

Case Report

Heterotopic Mediastinal Thyroid: A Case Report

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Abstract: Heterotopy of the thyroid gland is very rare. It is characterized by the existence of an ectopic thyroid tissue in the presence of a normally localized thyroid. We report a case of heterotopic mediastinal thyroid in a 60-year-old woman who presented with swelling in the midline of the neck. Ultrasound of the neck showed a hypertrophic thyroid in its normal location associated with a similar lower cervical mass. A cervico-thoracic scan was subsequently requested for a better study.

Keywords: Heterotopic, thyroid, ectopic thyroid, sonography, CT-scan.

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INTRODUCTION

Thyroid heterotopia is an abnormal location of normal thyroid tissue coexisting with a normal organ and of normal location. It is a congenital anomaly due to a defect in the maturation of the thyroid tissues. It is distinguished from thyroid ectopia and thyroid cancer metastasis. The clinical manifestations are not specific, paraclinical investigations such as imaging are necessary. Ultrasound is very effective in the positive diagnosis; computed tomography and MRI play an important role in the pre-treatment assessment. The formal diagnosis is histological after biopsy or excision of the lesion.

CASE PRESENTATION

A sixty-year-old female presented with history of a midline neck swelling noticed about three months ago. A Local examination did not reveal any abnormality other than a palpable thyroid. Thyroid function test was normal (TSH : 3,2mUI/L ,T4 :1,6ng/dL , T3 :98ng/dL), Ultrasonography of the neck showed a heteronodular goiter with normally located thyroid gland(Fig.1) associated to an hypochoic and homogeneous mass at the inferior aspect of the neck(fig.2). A cervico-thoracic CT scan was subsequently requested for a better study which

showed a normally located hypertrophic thyroid gland with some nodules (fig.3), associated to a well-limited homogeneous hypodense mass at the anterosuperior mediastinal level, which reminds the structure of the thyroid(fig.4) and is enhanced in the same way as the thyroid parenchyma(fig.5) suggesting an ectopic thyroid tissue at the mediastinal level.



Figure 1: Ultrasonography of the neck showed a heteronodular goiter (star)

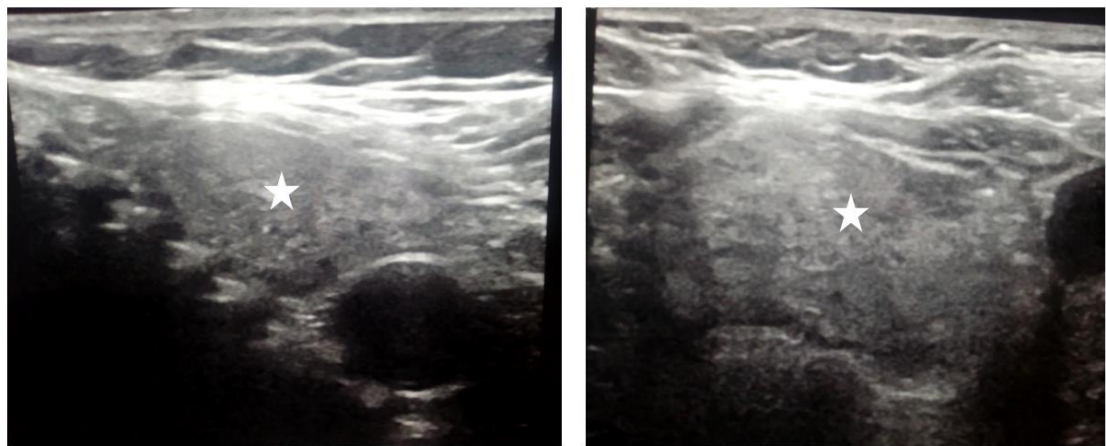


Figure 2: Hypoechoic and homogeneous mass at the inferior aspect of the neck (star)

