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Case Report

Papillary thyroid carcinoma of the Warthin like type, a rare variant: A case report

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ABSTRACT

The Warthin-like variant is a rare and relatively unknown entity of papillary thyroid carcinoma. It is frequently associated with Hashimoto's thyroiditis. The cytologic diagnosis is difficult to evaluate because of the overlap of its findings with the classic variant and Hashimoto's thyroiditis. However, this variant has unique morphologic features that make it easily recognizable on histologic examination. These tumors have a resemblance to Warthin's tumor of salivary gland origin.

The few case series reported in the literature have suggested that the mean age, sex distribution, circumstances of discovery, and prognosis are the same as those reported for classic papillary thyroid carcinoma.

We report here a case of Warthin like variant papillary thyroid carcinoma in a 42-year-old female patient followed for Hashimoto's thyroiditis.

1. Introduction

Thyroid cancer is relatively rare, accounting for about 1% of all cancers, however it is the most common endocrine neoplasia. [1]

Papillary thyroid carcinoma (PTC) in its classic form is the most common type of thyroid carcinoma and has the most favorable prognosis compared to other thyroid carcinomas. [1]

According to the current the World Health Organization (WHO) classification of thyroid tumors, there are approximately 15 histological variants of classical PTC with varying biological expression and prognosis. [1]

The Warthin-like variant of papillary carcinoma is a rare variant that was first described by Apel et al. in 1995. [2,3]

In this article we report a case of Warthin-like tumor in a 42-year-old woman, diagnosed in the Department of Endocrinology, Diabetology and Metabolic Diseases at the Avicenne Military Hospital.

The clinic-pathological characteristics are presented with a review of the literature.

2. Presentation of the Case

This was a 42-year-old woman, married, mother of 2 children, with no particular pathological history, notably no thyroid pathology in the family, no cervical irradiation and no other risk factors for thyroid cancer.

followed for a hypothyroidism of peripheral origin for 2 years, of unlabeled etiology and well substituted with 50 μg/d of L-Thyroxine.

The physical examination had found a normal sized thyroid without cervical adenopathies.

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During the follow-up, a morphological and immunological assessment was requested, revealing positive anti-TPO antibodies.

Cervical ultrasound had revealed a right upper polar thyroid nodule measuring 6 mm with hypoechoic echostructure, irregular contours, site of calcifications, classified EUTIRADS 5, associated with a left isthmolobar nodule measuring 3x10mm, totally cystic, classified EUTIRADS 2, without cervical adenopathies.

A fine needle aspiration cytopunction was performed on the right nodule, cytology was consistent with a high cell density nodule with frank epithelial atypia (category V of the Bethesda 2017 classification), requiring histological verification.

The patient underwent total thyroidectomy without lymph node curage.

The postoperative course was marked by the development of hypoparathyroidism.

Pathological examination had revealed a total thyroidectomy specimen with a left lobe measuring 4 × 2 × 2 cm, a right lobe measuring 5 × 2.5 ×2 cm and an isthmus measuring 2.5 × 1x5 cm.

At the opening, at the level of the upper pole of the right lobe, there was a whitish fleshy nodule, measuring 0.5cm in diameter, poorly limited, without proper capsule and with a parenchymatous appearance, the rest of the right and left thyroid parenchyma was whitish in appearance, poorly limited with a diffuse granular appearance.

Microscopically, it was a tumoral proliferation of trabecular, morular, vesicular architecture with some papillae (Figure 1). These structures are bordered by a high cylindrical lining with disrupted polarity (Figure 2). The tumor cells are locally packed together in a dense stroma, rich in lymphoid follicles (Figure 3), these structures are bordered by tall columnar cells. The tumor cells have an enlarged, sometimes round, sometimes oval nucleus with a thickened nuclear membrane and a focally vesicular ground glass chromatin (Figure 4). This nucleus is grooved in places, without pseudoinclusions (Figure 5). The irregularly contoured tumor nuclei overlap in <<pile of plates>> in places. The tumor proliferation has no visible capsule; the adjacent thyroid parenchyma shows lesions of chronic lymphocytic thyroiditis of the Hashimoto type (Figure 6).

The left lobar nodule is limited by a thin, unruptured capsule, it is formed by normal thyroid vesicles without nuclear atypia, the thyroid parenchyma is also the site of lymphocytic thyroiditis.

Moreover, the histological examination did not find any vascular emboli.

The limits of excision were crossed in healthy areas at the level of the 2 nodules.

The immunohistochemical complement was in favor of an epidermoid metaplasia on Hashimoto's lymphocytic thyroiditis.

