

Warthin-like papillary carcinoma of the thyroid

Warthin benzeri tiroid karsinomu

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Summary

Warthin-like papillary thyroid carcinoma is one of the extremely rare variants of papillary thyroid carcinoma. Here, we present a case of the warthin-like variant of papillary thyroid carcinoma in a 45-year-old woman. Microscopically, the tumor was characterized by the papillary growth of neoplastic cells with eosinophilic cytoplasm and prominent lymphocytic infiltration. The surrounding parenchyma of the tumor contained a chronic lymphocytic infiltrate in the pattern typical of Hashimoto's thyroiditis. This morphologic variant should be kept in mind by pathologists because of its characteristic pattern.

Key Words: Thyroid, carcinoma, Warthin-like.

Özet

Warthin-benzeri tiroid karsinomu papiller tiroid karsinomunun oldukça nadir görülen varyantlarından biridir. Biz bu makalede Warthin-benzeri papiller tiroid karsinomu tanısı alan 45 yaşındaki kadın olguyu sunduk. Tümör mikroskopik olarak papiller büyüme gösteren eozinofilik stoplazmalı neoplastik hücreler ve belirgin lenfositik infiltrasyon ile karakterizeydi. Tümör çevresi parankimi Hashimoto tiroiditinde tipik olarak izlenen kronik lenfositik tiroidit içermekteydi. Patologlar bu morfolojik varyantı karakteristik paterni nedeniyle akılda tutmalıdır.

Anahtar Sözcükler: Tiroid, karsinom, Warthin-benzeri.

Introduction

Papillary carcinoma is the most common type of thyroid cancer (1). The cells of papillary carcinoma have characteristic nuclear features. These have acquired so much relevance that currently the diagnosis of papillary carcinoma is dependent on their presence rather than a papillary architecture. Papillary thyroid carcinoma (PTC) exhibits a broad spectrum of morphological appearances, resulting in several distinct histopathological variants. Except for the tall-cell variant, which has a much worse prognosis than the typical papillary carcinoma, the other subtypes do not appear to have any additional prognostic significance. However, the histological variants have their cytological counterparts and their recognition is possible with a relatively small margin of error (2).

Warthin-like tumor of thyroid (WaLTT) is a recently described variant of papillary thyroid carcinoma. Warthin-like variant of papillary carcinoma originally described by Apel et al. is morphologically indistinguishable from its salivary gland eponymic counterpart (3). This was followed by a case report from Vera-Sempere et al. (4). They reported the clinicopathologic features of 17 additional cases of WaLTT. Recently, Kim HH et al. (5), added five cases to the literature. WaLTT is characterized by a papillary growth pattern and brisk lymphoplasmocytic infiltrate filling the core of the papillae with an extensive oxyphilic change of epithelium (3-6). This tumor occurs primarily in women with Hashimoto's thyroiditis and behaves like other papillary carcinomas (7,8).

We report on the cytological and histopathological features of this rare variant of papillary carcinoma in a 45 year-old woman with a brief review of literature.

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Case Report

In 2002, a 45 year old woman was admitted to our hospital because of a mass in the neck, palpitation and dyspnea. Physical examination was unremarkable except for an enlarged bilateral lobe of the thyroid. There was no adenopathy in the neck. Thyroid hormone levels; triiodothyronine (T3), and thyroid stimulating hormone (TSH) were normal but thyroxine (T4) was high. Ultrasound examination revealed a 1.6 cm solid mass in the right lobe of the thyroid. The thyroid lesion had a normo-hypoechoic pattern at the sonographic examination. Eight months later, thyroid hormone levels T3 and T4 were normal but TSH was high. Fine needle aspiration yielded high cellularity consisting of epithelial cells admixed with scattered lymphocytes in the background (Figure-1A).

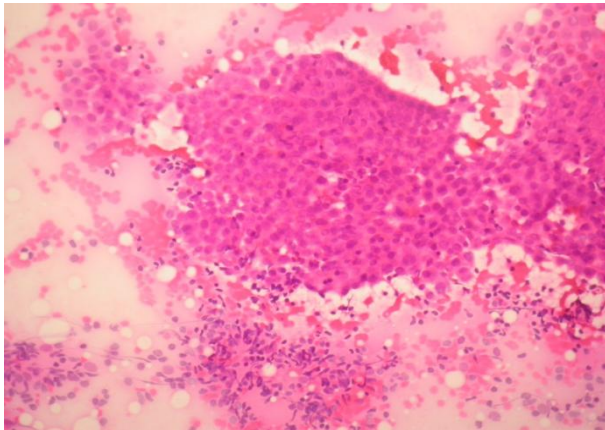


Figure-1A. Papillary tissue fragment lined by tumor cells with intermingling lymphoplasmatic cells (hematoxylin-eosin, original magnification x100).