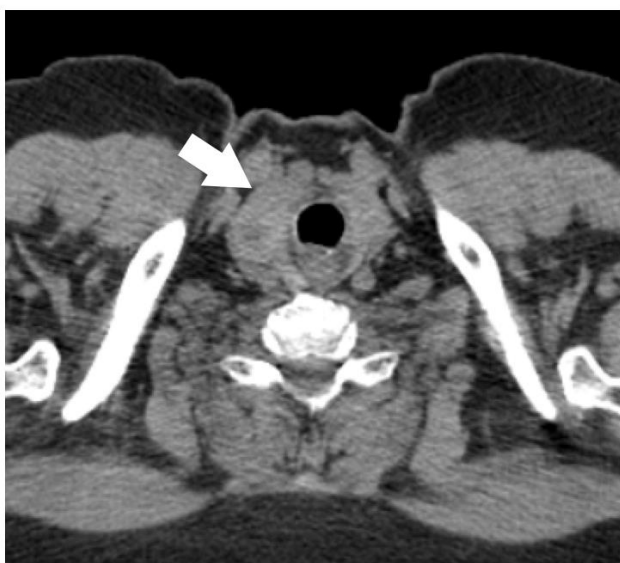


Figure 3: axial section at the cervical level: an hypertrophic gland thyroid normally located (arrow)

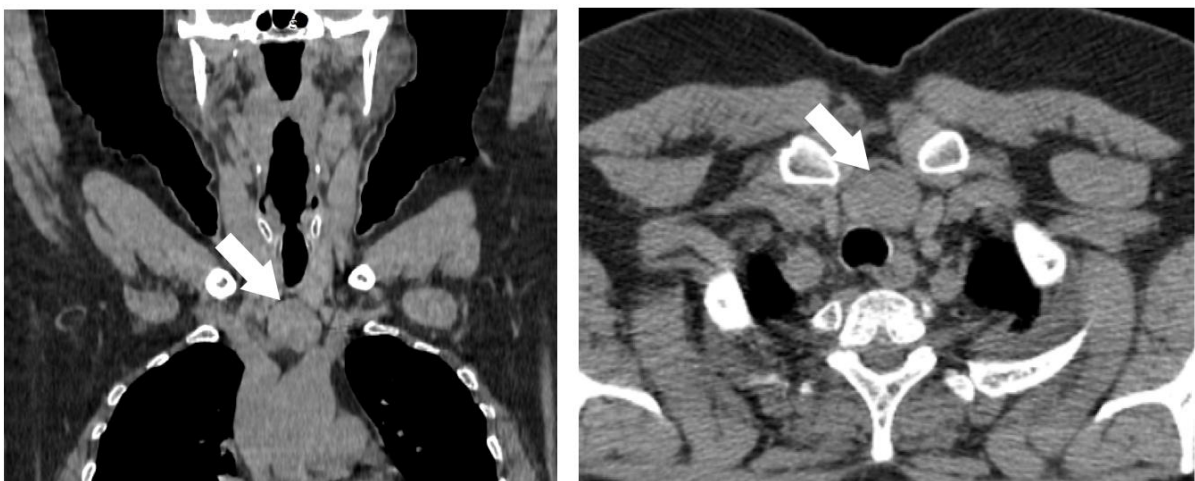


Figure 4: axial and coronal section at the cervicothoracic CT-scan: homogeneous hypodense mass at the anterosuperior mediastinal level (arrows)