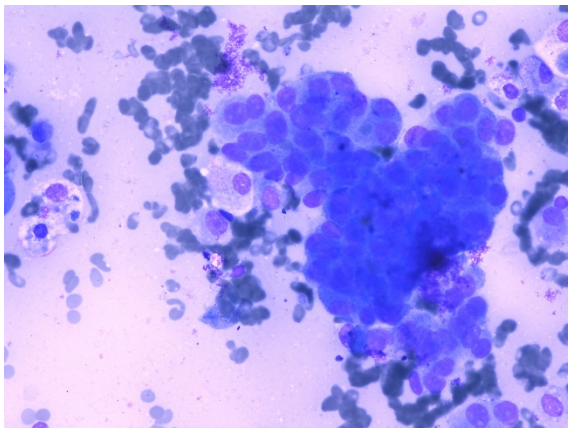

Fig. 1: Thyroid cells organized intrabeculae and papillae (GiemsaX40)

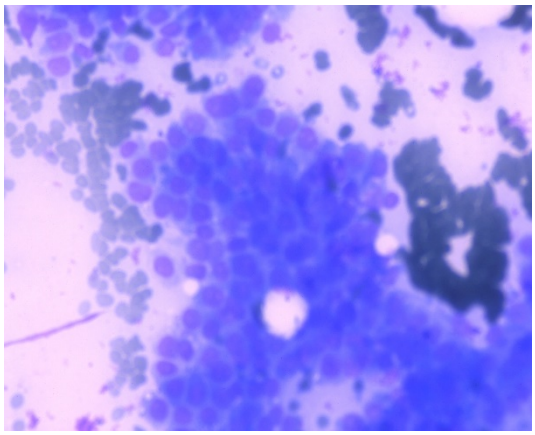

Fig. 2: Large thyroid cells (GiemsaX40)

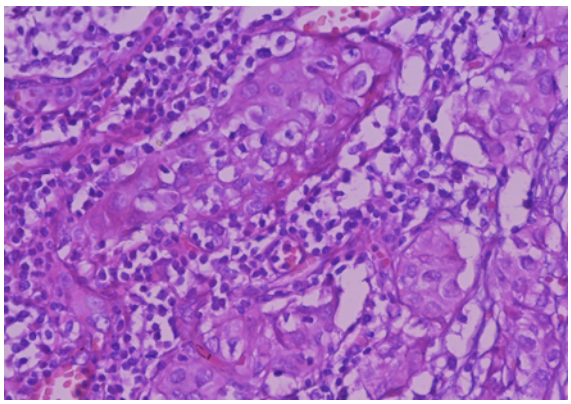

Fig. 3: Tumor with lymphoid stroma. (GiemsaX40)

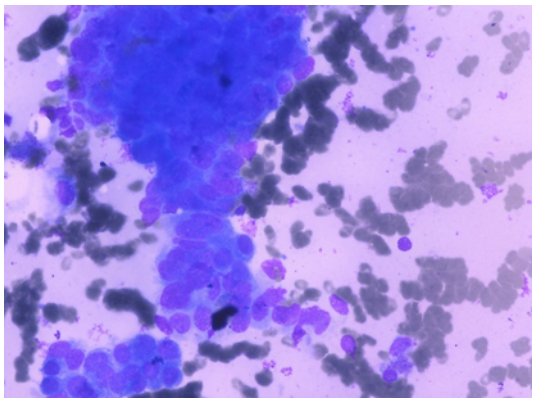

Fig. 4: Cells with salt and pepper chromatin (Giemsa X 40)

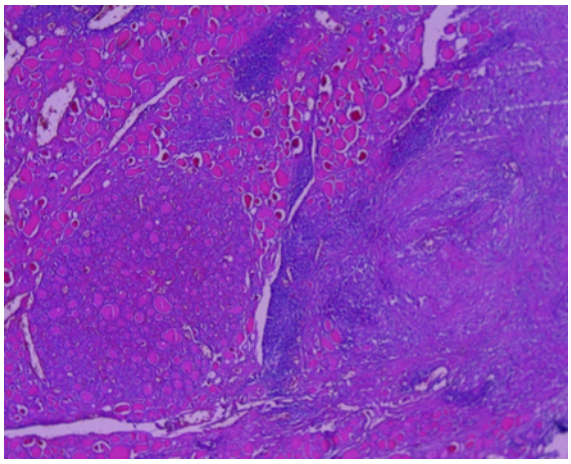

Fig. 5: Hashimoto's lymphocytic thyroiditis (HESX40)

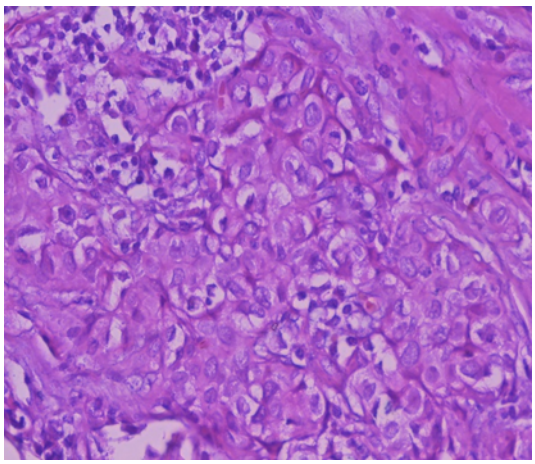

Fig. 6: Papillary nuclear atypia (HESX4)

Based on the above findings, a diagnosis of Warthin-like variant papillary carcinoma was made and only active surveillance was recommended.

