Case Report

Warthin Like Variant of Papillary Carcinoma Thyroid Against the Background of Hashimotos Thyroiditis : A Case Report

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ABSTRACT

Papillary thyroid carcinoma (PTC) is the most common malignant neoplasm of the thyroid gland with many variants . The Warthin-like variant of PTC (WLPTC) is a rare accounting for 1-2% of PTC that is considered to be a subtype of the oncocytic variant. A 35-year-old female sought consult for assessment of a painless right neck tumor. Fine-needle aspiration biopsy report was given as hashimotos thyroiditis with hurthe cell neoplasm . The patient underwent right hemithyroidectomy. Grossly a single lobe of thyroid which was nodular on external surface and cut surface there was a single nodule measuring 1 cm in diameter,whitish in appearance with few areas of congestion. Microscopically, the tumor was composed of papillae lined by cells with eosinophilic cytoplasm, nuclear chromatin clearing, grooves, and pseudoinclusions and a characteristic lymphoplasmacytic infiltrate of the papillae cores. At places the thyroid parenchyma shows follicles of vaying sizes along with lymphoid follicles.

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Introduction

The Warthin-like PTC is a variant that is characterized by a papillary growth of oncocytic cells with classic nuclear features of PTC and an associated brisk lymphoplasmacytic infiltrate in the papillary stalks. The variant is so-named because of its close resemblance to parotid gland Warthin tumor. These tumors often have an associated chronic lymphocytic thyroiditis with oxyphilia in the background thyroid. The differential diagnosis includes the tall cell variant of PTC; however, despite the oncocytic cells, the cells are not twice as tall as they are wide.[1] The prognosis of this lesion is similar to that reported with typical PTC. We have seen unusual cases of Warthin-like PTC transition to tall cell PTC at its invasive edge and then invade into extrathyroidal soft tissues. The clinical behavior of such lesions seems to more closely follow that of Warthin-like papillary carcinoma than the tall cell phenotype. Defining the histologic variant of thyroid carcinoma is an important clinical implication as their progression, recurrence, aggressiveness, and prognosis differ. Warthin-like variant is one of the rarest histologic variants of papillary thyroid cancer.[2] Warthin-like variant is an uncommon and relatively unknown variant of papillary thyroid carcinoma that has been usually associated with an excellent prognosis. Interestingly, BRAF mutations have been reported to be present in up to 75% of the patients. It is frequently associated with Hashimoto's thyroiditis and presents unique morphological features that make it recognizable on histologic examination. The cytological diagnosis is difficult to assess due to the overlap in its findings with the classical variant and Hashimoto's thyroiditis.[3]

Papillary, follicular, and anaplastic thyroid cancers are follicular epithelial-derived cancers. Papillary and follicular cancers are considered differentiated cancers and patients with these tumors are treated similarly, nevertheless being biologically different.[4] On their pathogenesis, proteins in the mitogen-activated protein kinase (MAPK) pathway have gained interest as almost 70% of differentiated thyroid cancers may present exclusive nonoverlapping activation mutations in BRAF, RET, or RAS. Several histologic subtypes of papillary thyroid cancer (PTC) have been described. Of these the follicular variant is the most common and the so-called "Warthin-like" (WL) variant has been seldom reported . Oncocytic metaplasia is usually seen in both benign and malignant lesions of thyroid.The true oncocytic tumors are classified as Hurthle cell tumors, which are characterized by distinct cytology and clinical behavior. However, follicular cell–derived tumors and even medullary carcinoma can exhibit prominent oncocytic change.[5]Among the follicular derived tumors, papillary carcinoma can show both focal and extensive oncocytic

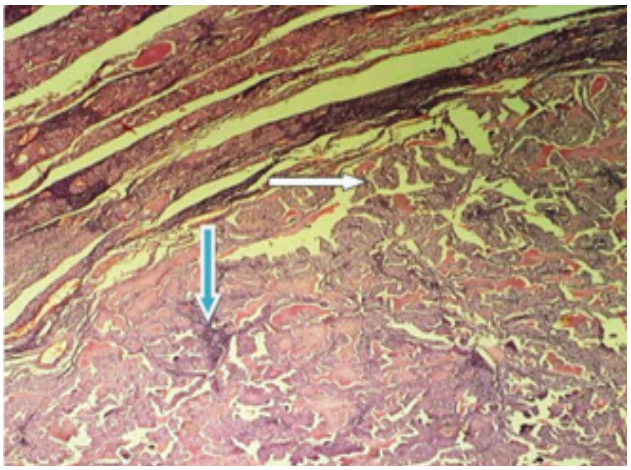

Fig. 1: warthin like variant of papillary carcinoma thyroid (40X): Shows few papillary(white arrow) fragments with lymphoid infiltrates(blue arrow).

