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HURTHLE CELL TUMORS OF THE THYROID LITERATURE REVIEW

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ABSTRACT

Hurthle cell carcinoma is a type of follicular carcinoma, which accounts for only 3% of all thyroid cancers. Its behaviour is similar to follicular cell carcinoma, but tends to be more aggressive. Has a high incidence of metastases to lymph node in the head and neck compared to other thyroid cancers. There are a limited number of reported cases and have been no clinical trials to ascertain the best treatment. We report a case of Hurthle cell carcinoma of 68-year-old female presented with neck lump, Fine needle aspiration cytology confirmed the presence of Hurthle cells, suggest possibility of a Hurthle cell neoplasm. The patient underwent surgical staging. Histology showed Hurthle cell carcinoma and the patient undergone adjuvant therapy. The literature on Hurthle cell neoplasm is reviewed.

KEYWORDS: Hurthel Cell Neoplasm Compared to Follicular Neoplasm

INTRODUCTION

Hurthle cell tumors of the thyroid are uncommon neoplasm accounting for less than 3% of all follicular thyroid tumors. [1]Hurthle cell tumors also called Askanazy cell tumors, [2] oncocytomas, or oxyphil tumors. They have been found in association with different benign thyroid conditions like Hashimoto's thyroiditis, hyperthyroidism, nodular goiter, and thyroid neoplasm's; [3]The tumor-size is considered as predictive of malignancy or benignity, as well as capsular and vascular invasion [4], [5],[6],[7] Hurthle cell tumors remain interesting as its challenging difficulties in differentiating adenomas from carcinomas in tissue diagnosis. Also have no specific imaging characteristics. [8] Over and above, the behaviour of Hurthle cell neoplasm's are unpredictable, [4], [9] Additional to difficulty in deciding optimal treatment options.

CASE PRESENTATION

68 years Saudi female patient, medically free presented to general surgery clinic complain of neck pain and swelling without sign or symptom of hypothyroidism or hyperthyroidism. No family history of thyroid tumor. Examination: patient clinically stable Palpable neck mass (thyroid) mainly on the left side about 4x4 cm No palpable lymph node Blood tests: normal, Thyroid function test: normal

Neck US figure1 multinodular goitre without lymph nodes enlagermentNek CT scan multinodulargoiter, no evidence of malignancy or lymphadenopathy

FNA cytology: atypical follicular cell with hurthle cell morphology Diagnosis / Thyroid hurthle cell neoplasm

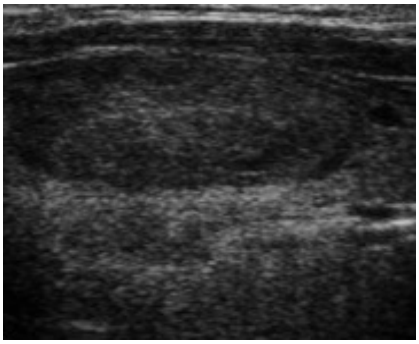

Figure 1: Sonographic Appearances predominantly Hypo Echoic Lesion with Isoechoic Areas

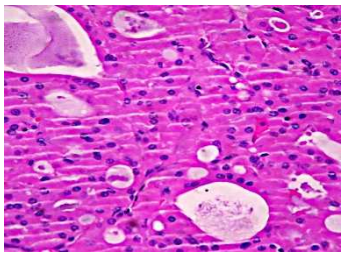

Figure 2: Hurthle Cells within Nodule Forming Follicles Marked by Cells with Round to Oval Nuclei, Prominent Nucleoli and Abundant Granular Eosinophilic Cytoplasm (Power x 600, Hematoxylin and Eosin)

Patient underwent total thyroidectomy, but No lymph nodes identified during neck exploration. Macroscopic examination of the thyroid lobes and isthmus showed enlarged thyroid with well defined tumor involving the left lobe about 4 cm in maximum dimension, surrounded by rim of preserved thyroid tissue. Microscopic examination showed tumor containing a Hurthle cell, which was mostly encapsulated, with foci of capsular and vascular invasion. But no extra capsular or extra thyroidextention [pT2, N0, Mx], (Figure 2& 3)

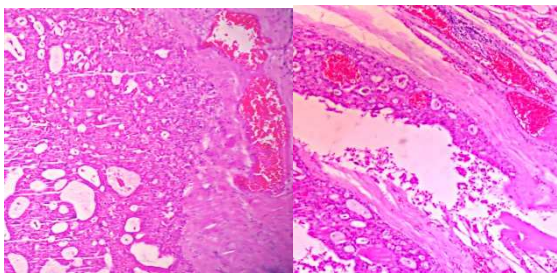

Figure 3: Photomicrograph Showing Capsular Invasion (Haematoxylin and Eosin ×200)

The patient had adjuvant therapy with oral radioiodine 131 (3060 MBq Sodium Iodine). He was put on a regular dose of 100 mcg of thyroxine. This was to be followed by a second dose of 5911 MBq of radioactive iodine six months from the period of the first dose.