After 2 years, the patient remains clinically, radiologically and biochemically free of disease, but the hyperparathyroidism is definite.

3. Discussion

Warthin-like variant is a rare entity of PTC, there are about two hundred cases described in the English literature to date.[4]

First described in 1995 by Apel et al. who chose the name <<Warthin-like tumor >> because of the histological similarity to papillary lymphomatosum cystadenoma or Warthin-like tumor of salivary glands.[2]

It accounts for 0.06 - 1.9% of all PTCs and this may be due to misclassification into classical, oncocytic or high cell variant.

The age of onset varies from 18 to 77 years, the mean age is 44.9 years with a female predominance.[5] The size of the tumor varies from 3 mm to 22 mm with an average of 8.9 mm.[5]

The clinical presentation is the same as for other differentiated thyroid tumors. In single, small, deep lesions there are no signs or symptoms; but in larger, superficial and/or multiple lesions, the patient may present with a goiter, a palpable thyroid nodule with or without dysphonia or dysphagia. Signs of dysthyroidism related to thyroiditis or goiter may also be present.[6]

The imaging data (ultrasound or CT) of Warthin like variants are identical to those of PTC, therefore, the diagnosis of these tumors cannot be based solely on clinical and imaging data.[6]

Cytologic study by fine needle cytopuncture may show clusters of follicular cells and papillary fragments against a background of lymphocytes and plasma cells, which infiltrate the fibrovascular nuclei. Oncocytic cells are often mixed with lymphocytes. The nuclear characteristics of tumor cells are usually those of PTCs and oncocytes.[6]

Cytopuncture can be useful, but its role in the diagnosis of Warthin like variants is still unclear because of the overlapping cytological features between Hashimoto's thyroiditis and classical PTC.[6,7] The correct diagnosis can be really difficult for a pathologist if there is no single dominant feature of such findings.[8]

In our case, a 43-year old female patient with a 6 mm nodule, cytological examination showed on a hematic and low colloid background, a very high follicular cell density. The follicular cells were increased in size and organized essentially in lobules and cohesive clusters. The nuclei are sometimes round and sometimes oval with a visible nucleolus. The nucleocytoplasmic ratio is high.

Histologically, the Warthin-like tumor is characterized by papillae lined with large oncocytic cells with nuclei having a

dense lympho-plasmocytic infiltrate.[2] Various studies have hypothesized that the lymphocytic infiltrate is due to the autoimmune mechanism by the presence of the RET/PTC fusion gene of PTC.[9]

The differential diagnosis of Warthin- like variant includes Hashimoto's thyroiditis, Hurthle cell tumor, high cell variant and oxyphilic variant of PTC, with classic PTC occurring in the context of thyroiditis or with focal oncocytic change.[5]

The correct histopathological study is of utmost importance because some differential diagnoses are more aggressive and have a worse prognosis than the Warthin like type.[9]

The histological criteria are quite characteristic making the role of immunohistochemistry minimal for a definitive diagnosis.[8]

BRAF mutations (valine to glutamic acid substitution (V599E)) have been implicated in the pathogenesis of papillary thyroid cancer and have been reported in more than 80% of cases.[10] The Warthin like variant harbors the BRAF V600E mutation in 75% of cases.[8,9] The presence of this mutation is associated with more extensive disease and a higher recurrence rate, which means a poor clinical prognosis.

Management is based on total thyroidectomy with or without lymph node curage.[8] Postoperative treatment with radioactive iodine and regular follow-up are necessary in high-risk patients with residual thyroid tissue and capsular invasion.[8]

The presence of regional lymph node metastases is rare in the Warthin-like variant and only 3 of 13 patients in the original case series reported by Apel had them.[2] In larger case series, adenopathy has been reported in up to 22% of cases.[8]

At the time of diagnosis, our patient had no regional pathologic lymph nodes.

Warthin like type generally has a similar prognosis to PTC, it seems to be less aggressive when associated with Hashimoto's thyroiditis, the presence of which is considered a good prognostic factor.[8,11] Lymphoid tissue is thought to slow down neoplastic progression.[4,6]

The present case was reported because of its rarity as well as to highlight the problems in the preoperative cytologic diagnosis of this rare tumor. Although the sensitivity and specificity of cytopunction in the diagnosis of PTC is high, some rare variants such as Warthin like may go undetected.[9]

4. Conclusion

Warthin like papillary thyroid carcinoma is a rare variant frequently associated with lymphocytic thyroiditis. Histologically, it resembles Warthin tumors of the salivary glands, with T and B lymphocytes infiltrating the papillae stems lined with oncocytic cells.

The diagnosis is histopathologic and based on morphology rather than immunohistochemistry. Surgical and postoperative management is identical to that of classic PTC, while the prognosis appears to be more favorable.

Larger long-term prospective studies are needed to better understand the biological behavior of these tumors and their clinical and prognostic impact.

5. Source of Funding

None.

6. Conflict of Interest

The authors declare no conflict of interest.

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