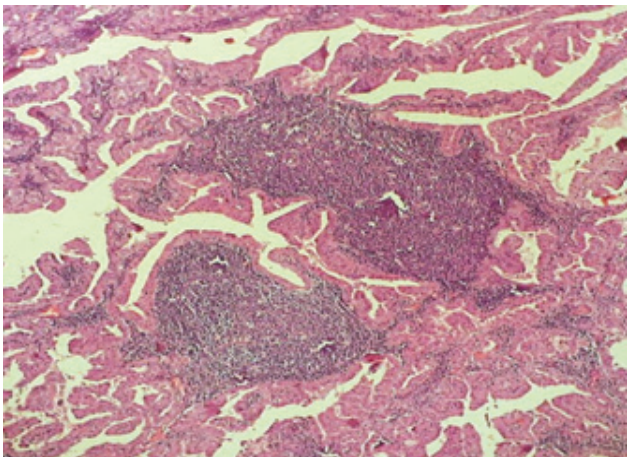

Fig. 2: Shows papillae lined by bilayered oncocytic epithelium and lymphoid aggregates .

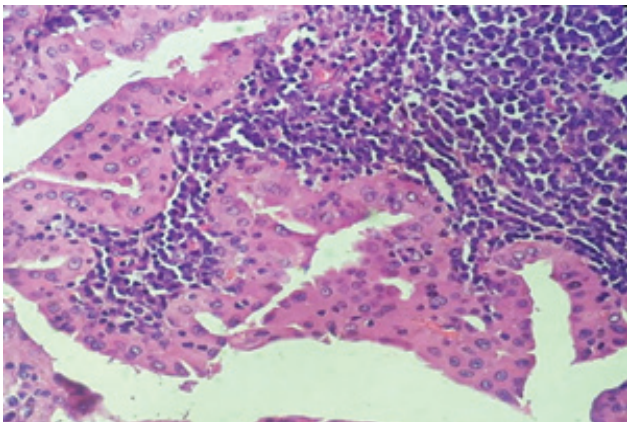

Fig. 3: Shows papillae lined by bilayered epithelium with eosinophilic cytoplasm, nuclear chromatin clearing, grooves, and pseudoinclusions and a characteristic lymphoplasmacytic infiltrate of the papillae cores.

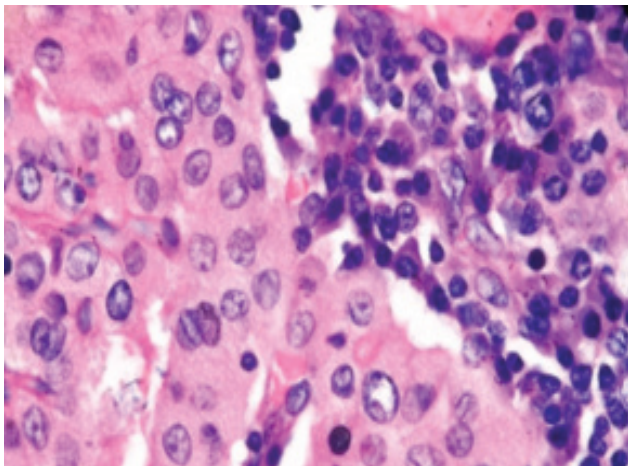

Fig. 1: Section Shows papillae lined by bilayered epithelium with eosinophilic cytoplasm, nuclear chromatin clearing, grooves, and pseudoinclusions and a characteristic lymphoplasmacytic infiltrate of the papillae cores. (H&E, x1000)

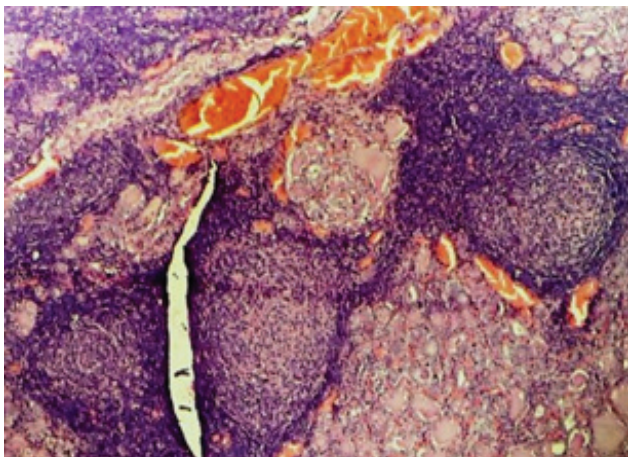

Fig. 2: Hashimotos Thyroiditis : Shows thyroid parenchyma shows follicles of vaying sizes along with lymphoid follicles (100X).

