



CASE REPORT

Mediastinal ectopic thyroid gland

Franklin de Souza Yamaguchi^{1*}, Caio Paschoalin Trindade²,
Sílvia Miguéis Picado Petrarolha³, Rogério Aparecido Deditivis^{1,3}

Abstract

Mediastinal ectopic thyroid are rare findings corresponding to about 1% of cases of ectopic thyroid, having a prevalence of 100,000-300,000 for healthy people. The case report corresponds to a patient whose finding of a deep and dipping nodule in the cervical region was occasional. After being submitted to cervical ultrasonography and computed tomography, the patient underwent resection of the ectopic thyroid, whose histology revealed foci of follicular hyperplasia and remnants of thymus, without atypia and with good outcome.

Keywords: mediastinal ectopic thyroid; mediastinal node; goiter; thyroid.

Introduction

Mediastinal ectopic thyroid corresponds to less than 1% of all cases of ectopic thyroid¹. Cases of mediastinal ectopic thyroid are rare findings results of defects in the migration of primitive thyroid into the embryogenic stage. This period occurs around the 24th day after fertilization. It descends attached to the thyroglossal duct by the floor of the primitive intestine to the anterior region of the neck, between the 2nd and 5th tracheal rings, where it is fixed around the seventh week².

The prevalence of thyroid ectopic tissue is between 1 in 100,000-300,000 people and increases to 1 in 4000-8000 patient with thyroid pathology¹. Approximately 90% of the ectopic thyroid tissues are found at the base of the tongue. Intratotoxic ectopic thyroid, however, have been reported in the mediastinum, lung and heart. In cases located in the mediastinum, normal tissues usually coexist and patients use to be euthyroid². The incidence of ectopic thyroid among patients with hypothyroidism is estimated from 1/4000 to 1/8000³.

Case report

A 48-year-old female patient had occasionally noticed a deep, dipping nodular lesion in the cervical region at the level of the anterior fossa, with caudal limits not established due to the mediastinal component. Ultrasonography of the cervical region revealed a hypoechoic nodule with gross calcifications and vascularization in the upper mediastinum, measuring 35 x 18 x 24mm; the thyroid was topical, of normal size and echogenicity and without the presence of nodules. Computed tomography of the mediastinum showed a mass of 35 x 24 x 19mm (Figure 1), compatible with ectopic thyroid tissue in the anterior superior mediastinum. The laboratory tests showed the thyroid hormone dosage within normal limits. Fine needle aspiration (FNAB) presented

¹Centro Universitário Lusíada (UNILUS), Faculdade de Ciências Médicas de Santos, SP, Brasil

²Hospital Ana Costa, Departamento Cirúrgico de Cabeça e Pescoço, Santos, SP, Brasil

³Hospital Ana Costa, Departamento Cirúrgico de Cabeça e Pescoço, Santos, SP, Brasil

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Figure 1. Mass in anterior superior mediastinum.

follicular pattern tissue, classified as Bethesda III (with microfollicular arrangements of thyroid cells) and the thyroglobulin dosage of the FNAB wash showed 171ng/mL. She underwent resection of the ectopic thyroid, with evidence of ectopic thyroid tissue, compatible with foci of follicular hyperplasia and remnants of thymus, without atypia. The mass did not have continuity or contiguity with the thyroid at intraoperative evaluation. The patient had a good evolution and, in laboratory control after one month, she remained in euthyroidism. The ultrasonography showed a homogeneous, normal volume thyroid.

Discussion

The thyroid gland originates as a proliferation of endodermal epithelial cells on the median surface of the developing pharyngeal floor. The gland then migrates to reach its final location immediately anterior to the trachea. The descent of the thyroid gland occurs anterior to the hyoid bone and anterior to the laryngeal cartilages. The thyroid completes its descent in the seventh gestational week. Presence of ectopic thyroid tissues in distant locations could happen as a result of abnormal migration or heterotopic differentiation of uncommitted endodermal cells⁴.

Ectopic thyroid tissue is formed due to aberrant migration of the thyroid gland as it descends from primitive foregut to the pretracheal region in the neck. Primary intrathoracic goiter can be described as thyroid tissue lacking the connection with the cervical thyroid, receiving its blood supply from intrathoracic vasculature. However, this condition originates from true ectopic thyroid tissue in <1% of cases. Intrathoracic goiter is often secondary from extension of the cervical portion of the thyroid gland. Clinically, mediastinal ectopic thyroid tissue is generally euthyroid and asymptomatic. However, it can present with airway compression, dry cough, dyspnea, and hemoptysis, thus necessitating operative intervention¹.

