Hyalinizing trabecular tumor of the thyroid gland: A case report and review of literature

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ABSTRACT

Objective: to study clinical, radiological and histological featuring, as well as the therapeutic management of Hyalinizing trabecular tumor (HTT) of the thyroid gland.
Observation: She was a 60 year -old female with a history of left thyroid lobectomy in 2001, who presented to our department with multiple right lobe nodules. The most suspected nodule was scored IV in EU-TIRADS classification. The fine needle aspiration cytology were inconclusive according to Bethesda classification. The patient underwent totalization of thyroidectomy . Histology concluded to a hyalinizing trabecular tumor.
Conclusion: This unusual lesion is mostly benign nevertheless few malignant and metastatic cases have been reported. Therefore, diagnosis, treatment, and follow-up of this tumor should consider a possible malignant potential.
Key words: Trabecular adenoma, Hyaline Substance, Thyroid gland, Thyroidectomy,

INTRODUCTION

Hyalinizing trabecular tumor (HTT) is a rare follicular cell-derived tumor of the thyroid gland [1] . It was first described in 1987 by Careny et al as hyalinizing trabecular adenoma[2] .Since then, controversies concerning the classification of this entity have been arisen [3]. It is often misdiagnosed as papillary thyroid carcinoma, medullary thyroid carcinoma or paraganglioma. World health organization defines it in its recent classification of endocrine organs, as"a rare tumor of follicular cell origin with a trabecular pattern of growth and marked intratrabecular hyalinization[4].
The purpose of this paper was to study clinical, radiological and histological featuring, as well as the therapeutic management of Hyalinizing trabecular tumor (HTT) of the thyroid gland.

CASE REPORT:

A 60-year-old female with medical history of hypertension, diabetes, crohn's disease, and a left lobectomy in 2001 for thyroid adenoma, presented to ENT department with swelling at the right base of the neck gradually increasing size for one year, associated to difficulty of swallowing. On examination there was a firm painless right lobe nodule measuring 15mm. There was no lymphadenopathy. Ultrasonographic examination demonstrated a thyroid right lobe increased in size with well circumscribed nodules measuring 5 to 13mm of diameter with variable echogenicity (cystic, hypoechoic,, hyperechoic), without intra nodular calcifications. The most +suspected nodule was scored EU-TIRADS IV (figure1).

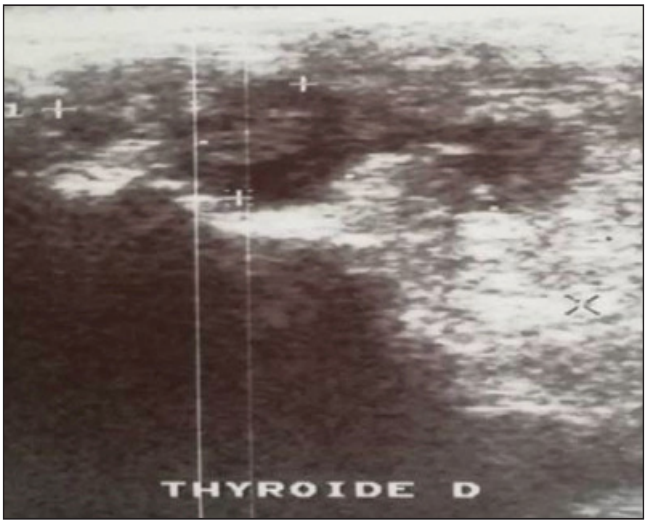

Figure 1: Thyroid Ultrasonography (US): a 18-mm hypoechoic well circumscribed solid mass with relatively benign US features

Fine needle aspiration biopsy of the suspect nodule was non diagnostic according to Bethesda 2017 classification. The patient was clinically and biologically euthyroid. The increased nodule volume, the EU-TIRADS score, and the history of the patient, had led to surgery decision. The patient underwent totalization of thyroidectomy. Macroscopically, we noticed many brown colloid nodules sized 0,3 up to 1,8 cm.
Microscopic examination of the suspected nodule, revealed a one centimeter well-limited lesion, with a trabecular pattern and marked inter trabecular deposition of hyalinized amorphous materiel (figure1).

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Tumor cells were oval-shaped with indistinct borders and abundant eosinophilic granular cytoplasm (figure3). Nuclear grooves and intra-nuclear pseudo inclusions were observed. At immunohistochemistry, tumor cells showed positive focal weak staining for Galectin-3 and negative staining for Cytokeratin 19. These findings were suggestive of the diagnosis of HTT diagnosis.

