

Ectopic thyroid tissue presenting as a mediastinal mass: A Case Report

Mediastinal kitle olarak prezente olan ektoptik tiroid dokusu: Olgu Sunumu

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ABSTRACT

The presence of ectopic thyroid tissue in the mediastinum is a rare entity, accounting for approximately 1% of cases of ectopic thyroid tissue in adults. When detected, it typically presents as a mediastinal mass. Following the differential diagnosis, the primary treatment is surgery. In this case report, a female patient with complaints of back pain and shortness of breath was evaluated, and following examinations, mediastinal ectopic thyroid tissue was identified as the preliminary diagnosis. The patient underwent thyroid lobectomy and mediastinal mass excision. The aim of this case report is to discuss the diagnosis and treatment of mediastinal ectopic thyroid tissue.

Keywords: Ectopic thyroid, mediasten, mass.

ÖZ

Mediastende ektoptik tiroid dokusunun varlığı nadir bir durumdur ve yetişkinlerde ektoptik tiroid dokusu vakalarının yaklaşık %1'ini oluşturur. Tespit edildiğinde, tipik olarak mediastinal bir kitle olarak ortaya çıkar. Ayırıcı tanıyı takiben, birincil tedavi cerrahidir. Sunulacak vakada sırt ağrısı ve nefes darlığı şikayetleri olan bir kadın hasta değerlendirilmiş ve yapılan tetkikler sonrasında ön tanı olarak mediastinal ektoptik tiroid dokusu tespit edilmiştir. Hastaya tiroid lobektomi ve mediastinal kitle eksizyonu uygulandı. Bu olgu sunumunun amacı mediastinal ektoptik tiroid dokusunun tanı ve tedavisini tartışmaktır.

Anahtar Kelimeler: Ektoptik tiroid, mediasten, kitle

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INTRODUCTION

Ectopic thyroid tissue is defined as thyroid tissue that is not located anterolateral to the second to fourth tracheal cartilages, which is its normal anatomical position. Anatomically, ectopic thyroid tissue can be located in areas such as the tongue, sublingual area, and anterior larynx. (1) Mediastinal ectopic thyroid tissue is a rare pathology with an

incidence of 1%. (2) Surgical intervention is the treatment of choice; however, it is essential to first differentiate mediastinal ectopic thyroid tissue from other mediastinal masses during the diagnostic process. In the case presented in the article, a mediastinal mass was initially detected and, through

differential diagnosis, identified as ectopic thyroid tissue. Subsequently, a treatment plan was made.

CASE REPORT

A 40-year-old female patient was admitted to the outpatient clinic with complaints of shortness of breath, and back and neck pain in May 2024. The

patient's past medical history, family history and laboratory tests were unremarkable. Based on the PA chest X-ray (Figure 1), neck ultrasonography, and thorax CT (Figure 2 and 3) performed at a different medical institution before the patient presented to our hospital, a mediastinal malignancy, approximately 8x7 cm in size, was the primary consideration.



Figure 1. Mediastinal mass on preoperative chest X-ray

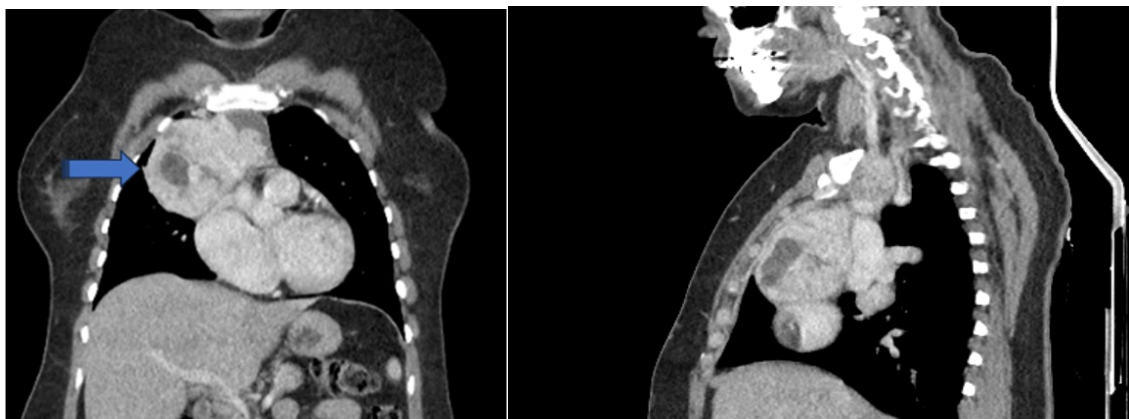


Figure 2-3. CT image of mediastinal ectopic thyroid tissue not associated with thyroid tissue.

