The Unique Utility of EUS in Diagnosis of Substernal Retroesophageal Thyroid Masses

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Purpose

To Highlight The Unique Utility of EUS in Diagnosis of Substernal Retroesophageal Thyroid Masses

Case

A 58 year old female presented with stabbing chest pain, fatigue, and dysphagia of approximately 3 months. Cardiac work-up was negative. CT demonstrated a 3.5 x 2.1 cm mass in the left retroesophageal space of the superior mediastinum. Barium swallow revealed evidence of extrinsic compression on the upper esophagus at the level of the thoracic inlet. PET scan revealed hypermetabolic activity in the setting of an exophytic posterior thyroid nodule, with normal iodine thyroid uptake scan. EUS was performed with transesophageal FNA biopsy.

Results

A single oval mass lesion was found in the superior mediastinum with the echoendoscope positioned at 20cm from the incisors. The mass was hypoechoic and lobulated measuring 35mm by 30mm. FNA was preceded by color Doppler imaging to confirm a lack of significant vascular structures within the path of aspiration. Cytology revealed Hurthle Cell type hyperplastic thyroid tissue. The patient underwent a substernal total thyroidectomy to relieve her compressive symptoms from the large multi-nodular goiter and to definitively evaluate for malignancy given the abnormal cytology on EUS w/FNA. Final surgical pathology revealed multifocal stage III (T3N0M0) papillary thyroid carcinoma. The patient has been doing well since undergoing thyroidectomy.

Conclusion

Literature regarding thyroid cancer with extension of tissue in the retroesophageal region is quite rare. This very atypical anatomy presents a challenge in diagnosis via conventional approaches such as extracutaneous ultrasound guided biopsy. EUS allows for visualization and biopsy of substernal thyroid masses in retroesophageal and lateral distributions that would otherwise not be accessible by traditional methods.

Use of EUS guided FNA in superior mediastinal presenting thyroid masses was first reported only within this past decade, making it quite the novel tool in evaluation of such masses. This case serves as an added example to solidify the role of EUS in exploration of thyroid lesions that would otherwise pose a diagnostic dilemma, potentially eliminating the need for a higher risk surgical intervention.

References