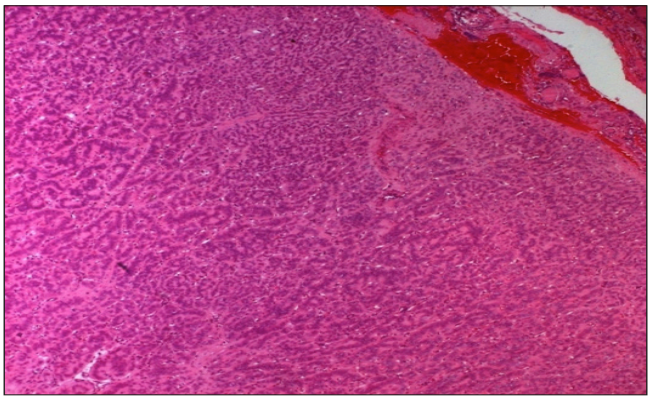

Figure 1: Microscopic examination of the thyroid nodule showing a trabecular pattern (black arrow) with hyalanized stroma (white arrow) (HEx50).

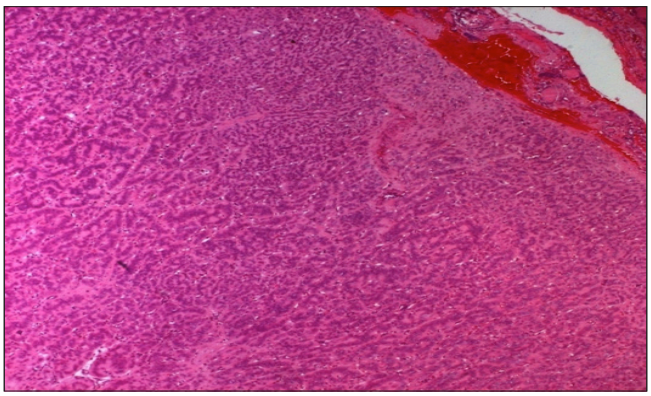

Figure 2: microscopic examination with high magnification of the tumor demonstrating ribbons(black arrow) of oval and elongated cells(white arrows) (HEx400).

DISCUSSION

HTT entered the World Health Organization's classification of Tumors of Endocrine Organs in 2004 and was defined as ''a rare tumor of follicular origin with a trabecular pattern of growth and marked intra-trabecular hyalinization [5]. It is an uncommon neoplasm which is more frequent in adult women between fourth and fifth decades of age [3]. In our case, the patient was a female of the sixth decade of life. Only 29 cases have been reported so far in world literature [6].

On another side, pathologic features noted in ultrasonography are not specific. Lee et al reported a retrospective study including ten patients diagnosed with HTT, which compared the preoperative ultrasonography and cytological features. The main ultrasonography characteristics detected were follicular lesions without any sign of potential malignancy, the presence of well-defined margins with a hypoechoic ''halo'' and the absence of microcalcifications [8]. In our case, Ultrasonography and fine needle aspiration results were not specific.

HTT should be considered in differential diagnosis of thyroid's solid tumors with benign ultrasound characteristics. Fine needle aspiration may be useful to avoid misdignosing HTT. Casey et al, in a study involving 29 patients, advanced an exhaustive cytological description of HTT that differentiated this entity from papillay and medullary thyroid carcinoma. The basic histological structure of HTT is characterized by a hyalinizing trabecular architecture with marked intra and inter trabecular deposition , cytoplasmic inclusions , numerous nuclear grooves and intra nuclear pseudo inclusions [9].

Definitive anatomopathologic examination is mandatory to rule out main differential diagnosis such as Hashimoto's thyroiditis ,paraganglioma , medullary thyroid cancer (MTC), and papillary thyroid cancer (PTC) [9].In fact, some similarities in nuclear features between PTC and HTT have been described. In addition, a specific molecular event of PTC which is RET/PTC rearrangement was detected in HTT. However, this RET rearrangement was also present in other thyroid lesion such as Hashimot's thyroiditis [3]. For several authors, PTC diagnosis can be rejected as this tumor doesn't present any true papillary architecture. Also MTC must be excluded because HTT presented a positive staining of thyroglobulin and calcitonin in immunohistochemestry study. As for paraganglioma, it never shows immunoreactivity for thyroglobulin [7]. Our patient's specimen presented trabecular pattern with hyalinizing stroma, and focal positive staining to Galactin-3 and negativity for Cytokeratin 19.

As it is claimed to be a benign lesion, lobectomy alone can be sufficient to treat HTT adequally. However, it can be over treated with total thyroidectomy because of the misdiagnosing with PTC or MTC in the extemporany examination. Our patient had totalization of thyroidectomy. Long follow up of patient has not showed any recurrence.

CONCLUSION:

HTT is an epithelial neoplasm which is surrounded by controversies concerning its classification. Cytological profile defined by some authors is challenging. Multiple histological and immunohistological studies have considered it as a benign lesion with low potential of malignancy that should not be undervalued .Surgery is the treatment of choice. Long follow up is necessary for all operated patients.

Compliance with ethical standards

Conflict of interest: The authors stated that there is no conflict of interest.

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