



Mediastinal ectopic thyroid tissue: a rare but important diagnosis

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We read with interest “*Surgical resection of mediastinal ectopic thyroid tissue: a case series*” by Motlaghzadeh *et al.* (1). The differential of mediastinal masses is broad—including thymomas, lymphomas, germ cell tumors, hemangiomas, lipomas, fibromas, intrathoracic thyroid tissue, metastasis and more. Intrathoracic thyroid tissue is most often contiguous with cervical thyroid tissue; however, approximately 2% of intrathoracic thyroid tissue develops as primary mediastinal ectopic thyroid tissue (ETT) (2). This manuscript discussed evaluating, identifying, and managing ETT.

The authors utilized the Stanford pathology database and searched for specimens labeled “ectopic thyroid”. Between 1996 and 2021, 202 patients were discovered, seven of which were classified as mediastinal ectopic thyroid. The rarity of this diagnosis is evident from the fact that in 25 years, in a busy academic center, there were only seven such cases. Notably, on initial presentation, six out of seven patients presented with compressive symptoms or symptoms of hyperthyroidism; one patient had an incidental finding of mediastinal lesion on computed tomography scan (CTS). There was inconsistency in the utilization of thyroid function tests; in the four patients with thyroid stimulating hormone levels drawn—all had normal thyroid stimulating hormone. One must keep this rare diagnosis in mind, and all patients being investigated for a mediastinal mass should have their thyroid function checked. All patients had CTS, and ETT location was divided utilizing the four-compartment model. The locations were mixed.

Three ETTs were found in the superior compartment, one in the anterior, one in the middle, and two in the posterior mediastinal compartment. Further radiologic workup was varied, with one patient receiving a thyroid uptake scan, one receiving a positron emission tomography (PET) scan, and one receiving a cervical magnetic resonance imaging (MRI). All patients underwent surgical resection with approaches varying by location. Two superior mediastinal lesions were resected through cervical approach, and the third through a sternotomy with concomitant valve replacement. The final four mediastinal ETTs were resected through the chest with robotic assistance or via posterolateral thoracotomy. None of the masses were contiguous with the cervical thyroid gland. On pathology, each mass was consistent with thyroid epithelium.

As previously emphasized, mediastinal ETT is a rare pathology. This case series further delineates that mediastinal ETT can have a diverse clinical presentation as well as anatomical location. Beyond consistent use of CTS for radiologic imaging, this case series demonstrated that further workup, location of the tumor, and surgical approach were far from standardized. Instead, each case was individualized. There is a rare phenomenon of malignant transformation in these ectopic glands, thus making a strong argument for surgical resection of these when found. None of the specimens in this series showed malignancy.

The authors recommend that ETT be considered in the differential for all mediastinal masses and that standardized workup through CT scanning, thyroid function tests, and

radioiodine testing should occur. They also suggest that these tests and definitive imaging of ETT could obviate surgical resection. A limitation of this study is that it reviewed a pathology database. Thus, no comparison or conclusions can be made for the management of a non-surgically treated patients from this case series. Further studies utilizing standardized workup of mediastinal masses would allow for potential guideline-directed therapy. A retrospective review of non-operative management of mediastinal ETT cases would help to determine the workup and radiographic characteristics that may suggest against operative intervention. Overall, this case series brings attention to the rarity of mediastinal ETT and the difficulty in creating guideline-directed evaluation and management of mediastinal ETT.

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