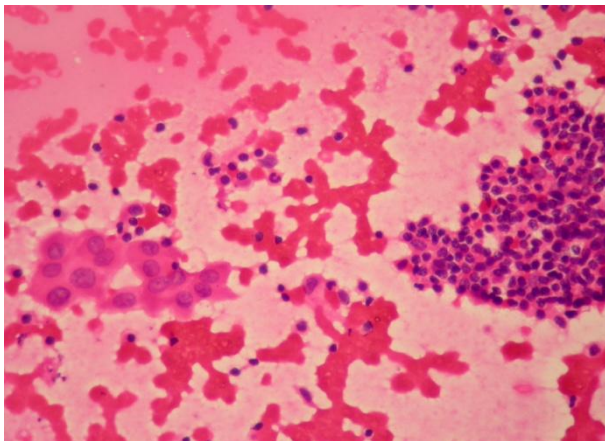


Figure-1B. Tumor showing prominent oncocyctic epithelial cells with abundant deeply eosinophilic cytoplasm. (hematoxylin-eosin, original magnification x200).

Tumor cells having a dense, eosinophilic, granular cytoplasm which appeared gray blue on a giemsa stain, and with sharp cytoplasmic outline, were interpreted as Hurthle cells. These epithelial cells had intranuclear

cytoplasmic inclusions (Figure-1B). The epithelial cells were arranged singly, in monolayered sheets (Figure-1C). A diagnosis of Hashimoto's thyroiditis or oncocyctic neoplasm was suggested. A total thyroidectomy was performed without postoperative complications. Macroscopic examination of the surgical specimen showed a firm enlarged thyroid of 6 × 5 × 3 cm. The cut surfaces were yellowish-white and firm, with a nodular appearance. The thyroid had an encapsulated tumor measuring 1.2 cm in its largest dimension with a grey white cut surface. The tumor was characterized by papillary architecture and oncocyctic tumor cells with nuclear features of papillary carcinoma arising in a background of lymphocytic thyroiditis (Figure-2). The surrounding parenchyma of the tumor contained a chronic lymphocytic infiltrate in the pattern typical of Hashimoto's thyroiditis (Figure-3).

Thirty four months after the operation the patient is in good condition overall and no recurrence has been observed.

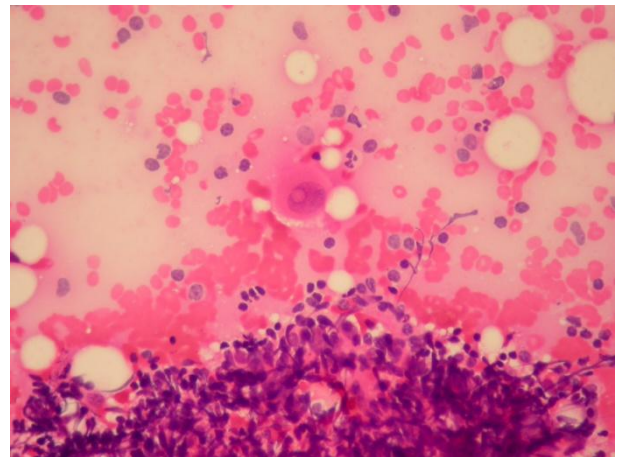


Figure-1C. Intranuclear inclusion (hematoxylin-eosin, original magnification x200).

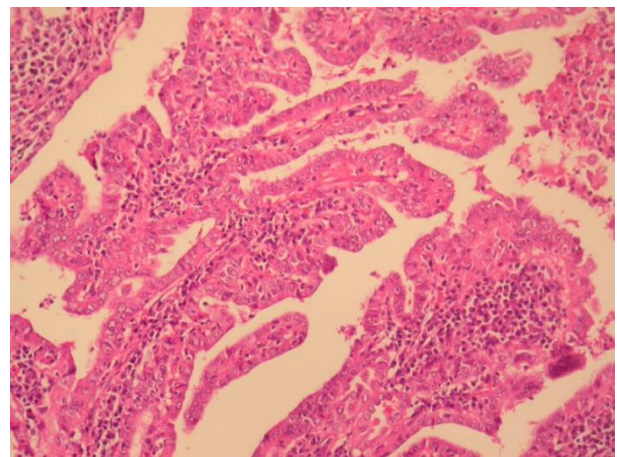


Figure-2. Histopathology showing the papillae lined by oxyphilic cells with severe lymphoplasmacytic cells (hematoxylin-eosin, original magnification x200).