Additionally, a 3 cm nodule was detected in the right thyroid lobe on ultrasonography. USG guided biopsy and PET-CT were performed. The

biopsy confirmed benign ectopic thyroid tissue in the mediastinum. However, due to persistent suspicion of malignancy on the PET-CT, the patient was referred

to another center for further evaluation. PET-CT results described the mass as a heterogeneous, necrotic, hypermetabolic lesion originating from the mediastinum. The mass, was approximately 9x7 cm. Surgical intervention was planned in collaboration with the thoracic surgery department. Due to a 3 cm

nodule in the right thyroid lobe, the patient underwent a right thyroid lobectomy. Additionally, a sternotomy was performed for the excision of the mediastinal mass. It was observed during the operation that the mediastinal mass was not connected to the thyroid tissue (Figure 4 and 5).

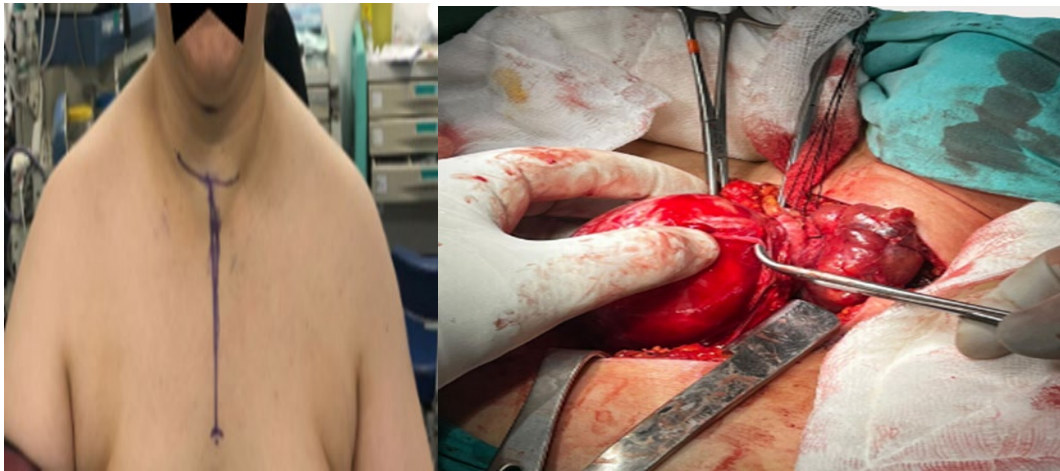


Figure 4-5. Thyroid right lobectomy and mediastinal mass excision performed through Kocher incision and sternotomy.

A frozen section of the mass removed during surgery confirmed it as thyroid tissue. On the

postoperative day 1, the chest X-ray showed the complete disappearance of the mass (Figure 6) .

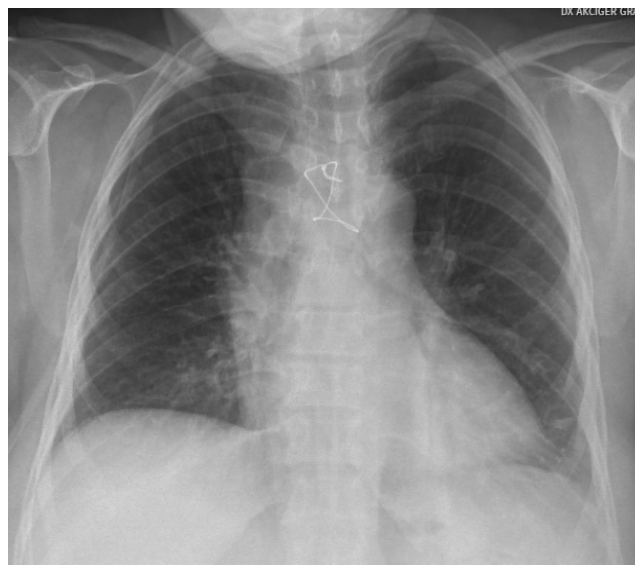


Figure 6. Postoperative chest X-ray

The patient was discharged on the postoperative day 4. Pathologic evaluation of the

