ORIGINAL RESEARCH PAPER

Pathology

A CASE REPORT ON HURTHLE CELL ADENOMA OF THYROID GLAND IN 24 YEAR FEMALE: A RARE ENTITY

KEY WORDS: Follicular adenoma, TIRADS, TBSRTC, Hurthle cell tumor

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ABSTRACT

Hurthle cell Adenoma of thyroid gland is variant of follicular adenoma which comprises of 3-4% of all thyroid neoplasm which generally involves age group of 30-70 yrs. We are presenting a case of 24 year female patient presenting with complaints of right sided neck swelling since 2 months. On USG it was reported as TIRADS grade 5 while FNAC reported it as TBSRTC category IV Follicular Neoplasm. Right thyroidectomy was carried out which revealed it as Hurthle cell adenoma on HPE. This case report aims to increase the awareness on hurthle cell tumors owing to its low incidence and lack of special clinical manifestations.

INTRODUCTION:

Huthle cell Adenoma of thyroid gland is variant of follicular adenoma which comprises of 3-4% of all thyroid neoplasm which affects females more than males. It generally involves age group of 30-70 yrs. Its pathognomic feature is presence of large oncocytic cells with brightly eosinophilic granular cytoplasm (hence also known oxyphilic/Askanazy cells). Its oncocytic appearance is due to accumulation of dysfunctional mitochondria. [1]

It is a benign entity with no recurrence after excision. Hurthle cell carcinoma is characterized by capsular/vascular invasion and has higher frequency of extrathyroidal extension, local recurrence, metastasis to lymph nodes.

Case Report:

A 24 year old married female patient presented to outpatient department which chief complaints of right sided neck swelling since 2 months, throat pain since 1 month and difficulty in swallowing since 2 days. There was also associated complaint of weight loss and generalized weakness.

On examination the swelling was right to midline, 3x2 cm^2 mobile, soft, non tender, which moves with deglutition over midline of neck and does not move with protrusion of tongue. Swelling extended just below thyroid cartilage upto 2 cm above suprasternal notch.

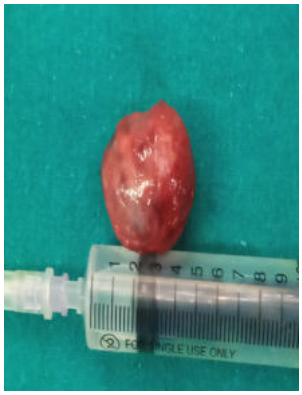

Figure 1: Gross image of specimen of hemithyroidectomy

Thyroid function test values were within normal range. On USG it was described as 14x18x30 mm size cystic lesion with 13x 17x 27 cm size heterogeneous solid nodule with internal vascularity in right lobe of thyroid and level II subcenteric lymph nodes and was graded as TIRADS Category 5. CT Neck revealed 2.57 x 1.85 x 2.69 cm mass lesion in right lobe of thyroid with close subcentimetric lymphnode close to thyroid gland on left side. Thyroid function test values were within normal range. FNAC microscopic description was: moderately cellular smears shows predominantly small follicles of thyroid follicular cells with mild degree of nuclear atypia and some cells show oncocytic changes in background of hemorrhage and scant amount of colloid. As per TBSRCT it was placed under Category 4- Follicular Neoplasm.

Right Hemithyoidectomy and anterior neck lymph node dissection was performed and sample was sent for Histopathological examination. (Figure 1)

Grossly it was single nodular tissue mass measuring 2.5x2.5x1.5 cm. Cut surface was well capsulated, cystic, brownish. It was submitted in tissue cassettes for further histopathological processing.

Microscopic examination revealed well encapsulated mass consisting of Hurthle cells (oncocytic) arranged in follicular, trabecular and solid configuration (Figure 2, 3). Cells are monomorphic, show distinct nucleoli, coarse chromatin with abundant pink granular cytoplasm. Intervening stroma is reduced (Figure 4). Surrounding thyroid around tumor is normal with presence of macrofollicles containing colloid. No capsular and vascular invasion is seen. The radiological, FNAC and HPE findings were consistent with diagnosis of Benign Thyroid Neoplasm: Hurthle cell adenoma.

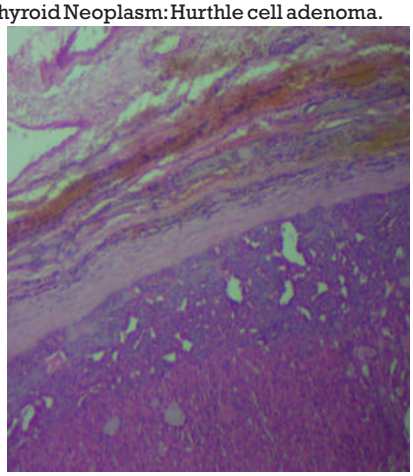

Figure 2: Intact Capsule without invasion. (H & E Stain, 4X view)

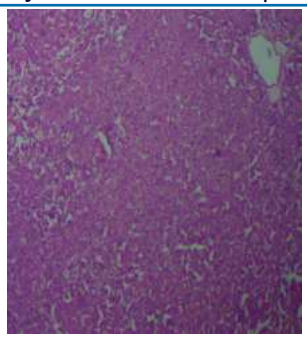

Figure 3: Hurthle cells (oncocytic) in follicular, trabecular and solid configuration (H & E Stain, 10 X view)

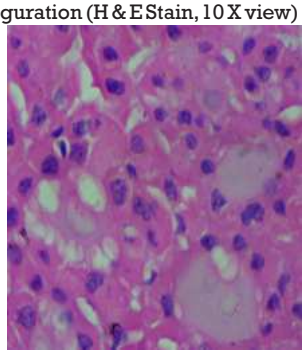

Figure 4: Hurthle cells with abundant pink granular cytoplasm (H & E Stain, 40 X view)

DISCUSSION:

Hurthle cell tumors show primarily follicular growth pattern, but can be associated with papillary, trabecular or solid pattern. [1] Tumors with clear cut capsular and/or vascular invasion are designated as Hurthle cell carcinoma. The invasive tumors tend to grow into parenchyma in multinodular fashion and can be underinterpreted as nodular hyperplasia. The main underlying mechanism of hurthle cell tumors are Mitochondrial DNA mutation by either of substitution, insertion or deletion of the genes coding for the complex which constitutes the oxidative phosphorylation (OXPHOS) system.[2]

Other scenarios wherein Hurthle cells can be seen include variety of non-neoplastic lesions like Nodular goiter, Graves Disease, Hashimoto's thyroiditis and Granulomatous thyroiditis. [3, 4] So it is equally important to keep these differentials in mind while diagnosing such cases. They show propensity to undergo massive infarct type necrosis following FNAC. [5] Cytogenetically, gain at chromosomal 12q, 19p and 20p are associated with tumor recurrence. And chromosome 22 loss is associated with patient mortality.[2]

CONCLUSION:

Due to its extremely low incidence, lack of special clinical manifestations and lack of typical imaging features, preoperative diagnosis of Hurthle cell adenoma is difficult. Histopathological study is gold standard. Hurthle cell adenomas are cured by lobectomy if fully excised and carry good post-operative prognosis.

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