Ectopic Intratracheal Thyroid Causing Airway Obstruction

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OBJECTIVES:
A case report demonstrating the clinical presentation, diagnosis and surgical management of ectopic intratracheal thyroid.

INTRODUCTION:
Thyroid ectopia can be found at the site of thyroid origin in the floor of the mouth, or anywhere along its path of embryological descent, thus reflecting the normal migration of thyroid progenitor cells. The most frequent sites of ectopic thyroid tissue are lingual, sublingual, thyroglossal and laryngotracheal, with ectopic intratracheal thyroid (EITT) accounting for a small minority of these cases. EITT represents approximately 1% of all primary endotracheal tumors (1). First noted by Ziemssen in 1875, there have been at least 130 cases of EITT described (2). Most cases have been reported from the endemic goiter regions of the world, and commonly detected in the third to fifth decades of life (3,4). Approximately 75% of EITT are associated with orthotopic goiters (3,4).

Ectopically located intratracheal thyroid tissue may cause intratracheal goiter with potentially life-threatening airway obstruction. More commonly, infiltration of thyroid tissue within the trachea is a feature almost exclusively associated with a poor prognosis of differentiated thyroid carcinoma. This case illustrates a benign intratracheal thyroid lesion which appears to have invaded through the tracheal wall radiographically.

CASE REPORT:
A 48 year old male with remote history of total thyroidectomy for benign multinodular goiter presented with a several year history of periodic wheezing and dyspnea, gradually progressing to stridor. CT scan showed a right neck mass invading the tracheal lumen (Figure 3).

DISCUSSION:
Patients with EITT usually present with progressive dyspnea caused by obstruction of the tracheal lumen. This can be insidious in onset or can be intermittent, with cyclic exacerbations during menstruation and pregnancy (3). Diagnosis of EITT is frequently delayed as its symptoms are likely to be mistaken for asthma (3.5). EITT is usually accompanied by a normally functioning orthotopic thyroid, and therefore a euthyroid state.

Flow-volume loops on spirometry demonstrate the physiology of a fixed upper airway lesion (6). Radiographically, CT scan or MRI best characterize the configuration and size of the EITT and delineates any connection to the external thyroid gland. On endoscopy, EITT usually appears as a broad-based submucosal mass on the lateral subglottic and upper tracheal wall. The treatment of choice is surgical excision to relieve the obstructive lesion. Other less desirable options include medical therapy with radiodine ablation and thyroid hormone suppression (2).

The differential diagnosis for thyroid tissue within the trachea includes thyroid malignancy. However, Verburg et al (7) also describe a recurrent benign intratracheal goiter breaking though the tracheal wall. The cause of this breakdown of the tracheal wall is speculative. Our case similarly illustrates that intratracheal thyroid lesions that appear radiographically invasive need not always be malignant.

CONCLUSION:
EITT is a rare cause of upper airway obstruction. This condition is probably more common than is realized, but may remain unrecognized unless the tissue hypertrophies enough to cause symptoms. This can be treated successfully with endoscopic laser debulking.

REFERENCES: