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CASE REPORT

Warthin-like Tumor of the Thyroid – a Case Report

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A case of Warthin-like tumor of the thyroid (WaLTT) with cervical lymph node metastasis is presented. The problems of the FNA diagnosis of this type of tumor is discussed as well as the histogenesis, nature and behaviour of this peculiar tumor. (Pathology Oncology Research Vol 5, No 4, 315–317, 1999)

Keywords: Warthin-like tumor, thyroid gland, papillary carcinoma, Hashimoto thyroiditis, metastasis

Introduction

Papillary carcinoma (PC) is the most common form of thyroid csarcinoma and generally has a more favorable prognosis than other carcinoma types. Within this group of papillary carcinomas, several morphologic variants have been described. One of them is the so called tall-cell variant (TCV), which has a less favourable prognosis than the classical type. An other variant of papillary carcinoma is the oxyphilic Hürthle-cell variant (OPC), a neoplasm with papillary pattern lined by oncocytic epithelium and also has a more aggressive behaviour than the classical form.

A recently described variant is the Warthin-like tumor or tall-cell variant with extensive lymphocytic infiltration of papillary thyroid carcinoma. It is less aggressive than TCV.

Case report

35-year-old Caucasian woman with goiter since puberty and treated by drugs. 4 years ago the neck became swollen, the thyroid increased in size. In December 1996 she developed nervousness, diarrhoea, and sweating. Her voice faded during intermittent bronchitis.

Thyroid scintigraphy showed mild nodular swelling of the thyroid with decreased isotope uptake in the middle third of the left lobe and uneven activity distribution in the right lobe. Fine needle aspiration (FNA) was performed, which showed little colloid together with several lymphoid cells and groups of follicular epithelial cells, some with oncocytic change. These epithelial cells had prominent nucleoli, fine chromatin structure, but inclusions or grooves were not seen. (*Figure 1*) These findings pointed towards thyroiditis and surgical evaluation was suggested. The routine laboratory findings showed euthyroid state, the chest x-ray revealed no abnormality. Left lobe thyroidectomy was performed.

A 3 cm diameter irregular thyroid nodule with the surrounding capsule was received. The cut surface bore a 2 cm diameter grayish-white, a 1 cm diameter brownish-

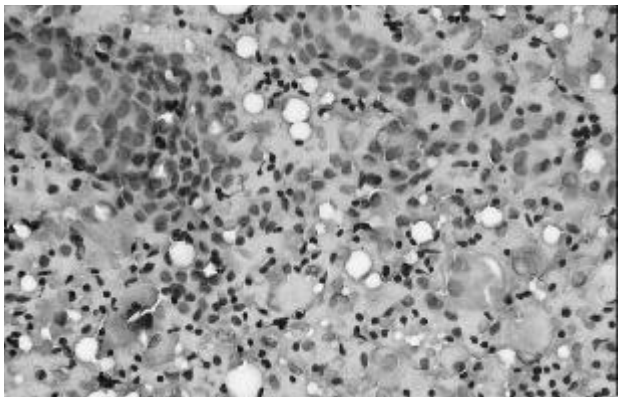

Figure 1. In a lymphoid background there are some groups of slightly oncocytic thyroid epithelial cells. This picture was suggestive of Hashimoto thyroiditis.

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yellow and a 0.5 cm diameter greyish-brown area. There was normal thyroid tissue in between these nodules. Microscopically the thyroid showed a well demarcated tumor with papillary structure. The fibrovascular core of the papillae contained an intense lymphoplasmacytic inflammatory infiltrate (*Figure 2*). The tumor infiltrated the surrounding fibrous capsule. The tumor cells' nuclei were monomorphic, clear, ground-glass like with grooves and eosinophilic nucleoli. The cytoplasm was also eosinophilic (*Figure 3*). There were several lymphoid aggregates in the adjacent normal parenchyma, some with germinal center formation. All these features were suggestive of a WaLTT. The patient was emitted under careful follow up, no other therapy was administered.

After 2 years of symptom-free period, she developed a "nodule" in front of the middle portion of the right sternocleid muscle. It measured 2 cm in diameter, was firm and mobile. The FNA displayed groups of tumor cells in a lymphocytic background. The tumor cells showed oncocytic features, but no clear papillary configuration was observed. Because of the anamnestic data metastasis of the thyroid was diagnosed. Later the nodule was removed and histologically the diagnosis confirmed.

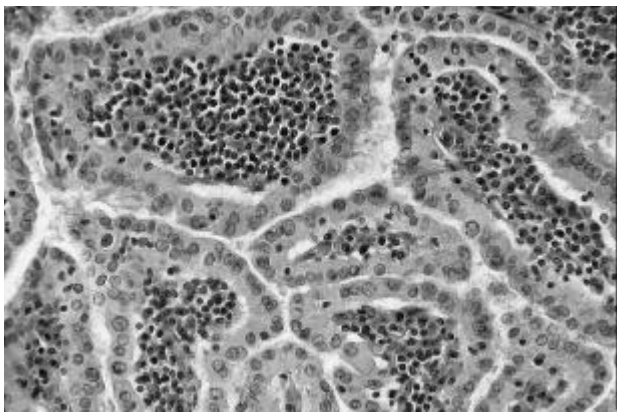

Figure 2. A papillary tumor with oncocytic features. Note the intense lymphocytic infiltrate of the papillary stalk.

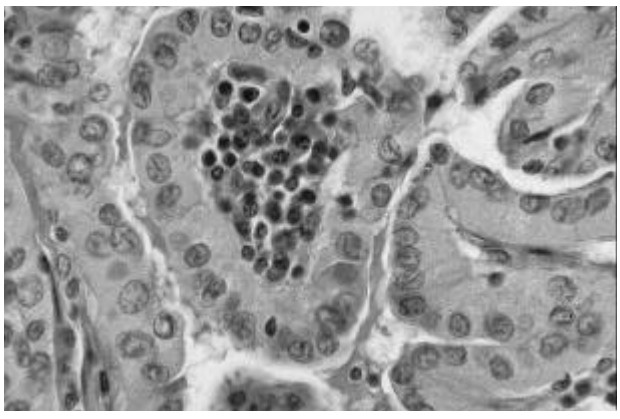

Figure 3. Note the monomorphic, ground-glass like, groove containing tumor cell nuclei.

Discussion

16 cases of WaLTT was reported between 1995 and 1998. They all showed histologic similarities to the Warthin tumor of salivary gland (prominent papillary pattern, oxyphil cell changes in the lining epithelium, lymphocytic infiltrate of the fibrovascular core). According to several authors[1,8] the papillae of WaLTT are often lined by epithelial cells with abundant granular eosinophilic cytoplasm and pleomorphic nuclei resembling Hürthle-cells. They frequently show nuclear features of PC (crowded, molded, overlapped nuclei with nuclear grooves and intranuclear cytoplasmic pseudoinclusions). These nuclear features differ somewhat from that of OPC, which frequently lacks cytological characteristics of diagnostic value in conventional PC and where the nuclei are hyperchromatic with visible nucleoli. Within the surrounding parenchyma there is usually a diffuse chronic lymphocytic thyroiditis characterised by lymphoid aggregates. Our histological findings correlated with that of the above mentioned authors.

However, our FNA-findings differed from that described by most authors. The preoperative smears lacked the typical characteristics, such as multilayered and papillary clusters associated to single cells with occasional nuclear grooves and inclusions, multinucleated giant cells. Our smear was more characteristic of Hashimoto thyroiditis with marked lymphocytic population and clumps of follicular epithelial cells with prominent nucleoli, some of them showing oncocytic changes, but without inclusions or grooves.

Apel et al descibed 13 cases of WaLTT.[1] After careful follow-up, they first described, that this variant of papillary thyroid carcinoma behaves like the classical form and they suggested the role of immunomechanism in its pathogenesis. Vera et al[8] in 1998 described a case by which they suggested that WaLTTs were hybrids between TCV and OPC. The cytological and immunohistochemical profile supported their theory, even though the antithyroglobulin antibody proved to be negative (described by Ozaki et al[6] as well) According to Vera's study,[8] the monoclonal antibody 113-I showed finely granular positivity in the epithelium-lining papillae. Another antibody, CD15 (Leu-M1) showed membranous staining pattern both in WaLTT and TCV. According to Ostrowski et al,[5] CD15 immunostaining is a distinctive feature of TCV and is also indirectly an immunohistochemical marker for advanced stages of disease and tumor-associated mortality. According to Vera, this affirmation contrasts with the overall good prognosis of WaLTT.