***Correspondence**

Franklin de Souza Yamaguchi
 Centro Universitário Lusíada (UNILUS),
 Faculdade de Ciências Médicas de
 Santos
 Av. Conselheiro Nébias, 444,
 16º andar, Encruzilhada
 CEP 11045-000, Santos (SP), Brasil
 Tel: (11) 97017-3793
 E-mail: frank_yamaguchi@Hotmail.
 com

Authors information

FSY - Student at the Faculty of Medical
 Sciences of Santos, Lusíada University
 Center UNILUS. CPT - Resident of
 the Head and Neck Surgery Service,
 Ana Costa Hospital. SMPP - Master
 of Science, School of Medicine,
 Universidade de São Paulo (USP);
 Assistant Surgeon, Department of
 Head and Neck Surgery, Ana Costa
 Hospital. RAD - Professor, Department
 of Surgery, School of Medicine,
 Universidade de São Paulo (USP); Full
 Professor of Surgery, Faculdade de
 Ciências Médicas de Santos, Centro
 Universitário Lusíada (UNILUS).

Differential diagnosis of ectopic mediastinal mass includes metastatic thyroid disease, lymphomas, neurogenic tumors, and thymic and mesenchymal tumors. As a differential diagnosis, the 4 "t" (thyroid, thymoma, teratoma and "terrible" lymphoma) are investigated by means of examinations such as computed tomography, scintigraphy with I¹²³, I¹³¹ or Tc^{99m} and biopsy. However, the absence of iodine in the tissue may be a sign of necrosis or carcinoma and does not exclude the presence of malignancy¹.

Our patient was euthyroid at presentation and did not have any symptoms related to a mediastinal mass such as dyspnea, cough, mediastinal obstruction or compression symptoms. There was no connection between the mediastinal mass and the normal glandular thyroid tissue. Thus, nodular hyperplasia originated from mediastinal ectopic thyroid tissue. The aspect of the ectopic thyroid is described in the computed tomography is of mass with homogeneous contrast uptake, usually without mass effect⁵, as also noticed in our case.

These masses should be resected surgically due to the risks of malignant transformation, progressive enlargement, hemorrhage within the mass causing respiratory failure and compression of neighboring vital mediastinal organs. If the patient decides to refuse the surgical treatment, frequent monitoring will be recommended in order to detect any early signs or symptoms of thyroid dysfunction or malignant transformation⁴.

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Thank you God, because the Lord is good and your love lasts forever.

References

1. Raji Y, Gupta S, Pucar D, Keshavamurthy JH. Ectopic thyroid: the great mimicker. *Lung India*. 2018;35(3):248-50. http://dx.doi.org/10.4103/lungindia.lungindia_141_17. PMID:29697084.
2. Guerra G, Cinelli M, Mesolella M, Tafuri D, Rocca A, Amato B, Rengo S, Testa D. Morphological, diagnostic and surgical features of ectopic thyroid gland: a review of literature. *Int J Surg*. 2014;12(1, Suppl 1):S3-11. <http://dx.doi.org/10.1016/j.ijso.2014.05.076>. PMID:24887357.
3. Guimarães MJAC, Valente CMS, Santos L, Baganha MF. Ectopic thyroid in the anterior mediastinum. *J Bras Pneumol*. 2009;35(4):383-7. <http://dx.doi.org/10.1590/S1806-37132009000400013>. PMID:19466277.
4. Abdel-Aal M, Scheer F, Andresen R. Case report: ectopic mediastinal thyroid tissue with a normally located thyroid gland. *Iran J Radiol*. 2015;12(1):1-4. PMID:25785182.
5. Kim DH, Kim DW, Shin GW, Lee YW, Cho YJ, Park JS, Ha TK, Park JS, Jung SJ, Ahn KJ, Moon SH. Nodular hyperplasia presenting as a mediastinal mass: three case reports. *Medicine (Baltimore)*. 2018;97(34):e12050. <http://dx.doi.org/10.1097/MD.00000000000012050>. PMID:30142857.