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Case Report

Warthin like papillary thyroid carcinoma: A rare case report

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ABSTRACT

Papillary thyroid carcinoma (PTC) is the most frequent endocrine malignancy with a variety of histopathological presentations. Warthin like papillary thyroid carcinoma (WL-PTC) is an uncommon variant that is recognized as a distinct subtype of PTC in WHO Classification (5^{th} edition-2022) of thyroid tumors.We report a case of female patient aged 36-year-old presented with complaint of swelling over anterior midline of neck region for 6 months which was gradually increasing in size. The ultrasonography report revealed possibility of malignancy TIRADS- 5. The patient underwent FNAC which was reported as papillary thyroid carcinoma- Bethesda Category V. The total thyroidectomy was performed, the histopathological report stated Papillary thyroid carcinoma associated with lymphocytic thyroiditis, possibility of Warthin like PTC.

1. Introduction

Papillary thyroid carcinoma is a most common malignant tumor of the thyroid gland.[1] There are so many histopathological variants of papillary thyroid carcinoma like follicular variant, tall cell variant, Warthin like variant, columnar cell variant, hobnail variant, solid variant, diffuse sclerosing variant. WL-PTC is a rare subtype showing 0.06-1.9% of all PTC in the age group of 18 to 77 years with female preponderance.[2] WL-PTC shows a distinctive histopathology resembling Warthin tumor of the salivary gland. It is characterized by papillae lined with oncocytic cells displaying nuclear features of PTC like nuclear enlargement, nuclear grooving, chromatin clearing and intranuclear pseudo-inclusions along with a prominent lymphoplasmacytic infiltrate within the papillary cores.[3] Accurate diagnosis of WL-PTC may not be feasible through FNAC. Despite this, WL-PTC has a clinical and radiological appearance similar to Classic PTC and has a more favorable prognosis.[4]

2. Case Report

A female patient aged 36-years-old came to ENT OPD with chief complaint of midline neck swelling for 6 months which was gradually increasing in size. She was a known case of hypothyroidism and on regular medication. There were no other known comorbidities or any significant past history or family history. On physical examination, A 2x2 cm sized non warm, non-tender, non-mobile, moved with deglutination and did not move with protrusion of tongue, swelling was present over anterior midline of neck (Figure 1).

All routine blood investigations were done which showed Hb – 11.9 g/dl, total count – 9600 cells/cumm, platelet count– 2.61 lakh/cumm, FT4 – 1.05 ng/dl, FT3 – 2.68 pg/ml, TSH – 1.35 μIU/ml, and serum calcium – 8.2 mg/dl.

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Ultrasonography of neck showed, Approx 16x16x4 mm sized well defined mixed echogenic lesion noted in isthmus and left lobe of thyroid, few ill-defined hypoechoic lesions noted in both lobes of thyroid- TIRADS V, suspicious for malignancy.

Fine needle aspiration cytology was done in which highly cellular smears suggested group of cells with anisonucleosis, nuclear overlapping, grooving and pseudo-inclusions. Scattered multinucleated giant cells and cyst macrophages were seen in background of scanty colloid and hemorrhage (Figure 2) thus reported Bethesda category V-Suspicious for Papillary thyroid carcinoma and biopsy was advised.

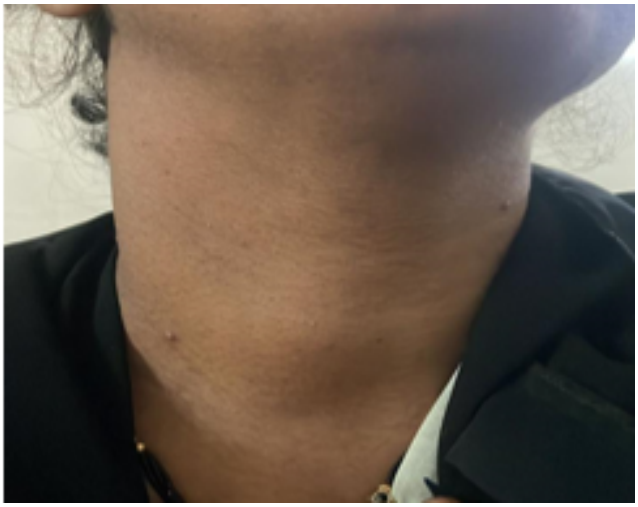

Figure 1: Clinical picture of patient having a 2x2 cm sized anterior midline neck swelling