The presence of inflammatory infiltrate within the tumor is distinct and peculiar to WaLTT. It helps to dif-

ferentiate it from TCV and OPC. The infiltrate is made up of lymphocytes and plasma cells within the fibrous stalks of papillae and also of germinal centers in the thyroid parenchyma. These lymphoid cells display a combined immune profile, the significance of which is unclear. According to Okayasu et al,[4] they probably represent an association between chronic lymphocytic thyroiditis and thyroid papillary carcinoma. The RET/PTC fusion gene has also been implicated in this association.[9] Another hypothesis suggests that this lymphocytic infiltration represents a host immune response to the tumor, which may explain its relatively good prognosis.[7] T-cells in direct proximity to tumor cells may be involved in specific immune lysis of these cells or they may merely be recapitulating normal homing mechanisms into mucosal epithelium.[2,3]

The presence of lymph node metastasis is not a common feature among the cases described in the literature. According to the 13 cases described by Apel et al,[1] only 3 had lymph node metastasis. Therefore it may be very important to prove a lymph node metastasis by lymph node FNA. That is not problematic if we deal with a distant metastasis. However, if the affected node is close to the thyroid gland, it is very difficult to distingiush the primary from the metastatic tumor because both conditions has the same lymphoid background.

From this article, two important things must be emphasized:

1. to distinguish WaLTT from Hashimoto thyroiditis. Useful features are the presence of pseudoinclusions and grooves in WaLTT and, paradoxically, the more pleomorphic nuclear features in Hashimoto thyroiditis.

2. the difficulty in the detection of the metastasis of WaLTT by FNA if the metastatic lymph node is quite near to the thyroid gland. In these cases precise radiological detection can distinguish between metastasis or primary tumor.

References

1. *Apel LR, Asa LS, Livolsi VA:* Papillary Hürthle cell carcinoma with lymphocytic stroma. Am J Surg Pathol 19:810-814, 1995.
2. *Jarry A, Cerf-Bensussan N, Brousse N, et al:* Same peculiar subset of HML1+ lymphocytes present within normal intestinal epithelium is associated with tumoral epithelium of gastrointestinal carcinomas. Gut 29:1632-1638, 1988.
3. *Kradin RL, Bhan AK:* Tumor infiltrating lymphocytes. Lab Invest 69:635-638, 1993.
4. *Okayashu I, Fujiwara M, Hara Y, et al:* Association of chronic lymphocytic thyroiditis and thyroid papillary carcinoma . A study of surgical cases among Japanese, and white and African Americans. Cancer 76:2312-2318, 1995.
5. *Ostrowski ML, Merino MJ:* Tall cell variant of papillary thyroid carcinoma. A reassessment and immunohistochemical study with comparison to the ususal type of papillary carcinoma of thyroid. Am J Surg Pathol 20:964-974, 1996.
6. *Ozaki O, Ito K, Mimura T, et al*: Papillary carcinoma of the thyroid. Tall cell variant with extensive lymphocyte infiltration. Am J Surg Pathol 20:695-698, 1996.
7. *Schröder S, Schwarz W, Rehpenning W, et al*: Dendritic/Langerhans cells and prognosis in patients with papillary thyroid carcinomas: immunohistochemical study of 106 thyroid neoplasms correlated to follow-up data. J Clin Pathol 89:295-300, 1988.
8. *Vera-Sempere FJ, Prieto M, Camanas A:* Warthin-like tumor of the thyroid: a papillary carcinoma with mitochondrion-rich cells and abundant lymphoid stroma. A case report. Pathol Res Pract 194:341-347, 1998.
9. *Wirtschafter A, Schmidt R, Rosen D, Kundu N, et al*: Expression of the RET/PTC fusion gene as a marker for papillary carcinoma in Hashimoto's thyroiditis. Laryngoscope 107:95-100, 1997.