DISCUSSIONS

HCC of the thyroid gland is a rare neoplasm that comprises 3% of all differentiated follicular thyroid cancers.[1, 2] The median age of patients with Hurthle cell cancer is 55 years old, which is 10 years older than patients whose with follicular cancer. Like follicular cancer, Hurthle cell thyroid cancer rarely spreads to lymph nodes (about 10%), but it can

recur locally or spread to the lung or bone. Fine needle aspiration cytology (FNA) is a good predictor of HCN but is of little diagnostic value in evaluating HCC ,as the presence of capsular and vascular invasion are a clue for the diagnosis of HCC, and this can be only reached based on tissue evaluation .Oncocytic cells have been known as Hurthle cells, Askanazy cells and oxyphilic cells. They are usually considered an alternative of follicular epithelial cells. The World Health Organization (WHO) Committee prefers to define them as oxyphilic cells [15].Hurthle cells can be found both in neoplastic and non-neoplastic thyroid lesions, it is difficult to categorize benign Hurthle cell hyperplasia from real Hurthle cell neoplasm. There is general agreement that the parameter useful to classify between true HCT and Hurthle cells hyperplasia, is 75% of the cell population is made up of Hurthle cells. Usually, as for the follicular type, a HCT can be diagnosed as invasive (HCC) when capsular or vascular invasion is reported or if there is an extra capsular extension or distant metastases [20, 21]. Unde microscopic examination, HCC is sub typed as “minimally invasive HCC”, if only capsular invasion is described or “invasive HCC”, when both vascular and capsular infiltration are present. FNA is of low limitation in differentiating HCA from HCC ,even intraoperative frozen section is also of low value ,only tissue diagnoses is the useful clue in differentiating both. [23, 24] .clinical features such as tumor size, patient age and sex should be part of the decision process [22]. Hurthle cell neoplasm was initially described, in 1907; by Langhans who described 5 cases of patients with thyroid neoplasm’s made of oncocytes [2]. Although 2 out of the 5 patients died on due to distant metastases. In 1941, Harry et al. explained these tumours as moderately invasive carcinomas [26] and Warren et al. categorized them as benign tumours potentially malignant [27]. In 1951, the American Cancer Society demanded that surgical treatment of Hurthle cell neoplasms should be aggressive because of their invasive potential [28]. More recently, some Authors described that as Hurthle cell thyroid lesions are usually forceful malignant neoplasm’s and even adenomas could metastasize [29], Patients with Hurthle cell thyroid cancer, if there is less invasion, should generally undergo removal of all or nearly all of their thyroid tissuall Hurthlecell. In 1988, McLeod et al. again proposed that treatment of Hurthle cell neoplasm’s was argument because of the absence of a clear correspondence between the microscopic features and also the clinical behaviour of the tumour [30]. Thompson et al. demanded that Hurthle cell neoplasms should be considered invasive regardless of size and pathological features and recommended total thyroidectomy for all such lesions [29]. Grant et al. reported that just one out of 272 patients affected by HCA presented in clear way of malignancy and no patients died of thyroid carcinoma [31]. HCN may exhibit a follicular or papillary growth pattern; they have often been categorized only on the basis of their architectural features. Recently, in a large series of patients affected by HCC with a papillary growth pattern, the Authors found that it has worsen outcome comparing to those with papillary thyroid carcinoma, of tall cell differing, in terms of vascular invasion, distant metastases and prognosis [21,26]. And carry high mortality rate as high as 25% in 30 years. Shaha et al. have shown that there are several differences between HCC and follicular thyroid carcinoma [31]. Patients affected by HCC frequently present an intra-thyroid multifocality (33%), extra-thyroid invasion (39%), lymph node (25%) or distant metastasis (18%). Compared to those affected by follicular thyroid carcinoma. Patients with HCC are indicatively older, have larger nodules, higher mortality associated with recurrence. In understanding with the results of other Authors, recurrence was observed within the first 5 years after surgery due to the shortage of HCC. The use of radioactive iodine is still controversial since, in most metastases from these tumours, understand of radioactive iodine is rare [16, 25].this treatment is advisable, as even low risk patients who have HCC or follicular thyroid carcinoma. Our case was treated with both radioactive iodine, and up to date no reported metastasis observed.

CONCLUSIONS

Hurthle cell tumour is one of the rare types of follicular carcinoma. Tend to have more aggressive behaviour, with rarity of researches regarding the treatment .It's difficult to predict the outcome of such cases.

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