Case Report

Warthin-like variant of papillary thyroid carcinoma: A diagnosis not to be missed

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ABSTRACT

The Warthin-like variant of papillary thyroid carcinoma (PTC) is a recently described, uncommon variant of PTC. Proper identification of this variant is warranted as it shows good clinical behavior when compared with other oncocytic rich neoplasms of the thyroid. We present a case of Warthin-like variant of PTC in a 40-year-old female patient and describe the clinicopathological features, along with the differential diagnosis of this rare tumor.

Key words: Lymphocytic thyroiditis, oncocytes, papillary thyroid carcinoma

INTRODUCTION

Papillary thyroid carcinoma (PTC) is the most common form of thyroid carcinoma worldwide which has shown an increase in its incidence in recent years. Based on the architectural patterns, many morphological variants of PTC have been described.[1] Since these variants show different prognosis and may mimic other nonneoplastic lesions of the thyroid gland, it is necessary to define and identify the variants correctly to provide optimal treatment. The Warthin-like variant of PTC was first described in 1995 by Apel *et al*., and since then, <100 such cases have been reported in the English literature.[2,3] We report a case of 40-year-old female presenting with thyroid enlargement which was postoperatively diagnosed as Warthin-like variant of PTC. Through our case report, we describe the clinicopathological features along with the differential diagnosis of this rare entity.

CASE REPORT

A 40-year-old female patient presented with swelling in the neck of 2 years duration which was gradually increasing in size. She had no significant past or family history. A diffusely enlarged, firm swelling which moved with deglutition was noticed on clinical examination. Ultrasonography of the neck revealed an enlarged thyroid gland with a 25 mm × 22 mm heteroechoic nodule in the left lobe. Complete peripheral halo and a significant vascularity were noted in the nodule, and a diagnosis of PTC was made. Multiple subcentimetric lymph nodes at level IB were also noted on both sides of the neck. Thyroid function test revealed that the patient was in the euthyroid state. Fine-needle aspiration was attempted, but the aspirate was unsatisfactory due to obscuring blood. The patient refused for a repeat test. Total thyroidectomy with lymphadenectomy was done with an uneventful postoperative period, and the tissue was sent for histopathological examination.

On gross examination, a single well-circumscribed gray – white nodule in the left lobe, measuring 25 mm × 20 mm with no evident capsule was seen [Figure 1]. Microscopy of the nodule revealed an unencapsulated tumor composed of cells with abundant eosinophilic cytoplasm (oncocytes), arranged in the papillary pattern [Figure 2]. Nuclei showed grooves with ground glass chromatin [Figure 3]. Papillary stalks were infiltrated by lymphocytes and plasma cells. Lymphovascular extension was not seen. The surrounding thyroid tissue showed features of lymphocytic thyroiditis [Figure 4]. The lymph nodes showed no metastasis. Immunohistochemical examination was not performed in this case as the morphological features were sufficient for the diagnosis. A final diagnosis of Warthin-like variant of PTC was made.

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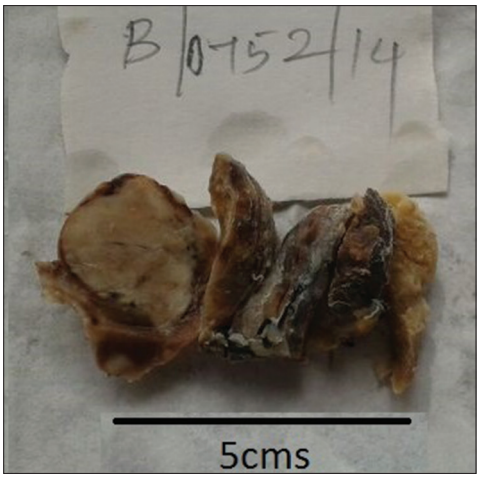

Figure 1: Gross photograph showing circumscribed gray – white nodule in the left lobe of the thyroid