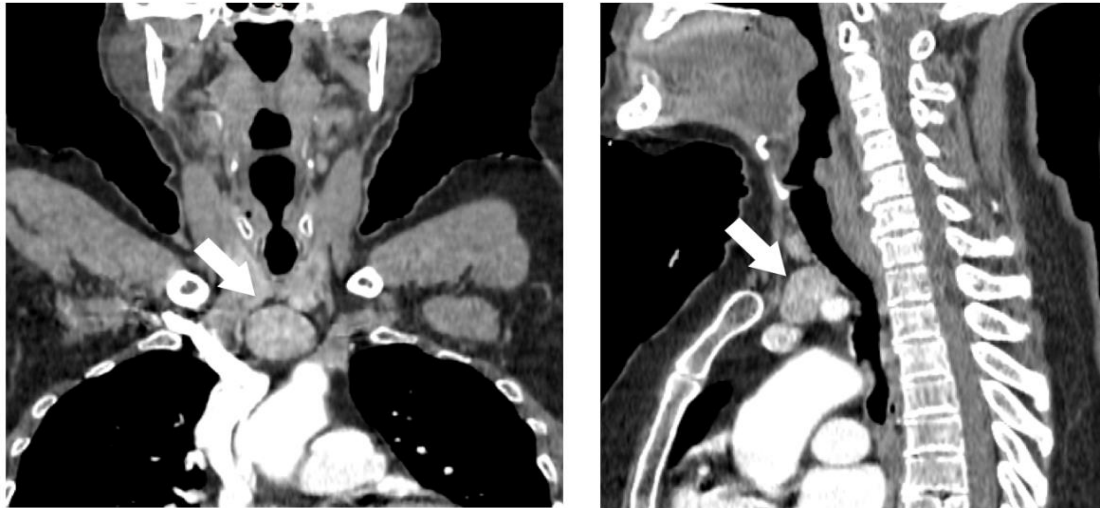


Figure 5: sagittal and coronal section at the cervicothoracic enhanced CT-scan: homogeneous mass at the anterosuperior mediastinal level (arrows)

DISCUSSION

Heterotopia is an abnormal localization of normal tissues coexisting with a normal organ and of normal localization that must be differentiated with cancer metastasis [1]. Heterotopia is due to abnormalities in the maturation of thyroid tissue. The age of diagnosis is dependent on the clinical manifestation.

The age of detection of ectopic thyroids ranges from 6 to 50 years as reported in the literature [1,2]. According to Cerulus, intra-thoracic goiters are most often seen in women over 45 years of age [2]. No race is spared by this disorder, but the yellow race is more affected by thyroid dysgenesis than the black race which is less affected. Thyroid heterotopia, on the other hand, is simple or compound tissue of thyroid origin that can be organized to constitute an entire organ anywhere in the body where it would not normally be found. Thyroid heterotopia can be located along the embryonic migration pathway of the thyroid. [2]. The most frequently reported site is the base of the tongue (90%), and the subhyoid locations. [2,3]. A few cases of extra-cervical heterotopias have been reported in the literature [1,2,3] (Fig.6).

The hormonal balance of heterotopias remains normal thanks to a normally located and functional gland, contrary to ectopias which are associated with a more or less important hypothyroidism. Functionally, the heterotopic gland can secrete hormones like a real thyroid gland.[4]. It is most often detected by incidental findings during a scintigraphy of a thyroid gland with functional disorders [1,4]. If the gland grows outwards, that is to say at the level of the wall, it appears as a simple swelling. Painful or not, the diagnosis during a

scintigraphy is difficult in front of an aberrant hypofixing or non-functional tissue. Ultrasound makes it possible to distinguish the tissue or cystic appearance of the gland. The sensitivity of ultrasound in the diagnosis of masses and nodules of the soft parts of the neck is high, so it remains the first-line examination. The diagnosis of secondary locations of normal or abnormal thyroid tissue is made by scintigraphy [5]. Technetium-99m or better, iodine-124 scintigraphy allows the demonstration of hyperfixation outside the normal thyroid compartment. The latter remains the gold standard in terms of sensitivity and specificity. [3,5].

Computed tomography (CT) appreciates the density of the mass, its limits, its seat and its relationship with the vascular axe (fig.7). MRI, in T1 spin-echo sequences (without and with injection of gadolinium) and T2 in at least two perpendicular planes, makes it possible to explore the mass in its long axis, to identify a possible tumor vascular contingent, to detect the perineural extensions as well as to precisely locate the connections to the vascular axes [5,6,7](fig.8). Pathological examination of a biopsy or surgical piece confirms the thyroid origin of the lesion and allows the elimination of a thyroid cancer metastasis. Intra-thoracic or intra-abdominal lesions may be discovered incidentally during laparotomy, thoracotomy or autopsy [8]. Although the literature is not unanimous on the treatment of cases of thyroid heterotopia, some authors have recommended a wait-and-see attitude towards pediatric subjects with these conditions [7,8]. Surgery is an alternative recommended by some authors when the ectopic tissue becomes tumoral [8].

