

Case Report

Mixed laryngocoele: A rare cause for acute airway obstruction

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Abstract

Laryngocoele is a rare benign dilatation of laryngeal mucosa that may extend internally into the airway or externally through the thyrohyoid membrane. A 50 year male presented with painless swelling in upper neck since 2 years with chronic cough and hoarseness of voice since 1 year and acute onset breathlessness since 3 days. On examination, there was a diffuse, non-tender, cystic swelling in the anterior triangle of neck on left side, about 4X6 cms, compressible & increased in size of coughing and valsalva manoeuvre. X-Ray neck showed large air filled sac on left side of neck. CT scan revealed bilateral laryngocoele with both external and internal component on left side and only internal component on right side. Fibro-optic laryngoscopy revealed a normal study. Excision of the left laryngocoele was done. Post operative recovery of the patient was uneventful. Diagnosis of laryngocoele should be kept in mind in case of upper neck swellings. A review of literature has also been done on this topic.

Keywords: Laryngocoele, mixed laryngocoele, acute airway obstruction, Valsalva Manoeuvre

1. Introduction

Laryngocoele is abnormal saccular dilatation of appendix of laryngeal ventricle of Morgagni¹. Etiology is still unclear, both congenital and acquired factors play role in its development. Incidence of laryngocoele is 1 per 2 million people per year. Male: female ratio is 5:1.^{1,2,3} 85% cases are unilateral^{4,5}. Most of them are asymptomatic and incidentally detected on radiographic studies for unrelated symptoms^{2,6,7}. But here we report an acute airway obstruction due to laryngocoele which is treated successfully with surgery without need for tracheostomy.

2. Case report

36 year old male patient, a chronic smoker presented to surgical OPD with hoarseness of voice, left sided neck swelling, cough since 8 months, dyspnoea of sudden onset, dysphagia, productive cough, and fever since 3 days. Patient had tachycardia, tachypnoea, he was febrile and dehydrated. Neck examination revealed soft, non-tender, compressible swelling of size 8X6 cm on left side in upper one third of neck, which increased in size on Valsalva manoeuvre (fig 1). Impulse on cough was present. X-ray soft tissue neck antero-posterior and lateral view revealed air filled cavity on left side of neck. Indirect laryngoscopy and direct laryngoscopy revealed fullness in left vallecular region and biopsy was taken from it to rule out malignancy. CT scan of neck (fig 2) revealed left mixed laryngocoele and right internal laryngocoele. X – Ray chest revealed right sided consolidation. With these investigations diagnosis of mixed laryngocoele with aspiration pneumonia was made. Initially patient was treated with broad spectrum antibiotics, nebulization, and supplementation. After 5 days of medical management patient was posted for surgery. By External cervical approach laryngocoele was carefully dissected

and its neck reached after removal of upper 1/3 rd of thyroid ala and excised completely (fig3). This was done under general anaesthesia with a small portex tube without the need for tracheostomy. Intra operative fibro-optic laryngoscopy revealed complete excision of internal component of left mixed laryngocoele. Post-operative recovery of the patient was uneventful. Histopathological report of laryngeal sac revealed no evidence of malignancy.

Fig 1: The swelling increasing in size on valsalva manoeuvre



Fig 2: X-Ray neck AP view reveals an air filled cavity on the left side of the neck & CT scan of neck revealed left mixed laryngocoele and right internal laryngocoele

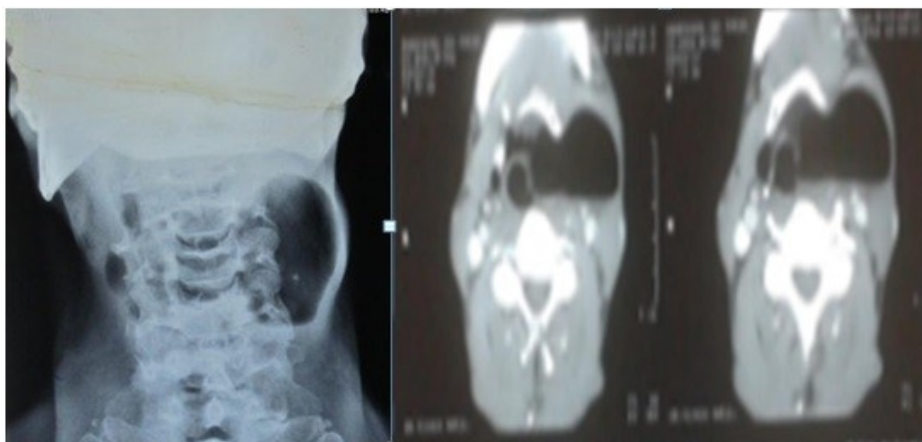


Fig 3: Intraoperative photo- The Laryngocoele sac dissected upto the neck and excised



3. Discussion

Laryngocoele is a rare benign dilatation and herniation of laryngeal saccule: frequently found in male with peak incidence in sixth decade of life⁸. 85 % of laryngocoele have been reported to be unilateral, 15 % found to be bilateral^{4,5}. Three types of laryngocoele in relation to thyrohyoid membrane, internal confined to laryngeal ventricle, external extend through thyrohyoid membrane and combined have both external and internal component^{9,10,11,12,13,14}. Exact etiology is not known⁵. Congenital and acquired factors are associated with its development. Congenital predisposition due to ventricular appendix causing respiratory distress in newborn has been reported¹⁵. Acquired factors that raises intraglottic pressure associated in causation of laryngocoele such as performing Valsalva manoeuvre¹⁶, playing wind instruments, glass blowing^{4,5,7} ventricular phonation during speech², laryngeal papillomatosis in children⁷. Association of laryngocoele with other diseases such as amyloidosis¹⁷, ankylosing spondylosis⁵, and oncocytic cysts¹⁸ have been reported. Laryngocoele are usually asymptomatic⁵, may present with dysphonia¹¹, neck swelling^{6,15,16} sore throat, cough, dyspnoea, stridor, foreign body sensation, airway obstruction^{8,15} rarely. Infection can occur in 10% of cases called laryngopyocoele and it rarely causes death due to aspiration of infective content⁷. There is association between laryngocoele and laryngeal carcinoma and reported incidence varies between 5 -19%^{6,9,12,13,19}. Supraglottic squamous cell carcinoma is most commonly associated with laryngocoele¹³. Hence carcinoma must be ruled out if laryngocoele is detected clinically or radiologically^{10,11}. However, X-ray neck in anteroposterior and lateral view especially with Valsalva manoeuvre are helpful. CT scan has proved to be most accurate in defining its extent, type, differentiating it from cystic formation and identifying co existing laryngeal cancer and other disease^{6,11,13,15,17,19}. MRI is also useful. Treatment options include surgery for external and mixed laryngocoele¹² and endoscopic marsupialisation with CO2 laser for internal laryngocoele^{12,13,14}. External cervical approach without tracheostomy is now recommended treatment for mixed laryngocoele^{12,13}.

4. Conclusion

Despite laryngocoele being a benign disease, it can cause respiratory distress due to secondary infection and aspiration of infected contents in adults that may threaten patient's life as in our case. Secondly, benign laryngocoele harbours squamous cell carcinoma in 15% of cases so proper diagnosis with CT scan neck may avoid these life threatening emergency conditions. In our case laryngocoele presented as acute airway obstruction with no evidence of malignancy and was treated successfully with surgery without the need for tracheostomy.

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