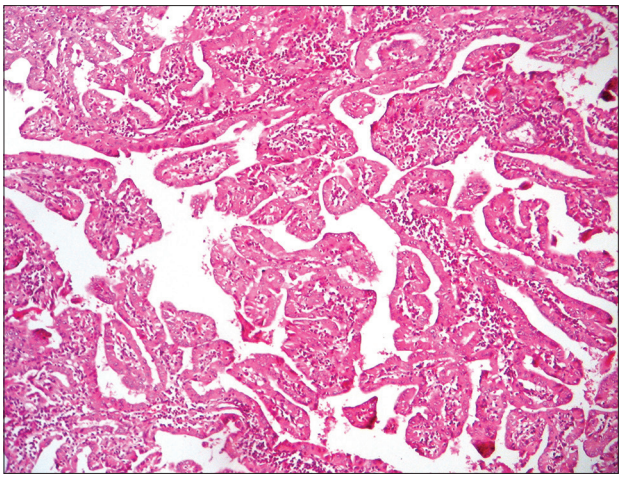

Figure 2: Microphotograph showing papillae lined by oncocytes with lymphocytic infiltrate in the stalks. H and E, ×100

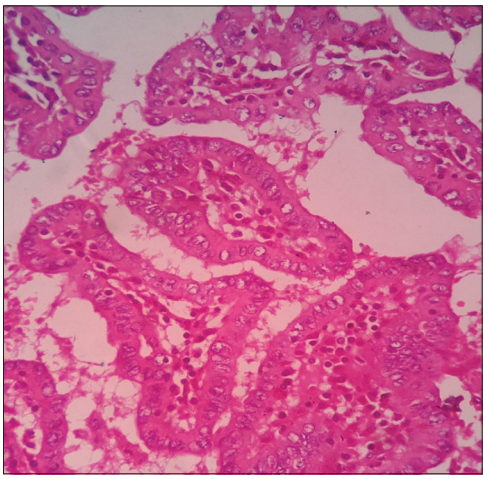

Figure 3: Microphotograph showing oncocytes with ground glass chromatin and grooves in the nucleus. H and E, ×400

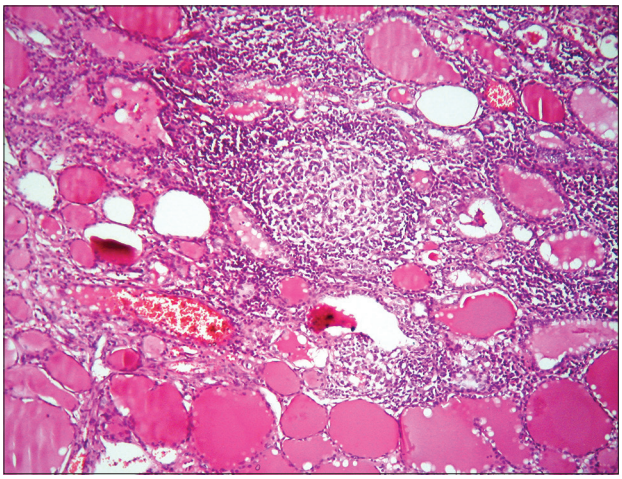

Figure 4: Microphotograph showing lymphocytic thyroiditis in the adjacent thyroid tissue. H and E, ×100

The patient is disease free since 1 year with undetectable thyroglobulin levels.

DISCUSSION

Warthin-like variant of PTC was first described by Apel *et al*. in a series of 13 cases and was named so due to its histological resemblance to Warthin tumor of salivary gland. They identified four important histological features to diagnose these cases – papillary architecture, oncocytic change, nuclear features of PTC, and finally dense infiltrate of lymphocytes.[2] Molecular studies have revealed that BRAF and RET mutations are commonly seen in Warthin-like variant, supporting the evidence that it is indeed a variant of PTC.[4]

Warthin-like PTC is more common in women, with a highest prevalence in the fourth decade with a mean age at presentation being 47.5 years.[3] The preoperative diagnosis of this variant by cytology has also been reported, with features such as – papillary clusters or monolayered sheets of oncocytes with nuclear features of PTC in a heavy lymphoid background.[5] In our case, the fine-needle aspiration revealed only obscuring blood, which could be explained by high vascularity noted in ultrasonography.

