MIXED LARYNGOCELE: CASE REPORT
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Abstract

This is a case report of a mixed laryngocele presenting with dysphonia and neck tension. Patient underwent laser excision of the internal component of the laryngocele under suspension micro-laryngoscopy. Diligent intubation and airway manipulation are crucial in preempting inadvertent laryngeal complication.

Key words: Laryngocele, anesthesia, intubation, laser excision

Introduction

Laryngoceles, first described by Virchow in 1867, are abnormal air filled dilatations of the laryngeal saccule that communicate with the lumen of the larynx¹. They commonly present in the fifth or sixth decades of life with male predilection in a 5:1 ratio²⁻³. Classically, laryngoceles are classified into three types according to anatomical location; Internal laryngoceles which remain within the larynx, external laryngoceles which extend laterally through the thyrohyoid membrane and the mixed laryngoceles which are the most common type occurring in 44% of the cases⁴⁻⁵.

In general, laryngoceles may present with dysphonia, dysphagia, foreign body sensation, stridor, sleep apnea, neck pain and tightness or swelling. The symptoms depend largely on the subtype of the laryngocele, its size and location. External laryngoceles present as neck masses that grow and decrease in size according to the amount of air in the saccule. On the other hand, internal laryngoceles usually present with signs of supraglottic constriction and medialization of the false cord. Moreover, internal laryngoceles can invade the airway by extending superiorly into the aryepiglottic fold. Fluid-filled laryngoceles may rapidly enlarge in size causing upper airway obstruction. In such severe cases, priority must be given to secure the threatened airway which may necessitate emergency intubation or cricothyroidotomy⁶. To that end, diligent collaboration between the anesthesiologist and the treating physician is critical in securing the airway and preventing inadvertent complications.

The authors of this manuscript are reporting a case of mixed laryngocele that presented with internal laryngeal fullness that was managed by endoscopic laser excision.

Case

This is the case of a 47-year-old gentleman smoker 40-pack-year who presented with symptoms of hoarseness, neck pain and tension, and dyspnea of few years duration. On perceptual evaluation, he had moderate dysphonia Grade-2 with straining and breathiness. Laryngeal endo-stroboscopic examination with 70-degree telescope (Kay-Pentax RLS9100) revealed glottic insufficiency...
with muscle tension pattern mediolateral and anteroposterior. Contrast enhanced computed tomography of the neck was requested in order to rule out any laryngeal or extra-laryngeal pathology and revealed an air filled mixed internal and external right laryngocele. The nasopharyngeal mucosa, parotid, thyroid, infra-temporal, para-pharyngeal, submandibular and carotid spaces were normal (see Fig.).

Patient underwent endoscopic laser excision of the right internal component of the laryngocele. Under suspension microlaryngoscopy, the laryngeal lumen was exposed and the right supraglottic fullness was palpated. The overlying laryngeal mucosa was excised using the CO2 laser power 4-5 watts super-pulse mode to expose the sac of the internal laryngocele. Using both blunt dissection and laser, the sac was dissected and excised at its apex while controlling hemostasis.

**Discussion**

The diagnosis of laryngoceles is mostly clinical. Radiologic imaging using Plain radiographs, computed tomography or magnetic resonance is often requested to confirm the diagnosis and rule out concomitant laryngeal pathology. As previously mentioned, laryngoceles can cause airway compromise due to their expansile, cystic, and elastic features which renders the airway management a challenge. The main challenge is to induce anesthesia and achieve a successful intubation without compromising the airway. Supine surgical position and mask ventilation can cause laryngoceles, being a highly mobile structure, to expand multiple times in size reaching the tongue base and complicating the induction phase of anesthesia prior to tracheal intubation. Onder et al reported the case of a 67 year old male who presented with dyspnea, cough, sleep apnea, and hoarseness over 6 months and was found to have a left mobile pedunculated cystic mass in the supraglottic region obstructing laryngeal inlet. Upon starting mask ventilation in the supine position, the mobile structure inflated and moved cranially towards the oropharynx. Endotracheal intubation was done under endoscopic guidance using a guide wire along with a laryngoscope and a tracheotomy was successfully avoided.

To that end awake fiberoptic intubation is viable alternative technique to intubation in the management of difficult airway and deep neck space infections. Another technique would be to needle aspirate the cyst to reduce its mass prior to anesthesia when dealing with large laryngoceles. However, patient agitation and high anxiety index may hinder such a procedure. One of the important points in directing the airway management regimen is whether serious edema is expected or not postop. Usually, cystic lesions that are localized tend to cause less edema and the excision of the obstructing mass would relieve the laryngeal airway. Another important point to take into consideration is the level of expertise of the anesthesiologist which is critical when choosing more elaborate techniques for obstructed and hardly visible airway passages.
References
