An unusual oncocytic papillary thyroid carcinoma with abundant lymphoid stroma bearing a resemblance to Warthin’s tumor of salivary gland is described. We report a rare case of a Warthin-like tumor variant of papillary thyroid carcinoma in a 41-year-old-woman. Histologically, the tumor was characterized by oncocytic follicular cells showing nuclear features reminiscent of papillary carcinoma and lymphoid rich stroma. The surrounding non-neoplastic thyroid parenchyma showed focal peritumoral lymphocytic thyroiditis.

Key Words: Papillary carcinoma-Thyroid-Warthin’s tumor

Several morphological variants of papillary thyroid carcinoma are recognized, based on its architecture, growth pattern, and cellular and stromal features. Recently, an unusual oncocytic papillary thyroid carcinoma with abundant lymphoid stroma was described.1-7 Apel et al. called this subtype a ‘Warthin-like tumor’ because it resembled Warthin’s tumor of the salivary gland.1 We report a case of a Warthin-like tumor variant of papillary thyroid carcinoma and present a review of the literature.

CASE REPORT

Clinical Findings

The patient was a 41-year-old-woman with no remarkable personal or family medical history. She had no history of chronic thyroiditis or Hashimoto’s disease. In December 2003, she presented for a general check up. Neck ultrasonography revealed an irregularly shaped hypoechoic nodule of approximately 11 mm in diameter in the left thyroid gland. After fine needle aspiration cytology, she was diagnosed as having thyroid papillary carcinoma. Routine laboratory studies, including a thyroid gland function test, revealed no abnormalities. A left lobectomy was done on the 8th January 2004.

Pathologic Findings

The lobectomized left lobe of the thyroid gland measured 3.5 × 2 × 0.8 cm and weighed 10 gm. On sectioning, a well circumscribed, oval, firm, pale brown mass with focal cystic changes, measuring 1.5 × 1.1 × 1.0 cm was observed, which was grossly confined to the thyroid. Microscopically, the mass was characterized by the papillary growth of neoplastic cells and prominent lymphocytic infiltration. Papillae protruded into the cystic cavities and were lined by large polygonal cells with abundant eosinophilic, finely granular cytoplasm (Fig. 1, 2). The nuclei of the neoplastic cells showed the typical nuclear features (optically clear nuclei, nuclear grooves, and intranuclear pseudo-inclusions) of papillary thyroid carcinoma (Fig. 3). Sometimes, the nuclei were larger, pleomorphic with coarsely granular chromatin and prominent nucleoli, similar to Hurthle cells. Moreover, heavy lymphocytic infiltration, composed of predominantly small lymphocytes and sparse plasma cells, was noted within the stals of the papillae (Fig. 2). The surrounding non-neoplastic thyroid parenchyma
showed focal peritumoral lymphocytic thyroiditis. Immunohis-
tochemically, the neoplastic epithelial cells showed moderate to
strong thyroglobulin positivity (Fig. 4A), and stromal lymphoid
elements expressed common leucocytic antigen, a B-cell marker
(CD20), and a T-cell marker (CD45RO) (Fig. 4B, C).

**DISCUSSION**

Since the oncocytic variant of papillary thyroid carcinoma with
lymphoid stroma was first described as a distinctive entity in 1995
by Apel et al., several similar case reports have followed. In
Korea, Kim et al. reported the cytologic features of a similar case.
In the 49 patients of these reports, 44 patients (90%) were women
(present case: women). Age of onset ranged from 23 to 85 years
(mean: 41 years, present case: 41 years), and tumor size was from
0.3 to 5.0 cm in diameter (mean: 2.0 cm, present case: 1.5 cm).

The most striking histological feature was stromal lymphocytic
infiltration with the oncocytic character of epithelial cells, which
causes a strong resemblance to Warthin's tumor of the salivary
gland. The tumor cell nuclei clear manifested papillary carcino-
ma in all patients including the present case. Lymphocytic thy-
roiditis was complicated in 45 of the 49 patients (94%) and also
in the present case. Lymph node metastasis was observed in 10 of
the 49 patients (20%), but was absent in the present case. Al-
though follow-up information was limited, the prognosis was
favorable and similar to that of classical papillary carcinoma in
all reported patients.

Lymphocytic thyroiditis is highly complicated with Warthin-
like tumor variant. It was reported that the lymphocytic infiltra-
tion of surrounding thyroid tissue is induced via an autoimmune
mechanism triggered by the development of papillary carcino-
ma. Matsubayashi et al. reported that its recurrence rate is signifi-
cantly lower in those showing lymphocytic infiltration. These
findings suggest a favorable prognosis for Warthin-like tumor.

Warthin-like tumor variant should be differentiated from other
variants of papillary carcinoma, such as tall cell variant, Hurthle
cell variant, diffuse sclerosing variant, Hurthle cell carcinoma,
Hashimoto’s disease, and extraparotid Warthin’s tumor. Tall cell
variant has eosinophilic cytoplasm and dominant lymphocytic
infiltration. However, tall cell variant is characterized by tall
columnar cells, which are twice as tall as wide, with elongated
nuclei situated at the base. Hurthle cell variant is characterized
by a papillary architecture lined by oncocytic cells with nuclear
features of papillary carcinoma. However, this variant usually
lacks lymphocytic infiltration. Diffuse sclerosing variant has heavy
lymphocytic infiltration. However, diffuse sclerosing variant is
characterized by the diffuse involvement of one or both thyroid

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Fig. 1. The papillae protrude into the cystic cavities.

Fig. 2. The papillae are lined by epithelial cells with abundant eosinophilic cytoplasm and show an extensive lymphocytic infiltration in their stroma.

Fig. 3. The lining epithelial cells show the typical nuclear features (optically clear nuclei, nuclear grooves, and intranuclear pseudoinclusions) of papillary carcinoma.
lobes, dense sclerosis, abundant psammoma bodies, extensive solid foci, and squamous metaplasia. Moreover, it is important not to overinterpret pseudopapillary structures in Hurthle cell carcinoma as Warthin-like variant. Nuclear features of papillary carcinoma must be present. In Hashimoto’s disease, oncocytic cells do not emerge as a papillary mass and the nuclear features of papillary carcinoma are not observed. About 8% of Warthin’s tumors are detected in extraparotid locations such as in the lymph nodes of the cervical region, submandibular gland, minor salivary glands of the oral cavity, pharynx, and larynx. However, true extraparotid Warthin’s tumor in sites other than cervical nodes is not widely accepted and does not show the nuclear features of papillary carcinoma.

REFERENCES

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