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Case Report

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A CASE OF HURTHLE CELL ADENOMA OF THYROID: CASE REPORT AND LITERATURE REVIEW

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ABSTRACT

Background: Both benign (Hürthle cell adenoma) and malignant (Hürthle cell carcinoma) Hürthle cell neoplasms are possible. Hürthle cell carcinoma, which makes up 5% of all differentiated thyroid carcinomas, is an uncommon tumor. Due to cytomorphologic characteristics that overlap with other follicular-patterned lesions, thyroid follicular adenoma and carcinoma, as well as Hurthle cell adenoma and carcinoma can be difficult to diagnose cytologically. As a result, it is exceedingly challenging to distinguish between these two entities before surgery, and this is only made feasible by the pathohistological analysis of the removed thyroid tumor. **Case study:** A 39 year old female. Presented to our clinic with thyroid nodule since 7 years With suspicious of follicular neoplasm in FNA biopsy, on march 2022 she underwent total thyroidectomy. The sample of pathology showed hurthal cell adenoma. **Conclusion:** Only a histological assessment could clearly distinguish between Hürthle cell adenomas and Hürthle cell carcinomas. Patients with cytologically confirmed Hürthle cell tumors should proceed with Total thyroidectomy especially if the tumor is greater than 1 cm

KEYWORDS: Hürthle cell adenoma, Thyroid, Oncocytic, Rare, Aggressive tumors.

INTRODUCTION

A uncommon benign thyroid tumor known as a Hürthle cell adenoma is made up of oncocytic cells, which make up more than 75% of the adenoma cell population. Although this lesion is described as benign, there is disagreement on its behavior because literature shows cases exhibiting behavior typical of malignant lesions.[1] Infrequent thyroid gland malignancies make up 0.5% to 1% of all malignant tumors. Hurthle cell carcinoma is classified as a kind of thyroid follicular carcinoma in the current World Health Organization classification. Even however, genetic research has revealed that these tumors have an entirely distinct oncogenesis; in addition, there are variations in terms of clinical traits when compared to papillary and follicular carcinoma. A tumor must have a majority of Hurthle cells, which come from the thyroid gland's follicular epithelium, in order to be categorized as a Hurthle cell carcinoma.[2] Due to cytomorphologic characteristics that overlap with other follicular-patterned lesions, thyroid follicular adenoma and carcinoma, as well as Hurthle cell adenoma and carcinoma, can be difficult to diagnose cytologically.[3] Hurthle cell tumors are relatively uncommon thyroid tumors, and opinions differ on how to treat them and how well they will progress.[4] Because this malignancy is extremely rare and unusual, more research is required.

CASE STUDY

A-39 year old female Case of thyroid nodule since 7 years, Presented with history of dysphagia and shortness of breath for long time, associated with history of choking attack and night sweat. No history of fever or weight loss. No previous surgical history. No family history of thyroid disease and no history of radiation.

On examination there's palpable right thyroid lobe, so by this finding patient send to do thyroid US. During follow up patient in clinic the US done and showed right lobe size 77.5*58.3*35.5 mm while the size of left lobe 47.5*13.2*10.8 mm. Feature of largest nodule 5.7*2.8 cm right lobe, complex echogenicity of nodule. Heterogenous boundary, well defined calcification. Non-visualized vascularity.

At time of presentation (on January 2020) decided to do FNA biopsy for the right thyroid nodule, which showed suspicious follicular neoplasm (hurthle cell type) BETHESDA IV.

Ct scan neck with IV contrast showed large heterogeneous right thyroid lobe lesion with mass effect on the surrounding structures and displacement of the trachea to the left side, but no retrosternal extension.

On February 2022, patient seen by ENT for total thyroidectomy, because of clinical presentation and radiological finding and advised to send biopsy from each side for diagnostic.

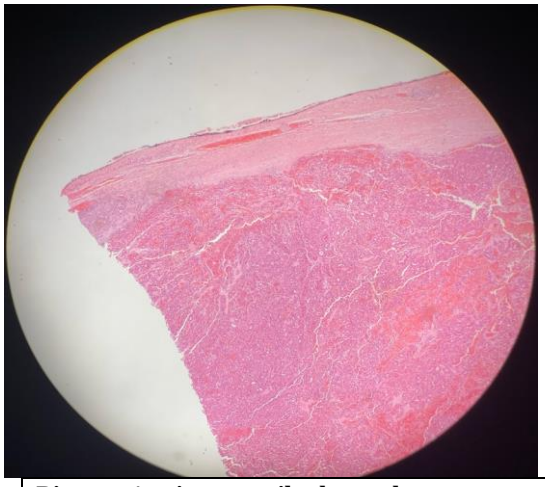
On march 2022 patient underwent total thyroidectomy. Then patient seen in the clinic follow up and the histology released which showed right thyroid lobe (hurthle cell adenoma) and left thyroid lobe (multinodular goiter with hyperplastic nodules) as shown in figure. On April 2022 patient seen in clinic and started on replacement thyroxin. Laboratory were within normal limit and patient was totally asymptomatic. Advised to be continue follow up with endocrinology to follow the patient clinically and thyroid function test.

