Excision of Laryngocele via Transcervical Midline Approach

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ABSTRACT

Acute airway obstruction in the adult can be caused by a rapidly enlarging laryngeal cyst that may present unusually as a midline neck mass. In this case report we present a different surgical technique for the removal of a large combined laryngocele via midline transcervical approach that did not require laryngofissure. This technique allowed simple and fast access, excellent exposure and complete removal of the lesion without resection of thyroid cartilage or associated morbidities.

CASE REPORT

An 80 year old man presented to the emergency room for evaluation of dysphagia and weight loss of 2-months duration. Physical examination revealed an anterior infrathyroid neck mass. Fiberoptic laryngoscopy revealed a submucosal mass involving the left aryepiglottic fold and lateral epiglottis with partial laryngeal obstruction. (Figure 1) Computed tomography scan demonstrated a large cystic structure in the pre-epiglottic space with superficial extension through the thyrohyoid notch and extension into the left paraglottic space. (Fig. 2-5) The patient underwent an awake tracheotomy and transcervical needle decompression revealing frank purulent material. The diagnosis of laryngopyocele was made and the patient underwent a course of broad-spectrum antibiotics with subsequent resolution of infection. Eight weeks later the patient underwent elective excision of the laryngeal cyst via midline transcervical approach with elements similar to the Sistrunk procedure. The cyst was approached via a transverse incision in the skin crease of the anterior neck overlying the cyst. After elevation of subplatysmal flaps, the strap muscles were divided and retracted laterally. The superior aspect of the cyst was noted to be adherent to the mid-portion of the hyoid bone and the inferior aspect was adherent to the cartilage of the thyroid notch. (Fig. 6) After the midportion of the hyoid bone was transected and retracted anteriorly, the portion of the cyst occupying pre-epiglottic and left paraglottic space was identified. Blunt finger dissection was then used to separate this portion of the cyst from the surrounding tissues and the specimen was delivered en bloc from the paraglottic space. Resection of thyroid cartilage was not required, and the laryngeal mucosa remained intact. (Fig. 7-8)

Pathological examination was consistent with combined laryngocele with histiocytic reaction without evidence of malignancy. Thyroglossal duct cyst was considered in the differential diagnosis but refuted by the histologic examination. The patient subsequently underwent decannulation and has remained asymptomatic.

DISCUSSION

The laryngeal ventricle is the space limited inferiorly by the true vocal fold and superiorly by the ventricular fold. A pouch arising from the anterior aspect of the ventricle and extending superiorly between false vocal cord and the inner aspect of thyroid cartilage is called a saccule. A saccule contains mucous glands that lubricate the surface of the vocal folds. A laryngocele is defined as an abnormal dilatation of the saccule that communicates with the laryngeal lumen. Saccular cysts are rare congenital lesions of the larynx that lack communication with the laryngeal lumen. In addition saccular cysts do not contain air and are located in the submucosal plane. Laryngoceles are classified as internal, external and combined. Internal laryngoceles are medial to the thyrohyoid membrane, in contrast to the external laryngoceles, which protrude through the thyrohyoid membrane and extend into the neck. The mixed, or combined form, is composed of the internal and external types, with a thyrohyoid plate passing through the thyrohyoid membrane.

Histologically, laryngoceles are lined by pseudostratified columnar ciliated epithelium with occasional foci of stratified squamous epithelium and a mixture of submucosal serous and mucous glands. This composition distinguishes these lesions from laryngeal saccular cysts, which are lined entirely by squamous epithelium. In contrast to laryngoceles and saccular cysts, thyroglossal duct cysts are lined by either stratified squamous or ciliated pseudostratified columnar epithelium and may contain ectopic thyroid tissue in up to 62% of cases.

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