CASE REPORT

Mixed laryngocele: a case report and review of the literature

Laringocele misto: case report e revisione della letteratura

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SUMMARY

Laryngocele is a rare, benign dilatation of the laryngeal saccule that may extend internally into the airway or externally through the thyrohyoid membrane. Many laryngoceles are asymptomatic; sometimes they may cause a cough, hoarseness, stridor, sore throat and may present as a swelling on one or both sides of the neck. Laryngocele may be associated with supraglottic squamous cell carcinoma. Computed tomography scan is the most effective imaging method for diagnosis. Surgery is the treatment of choice. A case of large mixed laryngocele in a 75-year-old male is described together with surgical management and follow-up. A review of the literature is also presented.

KEY WORDS: Larynx • Laryngocele • Professional diseases • Surgical treatment

RIASSUNTO

Il laringocele è una rara e benigna dilatazione dell'appendice del ventricolo di Morgagni che può svilupparsi internamente nel lume laringeo o esternamente attraverso la membrana tiroidea. Molti laringoceli sono asintomatici; qualche volta possono causare tosse, disfonia, stridore, mal di gola e presentarsi come una tumefazione a uno o entrambi i lati del collo. Il laringocele può associarsi al carcinoma spinocellulare sovraglottico. La tomografia computerizzata è l'indagine radiologica più utile per la diagnosi; la chirurgia è l'opzione terapeutica di scelta. Gli Autori descrivono il caso di un grosso laringocele misto in un uomo di 75 anni, il trattamento effettuato e il follow-up post-operatorio. Inoltre si effettua una revisione della letteratura.

PAROLE CHIAVE: *Laringe • Laringocele • Malattie professionali • Terapia chirurgica*

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Case report

The patient B.D.G., a 75-year-old male had been suffering from hoarseness for approximately 5 years. Over the last month, he had been suffering from dyspnoea on exertion and, in the last few days even when at rest.

The patient also suffered from hypertension, chronic atrial fibrillation, emphysema and chronical bronchitis; despite these problems, he managed a mixed farm with crops and livestock.

On examination, he was found to have a painless soft mass at the right side of the neck, about 5 cm in size, conducting vibration during speech, manually reducible, covered with normal skin (Fig. 1).

Fibrolaryngoscopy showed a supraglottic mass covered with normal mucosa, extending into airways from the right wall of hypopharynx (Fig. 2).

A computed tomography (CT) scan showed a large mixed internal and external laryngocele without regional lymphadenopathy (Fig. 3).

The patient had a CT scan about five years before. Surgical resection of the laryngocele had previously been deferred at the request of the patient who now agreed to undergo surgery in our Department and resection of the laryngocele was performed by the external lateral cervical approach. Post-operative recovery was uneventful.

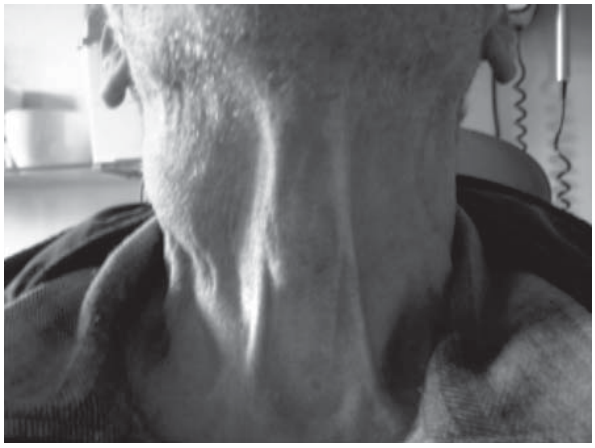

Fig. 1. Patient with soft swelling approximately 5 cm in diameter located in latero-cervical area, decreasing upon palpation.

The patient was discharged from hospital 7 days after surgery in good health.

Swallowing of semisolid food was normal.

The final histological diagnosis of the specimen was laryngocele.

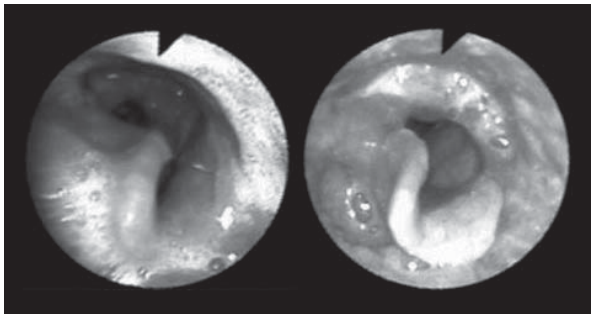

Fig. 2. Flexible pre- and post-operative fibro-endoscopic assessment.

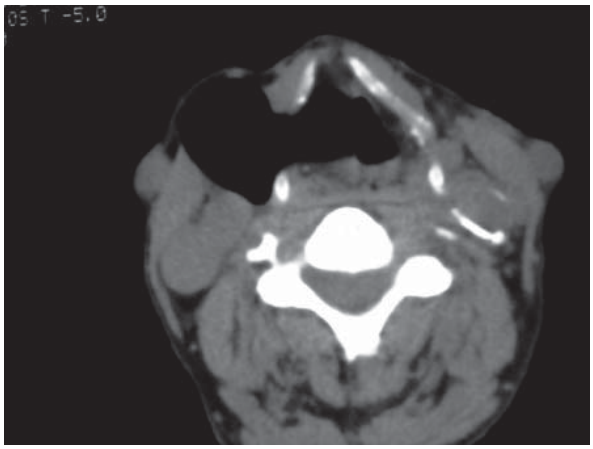

Fig. 3. Computed tomography image of patient's neck: extended gaseous right laryngocele located on soft parts of neck.