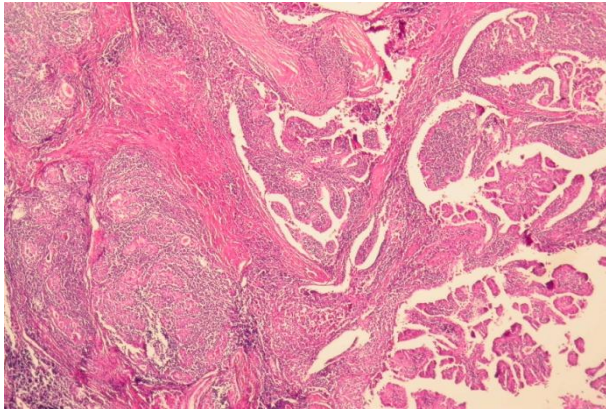


Figure-3. Cystic papillary tumor arising in a background of lymphocytic thyroiditis (hematoxylin-eosin, original magnification x200).

Discussion

Warthin-like variant of PTC is named as such due to its resemblance to 'Warthin's Tumor' of salivary glands (3). These tumors usually arise in thyroid glands and show a papillary growth pattern, associated with a brisk lymphoplasmacytic infiltrate filling the core of papillae (3,7).

The cytologic features of the Warthin-like variant of papillary thyroid carcinoma may be confused with those of other thyroid neoplasms with different prognoses and treatment modalities. From the practical point of view, it is important to be aware of papillary carcinomas with a dense stromal lymphoplasmacytic infiltrate, particularly because of potential confusion with Hashimoto's thyroiditis (HT) on fine-needle aspiration. Although some cases of HT may show papillary hyperplasia of the epithelium, these cells lack the nuclear features characteristic of true papillary carcinoma, with the exception of intranuclear cytoplasmic inclusions, which may be seen in some Hurthle cells. WaLTT of PTC show papillary clustering and fewer lymphoplasmacytic infiltrations than HT. These findings are the main differential points between HT and WaLTT (9).

Tall cell variant of PTC should be differentiated from WaLTT. Tall cell variant has distinctive cytologic features, including a tall columnar shape (cell height at

least twice the width), oxyphilic cytoplasm, and formation of papillae (10). The histologic pattern of WaLTT is distinctly papillary, with abundant stromal lymphocytes and without trabecular features. Although the cells of this tumor display cytoplasmic oxyphilia with granularity, they lack a columnar shape and nuclei are predominantly of the typical optically clear. There is often confusion between tall cell variant of PTC and WaLTT, and the distinction is imperative because the behaviour of the former may be aggressive (11), whereas the biology of the latter is not different from the usual papillary carcinoma (3).

Oxyphilic variant of PTC is an uncommon variant of thyroid cancer. In this variant, the nuclear features remain those of papillary carcinoma but the cytoplasm is abundant and has a granular oxyphilic quality (12). The cytologic findings are similar to those described for WaLTT, except for the absence of lymphocytes (9,13).

These RET rearrangements are restricted to the thyroid gland and are specific for PTC. This gene, which is not normally expressed in follicular epithelium, is rearranged in PTC (14). The RET/PTC rearrangements are considered to be early events in tumorigenesis, and are present even at high frequency in microcarcinomas. As such, they serve as sensitive diagnostic markers for controversial lesions, including oncocytic PTC (15). Their specificity makes them valuable for the cytologic diagnosis of thyroid nodules. In general, they are not thought to be of prognostic value. The diversity of *RET/PTC* rearrangement may be reflected in the morphology of tumors. WaLTT has been found to express RET/PTC (as a further link with papillary carcinoma) (15).

According to the limited clinical follow up data, WaLTT behaves similarly to conventional PTC (3, 7). In our case, control examinations after the operation did not show any signs of recurrence.

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