DISCUSSION

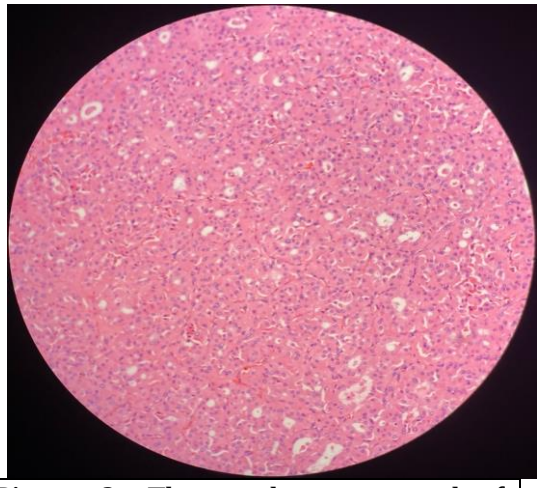
The oncocytic cells of hürthle are known to have large intracytoplasmic membrane mitochondria. They are regarded a the kind of epithelial cells that can act as a type of vascularized cell,[1] The accumulation of these types of mitochondria is caused by changes in the DNA's coding for enzymes,[2] Although hürthle cells can be found in benign conditions such as Hashimoto's thyroiditis and adenomas, they can also be found in malignant lesions, which can make it difficult to diagnose.[1,3] Fine-needle aspiration analysis is commonly used to distinguish hürthle cell lesions from those caused by papillary carcinoma. However, it can also be unreliable when dealing with other types of cell malignancies[4] A pathological examination is more accurate when it comes to distinguishing adenoma from hürthle cell hyperplasia. The pathologist can determine the difference between adenoma and hürthle cell carcinoma based on the presence of vascular malignancy, peri-thyroid invasion, or capsular invasion. (pic:1,2,3), Although adenomas are generally considered to be benign, studies suggest that they can also be cancerous. Since the criteria for distinguishing adenomas from carcinomas are not clear, total thyroidectomy should be performed on every hürthle cell tumor.[5] There are also conflicting opinions regarding the treatment of hürthle cell carcinoma. Some believe that lobectomy is the best option for treating this type of cancer. On the other hand, others believe that complete thyroidectomy is necessary in patients with carcinoma.[5,6] In patients with a type of thyroid cancer, the diagnosis of a malignant tumor that has been accidentally found during surgery is referred to as an incidental thyroid carcinoma. However, it is not always possible to determine which type of cancer is related to the disease,[6] The treatment of thyroid cancer is still controversial. For instance, Maturo et al. believe that total thyroidectomy is necessary for patients with multifocal and bilateral tumors that are related to the occult lymph node metastasis. Others, on the other hand, favor conservative surgical procedures, One of the most common types of thyroid cancer is papillary thyroid carcinoma.[7] This disease is found in different histological patterns,[8] The most common subtype of this disease is the classic or follicular variant. Other common types include papillary microcracinoma, diffuse sclerotherapy, columnar cell carcinoma, and macrofollicular carcinoma. There is also a distinct differentiation between papillary and anaplastic carcinoma.[8] The appearance of the columnar and tall cell variants of papillary carcinoma is more aggressive. The Follicular subtype is the second most common type of this disease.

Microscopic description

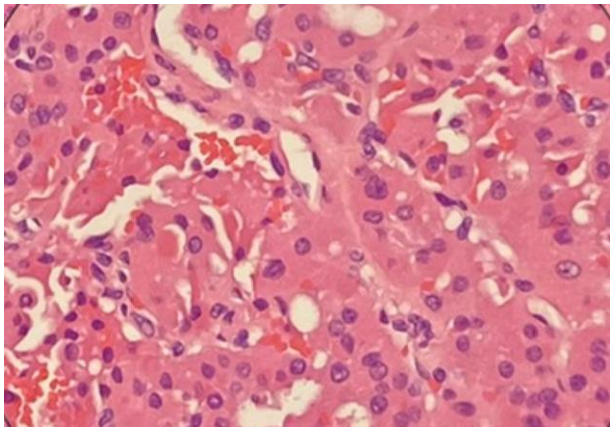
Circumscribed neoplasm completely encompass by thin fibrous capsule and composed of closely packed follicles and trabeculae of hurthle cells with no capsular or vascular invasion.



Picture 1: circumscribed neoplasm composed of thin fibrous capsule Thin fibrous capsule.



Picture 2: The neoplasm composed of packed follicles and trabeculae.



Picture 3: Follicles are composed of cells with distinct cell borders, granular eosinophilia Cytoplasm and Large nucleus with prominent nucleolus.

CONCLUSION

Only a histological assessment could clearly distinguish between Hürthle cell adenomas and Hürthle cell carcinomas. Patients with cytologically confirmed Hürthle cell tumors should proceed with Total thyroidectomy especially if the tumor is greater than 1 cm, FNAB results include cellular atypias, and/or several bilateral nodules are found in the thyroid tissue.

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