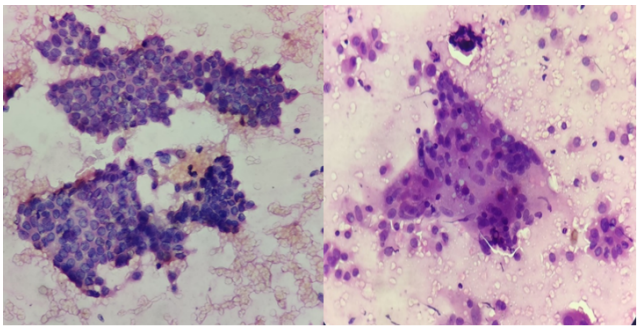

Figure 2: FNAC smears suggested- Left side: Cells with nuclear overlapping, grooving and pseudo-inclusions (H & E,40x), Right side: Multinucleated giant cells are seen (H &E,40x)

2.1. Gross

The specimen of total thyroidectomy measuring 5x4 cm. On cut section of thyroid, an ill-defined grayish white solid tumor is seen involving left lobe, isthmus and right lobe of thyroid measuring 3.7x 2.3 cm (Figure 3).

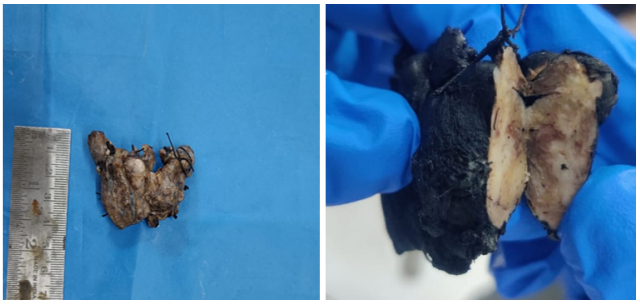

Figure 3: Left: Gross picture of total thyroidectomy specimen. Right: On cut section, ill-defined gray white solid tumor is seen.

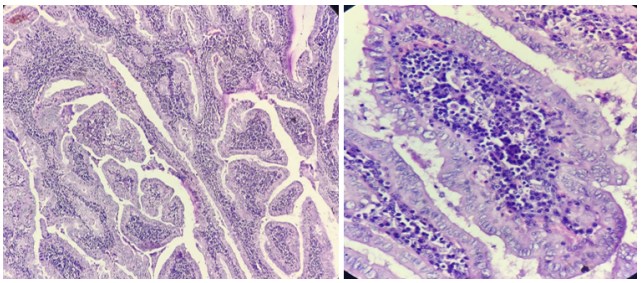

Figure 4: Left: Branching papillae with center fibrovascular core, Lymphoplasmacytic infiltration and Stratified lining having, eosinophilic Cytoplasm (H &E,20x). Right: Papillae with lymphoplasmacytic infiltration, Ground glass nuclei and nuclear grooving (H &E,40x).

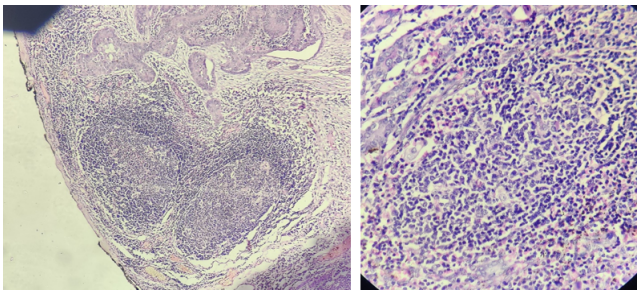

Figure 5: Left: Diffuse infiltration of Lymphoplasmacytic infiltration and follicle formation with germinal centers (H &E,20x), Right: Lymphoid follicles (H&E, 40x)