mediastinal mass was consistent with multinodular ectopic thyroid hyperplasia.

DISCUSSION

Ectopic thyroid tissue (ETT) refers to thyroid tissue that is not situated in its normal anatomical location at the front of the neck, between the 2nd and 4th tracheal cartilages, at the level of the C5-T1 vertebrae, but is found in an alternate location. (1) It is observed in 1 in 100,000 to 300,000 adults. (2) Approximately 90% of ectopic thyroid tissues are located in the lingual area. However, it has also been reported to be seen in the submandibular region, adrenal glands, gallbladder, esophagus and mediastinum (3).

Mediastinal thyroid tissue constitutes approximately 1% of ectopic thyroid tissues (4-5). Less than 15 cases have been reported in the last 40 years. Mediastinal ectopic thyroid tissue has no connection with normal thyroid tissue and receives its blood supply from intrathoracic vascular structures (2-6). In the presented patient, it was also observed during surgery that there was no such connection with the normal thyroid tissue.

Mediastinal ectopic thyroid tissue is usually detected incidentally on imaging or during surgery (7). However, when the ectopic thyroid tissue becomes large enough to cause symptoms, it can lead to compression symptoms such as shortness of breath, cough, and back pain (8). In the patient presenting to our clinic, symptoms of cough and back pain were present, which were attributed to the size of the mass.

In diagnosing mediastinal ectopic thyroid tissue, the first step is to differentiate it from other mediastinal lesions. The most common mediastinal tumors are thymomas, germ cell tumors, lymphomas, neurogenic tumors, and benign cysts. If ectopic thyroid tissue is suspected, a neck ultrasound to assess the normal localization of the thyroid gland, and thyroid scintigraphy to identify ectopic tissue; should be conducted. Additionally, if clinically feasible, a biopsy of the mass is recommended (1-9). In the presented case, a neck ultrasound and CT scan had been performed. Additionally, due to the prominence of necrotic tissues and the suspicion of malignancy, a

PET-CT scan has been performed at a different medical institution. Malignancy could not be excluded by the PET result, and PET-CT was thought to have no contribution to the diagnosis.

In cases of mediastinal ectopic thyroid tissue, the patient may present as either euthyroid or hypothyroid. Yoon JS et al., noted that two-thirds of patients with ectopic thyroid tissues had hypothyroidism (10). In the presented patient, thyroid function test results were normal.

The treatment for ectopic thyroid tissue is surgical. The location of the mass and its relationship with surrounding structures on the CT scan are crucial for planning the surgical approach. While the thyroid tissue in the upper mediastinum can be excised only through a cervical approach, additional sternotomy is necessary for safer excision of the mass for thyroid tissues located lower. This approach not only alleviates the patient's symptoms in the early postoperative period but also reduces mortality(11). For the patient with mediastinal ectopic thyroid tissue, a cervicosternotomy was planned in collaboration with the thoracic surgery department due to the location of the mass and its proximity to neighboring organs. Due to the presence of a nodule in the right thyroid lobe, a right lobectomy was performed in addition to the excision of mediastinal ectopic thyroid tissue. The patient's complaints in the preoperative period had also dramatically regressed postoperatively.

CONCLUSION

Mediastinal ectopic thyroid tissue is a very rare pathology. In case of detection of a mediastinal mass, differential diagnosis is crucial as it significantly impacts the treatment plan and the surgical approach. When evaluating mediastinal masses for diagnostic purposes, ectopic thyroid tissue should also be considered.

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