglottic cysts are benign laryngeal lesions that can affect any age group. However most adult epiglottic cysts are detected in the 6th decade.<sup>[3]</sup> The most common site for this lesion is the lingual surface of

epiglottis and less commonly on the laryngeal surface.<sup>[4]</sup>

Various classification systems exist for laryngeal cysts including epiglottic cysts. In 1922, Myerson classified these cysts into retention, embryonic, vascular, and traumatic types.<sup>[5]</sup> This classification system didn't gain popularity because of its complex nature and lack of clinical utility. A much useful classification was provided by DeSanto et al. in 1970,<sup>[6]</sup> who broadly divided them into two types: 1) Ductal-type and 2) Saccular-type. The obstruction of excretory duct of submucosal glands resulted in the ductal variety; whereas the saccular-type was considered to have developed as a result of excessive extension of the sacculle of the ventricular fold in the larynx. Later in 1984, Newman et al. did a clinicopathological study of 20 cases of laryngeal cyst in adults and accordingly categorized the lesions into epithelial, tonsillar, and oncocytic types.<sup>[7]</sup>

A detailed history taking and meticulous clinical examination form the key to the correct diagnosis of an epiglottic cyst. Often the first clue may be provided by indirect laryngoscopic examination. X-ray may mimic acute epiglottitis with a thumb sign. CT scan demonstrates a hypodense mass at the tongue base. Ring-shaped contrast enhancement may occur in an infected cyst.<sup>[8]</sup>

Even an asymptomatic epiglottic cyst provides a potential challenge to anaesthetist while induction of anaesthesia. Muscular relaxation offered may cause falling back of the cyst causing partial or total obstruction of larynx leading to difficulty in ventilation and respiratory failure. Another serious complication is the secondary infection of the cyst which may progress to epiglottitis or epiglottic abscess which can cause obstruction of airway and respiratory arrest.

Treatment of epiglottic cysts depends on their size and on the clinical symptoms. Surgery is necessary for large epiglottic cysts. Treatment modalities include endoscopic excision, marsupialization, and deroofing with or without a carbon dioxide laser.<sup>[9,10]</sup>

A lateral pharyngotomy approach for cyst removal is preserved for recurrent cases.<sup>[10,11]</sup> An endoscopic technique with a carbon dioxide laser can be successfully applied in nearly all cases due to the laser's good hemostatic effect. To avoid local recurrence, the cyst wall has to be completely resected. In our case we did a prior tracheostomy and secured the airway of the patient which was followed later by microlaryngoscopy aided marsupialization of the cyst wall.

## CONCLUSION

A huge epiglottic cyst may mimic obstructive airway disease, but can be easily ignored by clinicians. This case highlights the rare presentation of adult infected epiglottic cyst with stridor requiring an early airway management followed by a definitive surgery.

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