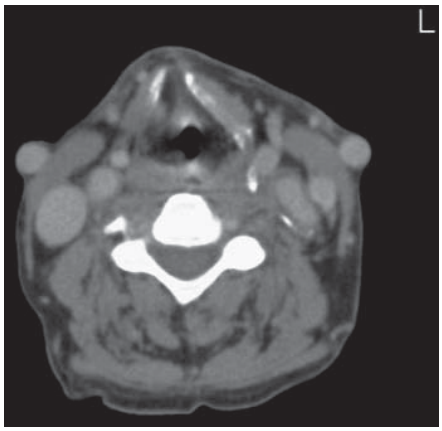

Fig. 4. Post-operative CT revealing disappearance of gaseous laryngeal mass.

Post-operative CT 4 months after surgery, showed complete removal of the laryngocele (Fig. 4). The larynx and the other neck structures were normal.
The patient remains free from disease.

Review of the literature

Laryngocele, an abnormal cystic dilatation of the laryngeal saccule [1-5], is uncommon [2 4-6], usually benign [7] and may occur in up to 5% of benign laryngeal lesions [4].
The aetiology is unknown and unclear [3], but there is an interrelation between a congenital predisposition – represented by a large ventricular appendix [8], for example, a congenital laryngocele which causes respiratory distress in a newborn [9] – and other post-natal acquired factors, for instance, laryngeal papillomatosis in a child [8].
An acquired laryngocele may develop when the laryngeal ventricle becomes functionally obstructed as a result of an increase in intra-glottic pressure, such as that caused by excessive coughing, playing a wind instrument, glass blowing [2-5], after performing Valsalva manoeuvre [10] or using ventricular phonation during speech [2].
Laryngoceles may extend internally into the airway or externally through the thyrohyoid membrane [2], so they may present as internal, external or combined mixed internal and external laryngocele [11-19], unilateral uncommon [2 3 6 11 20], or bilateral rare [1 2 12 15 21].
Laryngocele may be asymptomatic and incidentally discovered through radiographic studies for unrelated symptoms [1 4 5].
The main symptoms, at presentation, are: airway obstruction [5 7 9 13 16-18], increasing stridor [4 9 14], hoarseness [4 14-20], sore throat, cough, pain, snoring, globus sensation [4] or a visible or palpable mass in the neck [9 10 15 16 19 20].
Serious forms of clinical emergency requiring tracheotomy may occur [5 7 12 16].
There is a rare, but well-documented, association of laryngocele with laryngeal carcinoma [1 11 15 17 20-23]. Therefore, if a laryngocele is detected clinically or radiologically, a carcinoma must be taken into consideration and appropriate tests be performed [12 22 23].
Supraglottic carcinoma is the most common laryngeal tumour [17].
Fewer reports have appeared concerning the coexistence with other laryngeal diseases, for example, papillomatosis in children [8], amyloidosis [6], rheumatoid arthritis [3], oncocytic cysts [21].
CT scan has proved to be the most accurate imaging method in defining the spatial relationship between the laryngocele and the laryngeal structures and extra-laryngeal soft tissues, in differentiating the laryngocele from other cystic formations and in identifying the coexistence of a laryngeal cancer [1 6 9 14 15 17 23].
Magnetic resonance imaging may be also useful [6 14 20].
Options in the management of laryngoceles include observation, endoscopic resection and resection via an external approach [24].
Surgery is the treatment of choice [15].
Endoscopic marsupialization with CO_2 laser is frequently used to remove small internal laryngoceles [7 15-17 19].
According to some Authors, the external cervical approach, without tracheotomy, allows good exposure of the lesion with minimal functional disability [15 17 18]. It is recommended for the mixed and external laryngoceles [12 13 17].
Careful dissection of the neck, in the case of an external laryngocele sac, is important to prevent damage to the neurovascular bundle which penetrates the thyrohyoid membrane at the site of penetration of the external laryngocele [13].

Conclusion

Laryngocele is a rare benign laryngeal disease which is often asymptomatic.
The diagnosis may be incidentally discovered when the pa-

tient undergoes a CT scan for a nagging cough or persistent hoarseness.
In our opinion, the present case is of particular interest since the patient was affected by a large laryngocele unrelated to his profession.
It is mandatory, in any patient presenting with a soft cervical mass, even if not a wind instrument player or a glass blower, to exclude the possibility of a laryngocele.
In fact, the patient described had no predisposing factors for laryngocele although he presented increased intra-glottic pressure due to chronic bronchitis and emphysema.
In the present case, laryngocele was not associated with laryngeal cancer, but it is most important to remember and to consider the possibility of this association.
An external cervical approach to laryngocele gave adequate exposure of the lesion; post-operative recovery was free from complications.
In our opinion, endoscopic laser treatment would not have permitted complete excision of this large and mixed (external and internal) lesion.

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