2.2. Microsopic examination

Sections revealed tumor showing complex and branching papillae with a central fibrovascular core, containing lymphoplasmacytic infiltration and stratified lining of cells having eosinophilic cytoplasm. The cells showed characteristic nuclear features consisting of ground glass (optically clear) nuclei and nuclear grooves. Desmoplastic stromal reaction was seen. The adjacent thyroid parenchyma

showed diffuse infiltration of lymphoplasmacytic infiltrate and lymphoid follicle formation with germinal centers. Associated thyroid follicular destruction and fibrosis was seen.

2.2.1. Overall findings were reported as

1. Papillary thyroid carcinoma associated with lymphocytic thyroiditis, Possibility of Warthin like papillary thyroid carcinoma.
2. Lymphatic invasion was present.
3. Capsular infiltration was present.
4. All margins were negative for carcinoma.
5. pTNM (AJCC 8^{th} edition) – pT2NxMx.
6. AJCC 8^{th} edition- Stage I.

3. Discussion

The World Health Organization (WHO- 5^{th} edition 2022) has classified "Warthin-like variant" under the different variants of PTCs. WL-PTC is a rare subtype, accounting for 0.06 to 1.9% of all PTCs.[5] This subtype retains the nuclear features of papillary carcinoma, but the cytoplasm is abundant and granular oxyphilic. The growth pattern can be either papillary or follicular, and the tumor may be encapsulated or invasive. A variant of this subtype exhibits papillary architecture, typical nuclear features, oncocytic cytoplasm, and lymphocytic infiltrate in the stroma of the papillae, resembling Warthin tumor of the salivary glands.[2] There are so many histopathological variants of papillary thyroid carcinoma like Classic variant, tall cell variant, Warthin like variant, columnar cell variant, hobnail variant, solid variant, diffuse sclerosing variant, oncocytic variant. Histopathological analysis faces challenges with the classic, oncocytic and tall cell variants of papillary thyroid carcinoma (PTC), as all these variants lack the distinctive lymphoplasmacytic infiltrate in the papillary stalk. However classic-PTC, WL-PTC, clear cell PTC, DS-PTC variants have good prognosis than other variants like tall cell, hobnail, solid trabecular variants. In present time of molecular pathology, there is a strong focus on diagnosing and prognosing tumors through molecular mutational analysis. This is particularly true for thyroid malignancies, where patients with solitary thyroid nodules are closely monitored using molecular analysis. The BRAF V600E mutation is the most frequently observed genetic abnormality in classic papillary thyroid carcinoma (PTC), while only 65%–75% of the WLPTC exhibit this mutation.[6] Immunohistochemical markers such as HBME-1, Galectin-3, 34βE12, Cyclin D1, CK19 and CD15 have been reported in a few cases. However, according to available resources, immunohistochemistry has limited to no role in diagnosing WL-PTC.[7] In this case report, due to the presence of characteristic morphological features, immunohistochemistry was not performed. The treatment however depends on the tumor stage at the time of presentation, history of radiation and significant family history. Treatment modalities include surgery, thyroid hormone therapy, radiation therapy including radioactive iodine therapy. Based on the tumor size and extent of spread, lobectomy or total thyroidectomy with or without neck dissection can be done. Patients with residual thyroid tissue or in with capsular invasion postoperative radioiodine ablation and follow-up are required. The prognosis for this WL-PTC subtype is generally very good, similar to conventional papillary carcinomas of the same size and stage.

4. Conclusion

WL-PTC shares similar clinical and radiological presentations with classic PTC. The hallmark histopathological features of WL-PTC include papillae lined with oncocytic tumor cells displaying papillary nuclear changes and a lymphoplasmacytic stroma. WL-PTC is often associated with chronic lymphocytic thyroiditis (CLT).[8] The management of WL-PTC is similar to that of classic PTC of the same stage and risk category, and it typically has a good prognosis.

5. Source of Funding

None.

6. Conflict of Interest

None.

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