Intralaryngeal Ectopic Thyroid Tissue

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Intralaryngeal ectopic thyroid tissue (ETT) is rare. Its origin is not well understood, and several theories have been proposed to explain its existence.¹ It may present as a mass in the neck or at the base of tongue or may be an incidental finding on imaging. We present the case of a patient who, while undergoing evaluation for thyroid enlargement, was ultimately found to have intralaryngeal, subglottic ETT.

A 73-year-old woman noted a painless mass on the right side of her neck but denied any associated symptoms. Physical examination demonstrated mild right thyromegaly. Magnetic resonance imaging and computed tomography (CT) suggested direct extension of the thyroid into the airway, concerning for malignancy. Examination showed fully mobile vocal folds and a nonobstructing right subglottic submucosal mass (Figures 1 and 2) with a normal distal airway.

Operative laryngoscopy demonstrated a soft, ballotable subglottic mass situated on the right cricoid ring with no tracheal involvement. The lesion was excised in its entirety, with the underlying cricoid cartilage intact and no evidence of connection to the thyroid gland. Histopathology revealed respiratory and thyroid parenchyma with moderate mixed inflammation and stromal fibrosis, consistent with a distinct and benign focus of ETT. There was no evidence of malignant transformation. The patient has been followed for over 1 year and remains symptom-free with no signs of recurrence. A diagnosis of ETT was thus made.

The thyroid gland arises from the foramen cecum of the base of tongue, descending along the thyroglossal duct to position itself in the lower anterior neck.¹ During this process, thyroid tissue can migrate abnormally to other regions, resulting in the presence of ETT. Ectopic thyroid tissue is most commonly found at the base of tongue.²

Intralaryngotracheal ETT presents more commonly in women, and postmortem anatomical studies show that intralaryngeal and intratracheal ETT may be as common as 1 to 2 cases per 20 people.³ Multiple theories regarding the etiology of intralaryngeal ETT have been introduced. Bruns proposed that ETT represents a malformation of the embryonic tissue during migration along the thyroglossal tract—the malformation theory, whereas Paltauf proposed that the thyroid gland grows into the larynx—the ingrowth theory.⁴,⁵

Figure 1. Flexible laryngoscopic examination demonstrating a right submucosal laryngotracheal mass (arrow).

Figure 2. Flexible laryngoscopic view of subglottic larynx demonstrating right-sided mass.
Intralaryngeal ETT may present with slowly progressing dyspnea and can be misdiagnosed as asthma. On physical examination, ETT presents as a smooth, submucosal tumor, the differential diagnosis of which includes hemangioma, adenoid cystic carcinoma, chondrosarcoma, myoma, schwannoma, and squamous cell carcinoma, among others. Goiter is commonly seen among intralaryngotracheal ETT cases. Although this association could be diagnostically useful, the presence of thyromegaly could also be associated with malignant thyroid tumors with intralaryngotracheal invasion.

Magnetic resonance imaging and CT imaging have important roles in the diagnosis and management of laryngotracheal pathology. However, endoscopy may be more accurate in localizing the site and extent of disease, and biopsy and histopathology are imperative for diagnosis of ETT.

Intralaryngeal ETT can be managed satisfactorily through direct laryngoscopy and bronchoscopy, as seen in this case, or via laryngofissure for larger masses. Surgical extirpation for all patients with intralaryngeal ectopic thyroid, regardless of symptoms, has been proposed, in order to confirm and eradicate malignancy but also to prevent future symptoms that might occur from benign tissue hypertrophy.

Although exceedingly rare, intralaryngeal ETT should be considered in patients who present with a submucosal laryngotracheal mass, particularly with associated thyroid gland pathology.

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References
1. Waggoner LG III. Intralaryngeal intratracheal ectopic thyroid. Ann Otol Rhinol Laryngol. 1958;67(1):61-67.
2. Zatonski T, Bolanowski M, Jedrzejuk D, Zatonska K, Krecicki T. Intralaryngeal thyroid. Otolaryngol Pol. 2014;68(1):46-49.
3. Wegelin C. Zur Einstehung des Intralaryngotrachealen Kropfes. Schweiz Med Wehnschr. 1939:69:593.
4. Bruns P. Die Laryngotomie zur Entfernung intralaryngealer Neubildungen, Berlin, Germany: A. Hirschwald; 1878.
5. Paltauf R. Zieglers Beitr. Path Anat. 1892;11:71-89.