Most oncocyte rich tumors of the thyroid appear brown in color, but occasionally can be gray – white in appearance, which was also noted in our case. The oncocytic changes seen in Warthin-like PTC may be related to Hashimoto's/lymphocytic thyroiditis, as this variant is frequently associated with autoimmune thyroiditis (88%).[3,6] The papillary processes of this tumor show heavy lymphocytic infiltrate in its stalk. Previous studies have shown that the presence of lymphocytic stroma in many thyroid tumors is associated with favorable prognosis, probably explaining its good clinical behavior.[2,4]

Warthin-like tumor should be differentiated from other oncocyte rich thyroid neoplasms and lesions with oncocytes such as Tall cell carcinoma, Hurthle cell carcinoma as well as Hashimoto's thyroiditis. While, Tall cell and Hurthle cell variants of PTC have a poor prognosis, requiring aggressive therapy and close follow-up, Hashimoto's thyroiditis is a nonneoplastic lesion of thyroid.[4] Tall cell variant of PTC is characterized by papillae lined by oncocytes whose height is 3 times the width of the cell. Similarly, Hurthle cell variant of PTC is characterized by oncocytic cells with nuclear features of papillary carcinoma lining the papillary architecture. But frequently nuclei in these cases show atypia and focal hyperchromasia.[7] The important distinctive features in Warthin-like variant of PTC are the presence of dense lymphocytic infiltrate in the papillary stalks and the characteristic nuclear features of PTC in the oncocytic cells. Paliogiannis *et al*., have opined that the role of IHC for differential diagnosis of Warthin-like variant from Hurthle cell carcinoma and Tall cell carcinoma is limited and is not necessary if morphological patterns are clear.[8] Hence, even in our case, since the morphology was adequate for the diagnosis of Warthin-like variant of PTC, IHC was not performed.

Due to Warthin-like features on histology, benign lesions like Hashimoto's thyroiditis have been mistaken for Warthin-like variant of PTC. Hashimoto's thyroiditis is characterized by lymphocytic infiltration of the stroma and oxyphilic changes in the follicular epithelium. In this lesion, oncocytic cells do not emerge as the papillary mass and nuclear features of papillary carcinoma are not observed.[7]

Warthin-like variant of PTC was found to have a similar prognostic implication as the conventional PTC.[4] Though the incidence of metastasis into lymph nodes is low, but when the lymph node is close to the involved gland, identifying metastasis may be difficult due to the presence of lymphoid stroma. In a clinicopathological study of 16 cases, Jun *et al*. found that 38% of the patients showed lymph node metastasis and 44% of the cases had extra thyroid extension. But on follow-up, none of these cases showed distant metastasis or recurrence, and hence they concluded that, Warthin-like variant of PTC had a favorable prognostic implication.[3] Two cases with foci of anaplastic changes have also been reported in the literature.[9,10] One case reported by Amico *et al*. had 10% of the entire tumor made up of the anaplastic component, with distant metastasis and death of the patient after 18 months of follow-up. The case reported by Lam *et al*. presented with a locally aggressive tumor and had the dedifferentiated component occupying 5% of the tumor. However, on follow-up of 23 months, the patient was still disease-free. Hence, the prognostic importance of Warthin-like variant of PTC with an anaplastic component is still unknown, requiring large case series and longer follow-up to understand it's biological implication. To conclude, Warthin-like variant of PTC is a rare entity and shows good clinical behavior when compared with other variants of PTC, warranting a proper identification.

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