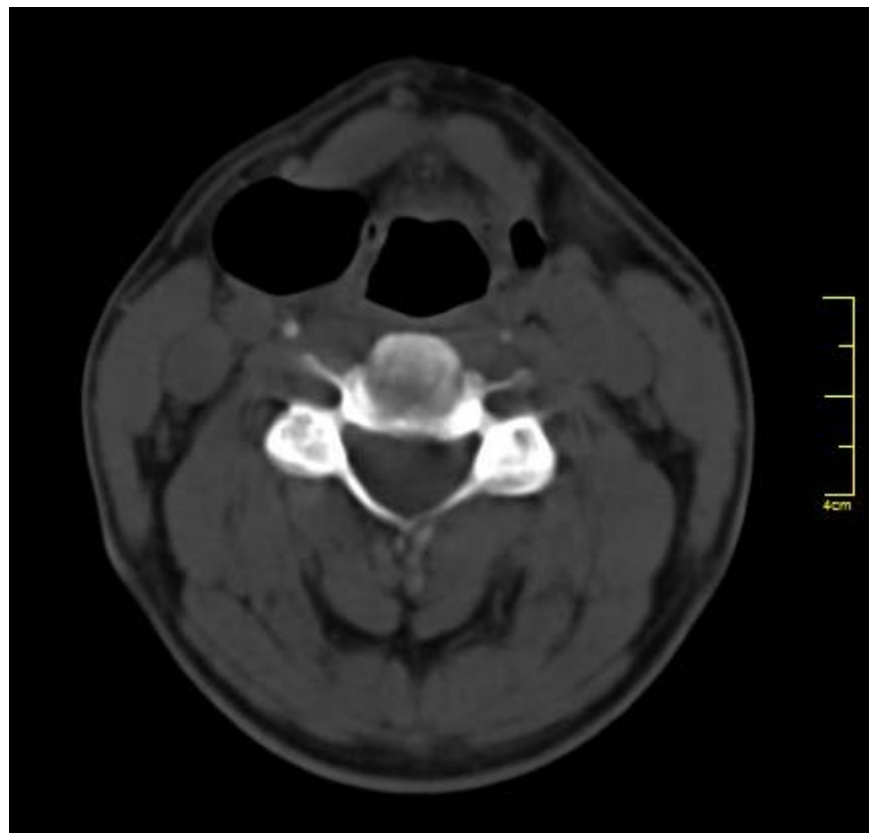


Bilateral laryngocele - the unusual finding

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Introduction: Laryngoceles usually present as cervical masses with or without voice changes. They are mostly unilateral, often are asymptomatic and are thought to be an occupational disease among wind instrument players or glass blowers. Laryngoceles can also occur in association with neoplasms of the larynx.



Clinical case: We report a case of a 52 year old male scuba diver with bilateral laryngocele who had bilateral neck swelling, predominantly on the left. On Valsava maneuver it increased slightly. By palpation were found bilateral smooth nontender masses without crepitation. Indirect laryngoscopy and fibrolaryngoscopy were normal. The CT scan showed a right sided bulla, measuring 3.5x2.2cm at the level of the hyoid, displacing the soft tissues and connected to the right vallecula. It prominated laterally, reaching the subcutaneous tissues and was limited by superficial cervical fascia and platysma muscle. A similar finding was present at the left side. It had smaller dimensions (up to 1cm) and was connected to the left vallecula.

It was noticeable that the normal air bearing cavities – vestibulum and cavum laryngis were dilated and slightly distorted, probably due to airway hypertension at that level. After stopping of the diving, the size of the laryngocele decreased and the swelling disappeared. In this case was taken the decision for active observation.

Discussion: Larrey, a surgeon in Napoleon’s army first described an air-filled neck tumor in 1829. Virchow introduced the term laryngocele in 1887. Laryngocele is an air-filled herniation of the sacculus which communicates with the lumen of the larynx. It is usually diagnosed when symptoms arise, swelling can be palpated, changes are seen by laryngoscopy or an air-filled sac is shown on radiograph or CT.

The etiology of laryngoceles has been discussed a lot. Negus believed that laryngoceles are atavistic phenomenon. Many investigators state that congenital weakness or defect can be predisposing, but habitual factors lead to laryngocele formation. Factors that increase intraglottic pressure such as professional trumpet playing, glass blowing, singing, straining at stools, weight lifting and laryngeal carcinoma are thought to cause laryngoceles. Straining during expiration causes closure of false cords and contraction of laryngeal sphincters (thyroarytenoid, thyroepiglottic and aryepiglottic muscles). The true cords also close but their tension is not sufficient to stop the escape of air. This causes increase of pressure in the ventricle and sacculus and may lead to laryngocele formation in predispositioned cases [5]. Our patient was a scuba diver and had increased expiratory pressure against the oxygen mask.

Most authors classify laryngoceles into three types – internal, located inside the thyrohyoid membrane; external, dissecting superiorly through the thyrohyoid membrane into the subcutaneous tissues of the neck, and combined or mixed containing both parts.

Hubbard found that the most common type was the mixed laryngocele (44%), followed by internal (30%) and external (26%). Bilateral laryngoceles were found in 23%. Male to female ratio was 7:1. Age incidence is reported to be the maximal in the 6th decade. Macfie claims that all external laryngoceles must have internal component.

The two most common symptoms are voice hoarseness and neck swelling. Swelling is palpable superior and lateral to the thyroid lamina in external laryngoceles and increases in size with Valsalva’s manoeuver. On compression the swelling becomes smaller and a hissing or gurgling noise may be heard as air escapes endolaryngeally. This is the so called Bryce’s sign.

The diagnosis of laryngocele can be done clinically. Plain radiographs in antero-posterior and lateral views may be helpful, especially if Valsalva maneuver is performed.

Computed tomography provides definitive diagnosis. MRI, which provides high definition of soft tissues, offers detailed information of the boundaries of the air-filled sac and its relation to the thyrohyoid membrane, distinguishing the internal from the external or the mixed components of this cyst. Sometimes the cyst may be filled with mucous or may form an abscess (laryngomucocoele or laryngopyocoele) and MRI may distinguish obstructed mucous and inflammation from neoplastic disease.

Ultrasound characteristics of laryngoceles have been studied in detail. Internal laryngoceles have been described to be echo-free, well-defined structures inside the thyroid cartilage.

Combined laryngoceles have an additional cystic mass outside the laryngeal skeleton and the thyrohyoid membrane. Characteristically, this cystic mass has been described to be connected through the thyrohyoid membrane to an intra-laryngeal formation.

Surgical excision through external approach is described as the only effective treatment for symptomatic and complicated laryngoceles. Conservative management is recommended for the asymptomatic ones.

The cervical approach employed for treatment of external laryngoceles can disrupt the normal function of the strap muscles that are important for tone generation and therefore surgery in asymptomatic young musicians is to be deferred, as it would hamper the performer’s musical career. Surgical excision by means of LASER has been employed in centers where Laser equipment is available.

The laryngocele of our patient was asymptomatic and resolved spontaneously after cessation of diving, so we decided to leave him on active observation.

Conclusion: Detailed history taking including occupational and personal history is essential pre requisites for the correct diagnosis and treatment of laryngocele. Bilateral laryngoceles are extremely rare but must be considered in the differential diagnosis of neck masses. They can be managed surgically or left untreated if asymptomatic, but it should be remembered that sometimes they can be prone to malignant transformation.

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