A Rare Case of Internal Laryngopyocele presenting with Stridor

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ABSTRACT

A laryngocele is an abnormal elongation and expansion of the saccule of the laryngeal ventricle. When the neck of the laryngocele is obstructed, it becomes filled with mucus of glandular secretion and is altered to a laryngomucocele. When this lesion becomes infected, laryngopyocele is formed. In view of the general rarity of laryngopyoceles and even more so, one causing acute airway obstruction, it was decided to report an instance of the latter type. The clinical features and management of this rare case has been described.

Keywords: Laryngopyocele, Microlaryngeal surgery, Stridor.

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INTRODUCTION

A laryngocele is an abnormal elongation and expansion of the saccule of the laryngeal ventricle. It represents more than 20% of submucosal lesions of the larynx,1 2 Although laryngoceles are usually asymptomatic, large lesions may be associated with airway obstruction and vocal cord paralysis.3 Laryngoceles within the paraglottic space and confined by the thyroid lamina are termed internal. Lesions that pierce the thyrohyoid membrane to present in the lateral neck are termed external. Most cases are a combination of external and internal lesions and are referred to as mixed. Regardless of position laryngoceles are usually visualized as sharply defined air-containing structures on imaging.4 A modified Valsalva’s maneuver occasionally improves visualization of these lesions. When the neck of the laryngocele is obstructed, it becomes filled with mucus of glandular secretion and is altered to a laryngomucocele. When this lesion becomes infected, laryngopyocele is formed. Laryngoceles present with hoarseness, cough, dysphonia, or cervical swelling. Consequences can include infection (pyocele), aspiration with subsequent pneumonia and severe upper airway obstruction may occur due to mechanical obstruction.5

In view of the rarity of the laryngopyoceles and the even rarer laryngopyocele that causes acute airway obstruction, it was decided to report the presentation and management of such a case.

CASE REPORT

A 35-year-old female presented to the Casualty Department of Adichunchanagiri hospital with stridor, with a 1 week history of throat pain, cough, and difficulty in swallowing. Physical examination revealed marked respiratory distress with stridor, tachypnea, and hoarseness. Her oxygen saturation (SpO2) on admission was 78% on room air. Her arterial blood gases on room air were pO2 76 mm Hg, pCO2 54 mm Hg and pH 7.31. On palpation of neck, no mass was noted. Indirect flexible laryngoscopy demonstrated a large cystic mass originating from left ventricle obscuring the false vocal cord and causing total obstruction of glottis (Fig. 1). The mass had a smooth mucosal surface. Since, the mass prohibited intubation, an emergency tracheostomy was performed to secure the airway as the patient’s pulse oximeter recorded a drastic downfall in SpO2 levels. Computed tomography (CT) scan revealed a 2.5 cm cystic hypodense lesion in the larynx above the level of true vocal cords obstructing the glottis completely (Fig. 2). A diagnosis of internal laryngopyocele was made. Patient was admitted in surgical intensive care unit and

Fig. 1: Smooth-surfaced mass completely obstructing the airway
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**DISCUSSION**

The estimated incidence of laryngoceles is 1 per 2.5 million people per year. The sex incidence is 5:1 in favor of male sex and maximum age of incidence is in the sixth decade. Laryngoceles are unilateral 85%, so bilateral are rare.

Laryngoceles were first described by Virchow in 1867 and named them as ‘laryngocoele ventricularis’ to describe air-filled dilatation of ventricular saccules. They are classified as internal, external or mixed. Internal laryngoceles stay within confines of the thyrohyoid membrane, while external laryngoceles extend beyond the cartilaginous boundaries of larynx and maintain only a thin connection to their site of origin. Mixed laryngoceles have substantial components both inside and outside the larynx.

A patient with laryngocoele usually presents with a soft compressible lateral neck swelling of long duration which increases in size on valsala’s maneuver. The patient may be totally asymptomatic or may have symptoms, such as hoarseness, dysphagia, snoring, cough and stridor. About 8% of cases may present with infected sacs or laryngopyoceles. The commonest presenting symptoms of laryngopyocele are hoarseness and a lump in the throat. But it may present with sore throat, pain, dysphagia, stridor and snoring.

A contrast-enhanced computed tomography scan can demonstrate signs of inflammation, such as thickening of walls or perimeter enhancement of the laryngocoele, and assist in the differential diagnosis. In the latter, it is necessary to take into consideration the saccular cyst, fluid filled laryngocoele, branchial cysts, paraganglioma, schwannoma and thyroglossal duct cysts which exist in the supraglottic area.

The recommended treatment of laryngopyocele is immediate endoscopic drainage; additional definitive surgery should be performed via an external approach for external and combined lesions. Additional surgery involves removal of superior margin of thyroid lamina.

Laryngocoele or laryngopyocele associated with stridor is a very rare clinical entity. Stridor can develop suddenly over a period of few days or even hours, even in a patient who had previously only mild symptoms for months or years. Laryngopyocele complications consist mainly of inhalation of purulent material after the rupture of cyst, leading to acute respiratory distress.

**CONCLUSION**

Laryngopyoceles are a rare complication of laryngoceles and may present with rapid airway obstruction. Diagnosis requires...
a high index of suspicion and a proper clinical and radiological evaluation. They must be included in the differential diagnosis of acute airway obstruction, especially when fever, inspiratory stridor and hoarseness are present. A CT scan is essential in determining the nature and the site of the lesion. Aggressive antibiotic treatment and emergency tracheostomy can avoid dreadful complications. The definitive management of laryngopyocele is surgical excision. Recurrence after surgery is uncommon.

REFERENCES