change. Hurthle cell variant of papillary carcinoma accounts for 1% to 11% of all papillary carcinomas. These tumors are characterized by papillary formation lined by oncocytic cells and clinically behave similarly to conventional papillary carcinoma. Warthin like variant of papillary carcinoma, resembles the warthin tumor of salivary gland is rare ,has indolent course and is one amongst the thyroid lesions to show oncocytic metaplasia.[6]

Case Report

A 35-year-old female sought consult for assessment of a painless right sided neck tumor, denied having a family history of thyroid disease, exposure to irradiation, or any other risk factor associated with thyroid cancer. Physical examination revealed painless, nonfixed, regular, and hard nodule of 1 × 2 cm in the inferior right thyroid lobe. Dyspnea, dysphagia, dysphonia and cervical lymphadenopathy were absent. Fine-needle aspiration biopsy report was given as hashimotos thyroiditis with hurthe cell neoplasm. The patient underwent right hemithyroidectomy. Grossly a single lobe of thyroid which was nodular on external surface and cut surface there was a single nodule measuring 1cm in diameter,whitish in appearance with few areas of congestion. Microscopically, the tumor was composed of papillae lined by cells with eosinophilic cytoplasm, nuclear chromatin clearing, grooves, and pseudoinclusions and a characteristic lymphoplasmacytic infiltrate of the papillae cores. At places the thyroid parenchyma shows follicles of vaying sizes along with lymphoid follicles. A rim of normal thyroid parenchyma was also seen .

Discussion

World Health Organization (WHO) recognizes 9 main histopathological papillary thyroid cancer variants: follicular, macrofollicular, oncocytic, clear cell, diffuse sclerosing, tall cell variant, columnar cell, solid, and cribriform . [1]The most recent edition of the WHO classification of tumors of endocrine organs classifies "Warthin-like tumor" under the oncocytic variant section. We believe it is important to acknowledge all these variants due to a more aggressive biological behavior of at least two of them (tall and columnar cell variants). The Warthin-like variant is morphologically characterized by a papillary architecture with an oncocytic epithelial lining and a lymphoplasmacytic core infiltrate . Also important to mention is its well-known association to Hashimoto's thyroiditis present in the nonneoplastic thyroid tissue .[2]

Papillary carcinoma and its variants can exhibit different degrees of oncocytic metaplasia. Hurthle cell and tall cell variants of papillary carcinoma show prominent oncocytic change. Papillary Hurthle cell carcinomas comprise 1% to 11% of all papillary carcinomas and are characterized by papillary architecture lined by oncocytic cells with nuclear features of papillary carcinoma.[3] However, they usually lack lymphoplasmacytic infiltrate and a strong association with lymphocytic thyroiditis, as seen in the Warthin-like variant. The tall cell variant of papillary carcinoma is characterized by papillary growth pattern, oncocytic elongated tumor cells with a height twice that of their width, and papillary cancer nuclei. Clinically, this variant of papillary cancer can behave in a more aggressive fashion and is frequently associated with extrathyroidal extension, vascular invasion, lymph node anddistant metastases,

and tumor recurrence. The presence of HT in PTC has been associated with favorable prognostic features, such as lower rates of lymph node metastasis, extrathyroidal extension, and TNM stage, and lower frequency of BRAF V600E mutation .[4] The peculiar lymphoid infiltrates in the papillary stalks suggest that WLPTC might have a distinguished entity .WLPTC is commonly accompanied by HT in a background . In the present study, HT was seen in 80% of all WLPTC cases. We hypothesized that WLPTC might have better prognosis than classic PTC due to an association with HT. However, there were no significant differences in clinicopathologic factors (age, sex, multifocality, pT stage, extrathyroid extension, and lymph node metastasis) except for tumor size, HT, and BRAF mutation between WLPTC and classic PTC.[5] When we compared WLPTC and classic PTC with HT only, there were no significant differences in age, sex, multifocality, Pt stage, extrathyroid extension, lymph node metastasis, or even tumor size or BRAF V600E mutation between groups. Thus, we suggest that the pathologic and clinical behaviors of WLPTCs are similar to those of classic PTC, especially classic PTC with HT .[6]

Conclussion

Warthin-like variant is an uncommon variant of papillary thyroid carcinoma. It is frequently associated with Hashimoto's thyroiditis and presents unique morphological features that make it easily recognizable on the histologic examination. The cytological diagnosis is difficult to assess due to the overlap in its findings with the classical variant and Hashimoto's thyroiditis Prognosis are the same as those reported for the classic variant. However BRAF mutations have been reported to be present in up to 75% of the patients with Warthin-like variant. Consequently, further studies with larger series and long-term monitoring are required to establish this with certainty.

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Competing Interests

None declared.

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