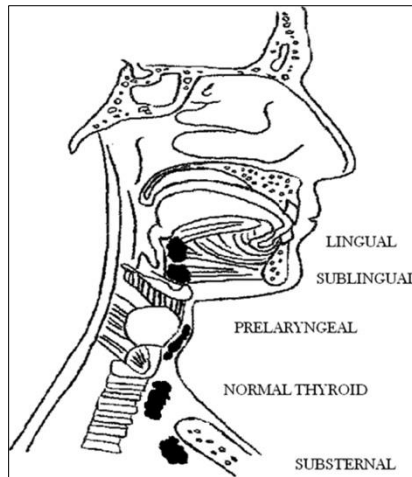


Figure 6: Distribution of heterotopic thyroid tissue

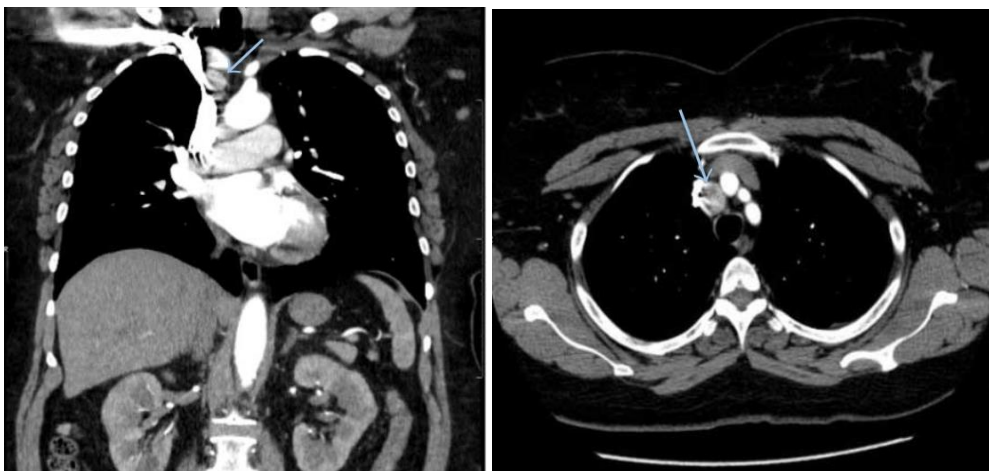


Figure 7: chest CT scan injected mediastinal window in axial and coronal sections showing a right paratracheal mass enhanced after injection of PDC related to thyroid heterotopia

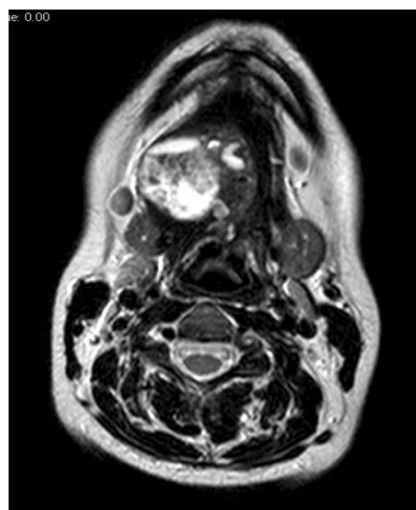


Figure 8: Axial T2-weighted turbo spin echo unenhanced sequence without fat saturation shows a 4.5 × 4.0 × 3.7-cm hyperintense, rough oval formation suspected to contain mucus

CONCLUSION

Mediastinal thyroid heterotopia is rare, the clinical expression is variable depending on the neighboring organs compressed by the mass. The

diagnostic and therapeutic problem posed by this exceptional topography. Paraclinical investigations such as imaging are necessary. The thyroid origin of the mass is confirmed by histology.

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