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CASE REPORT

Pathology Verified Concomitant Papillary Thyroid Carcinoma in the Sonographically Suspected Thyroid Lymphoma: A Case Report△

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PAPILLARY thyroid carcinoma (PTC) is the most common thyroid cancer and consists of nearly 80% of all cases of thyroid cancer.[1] It is associated with the lowest level of malignancy and an excellent prognosis. Primary thyroid lymphoma (PTL) is a lymphomatous process which develops in the thyroid without involvement of primary lymphoid organs or distant metastases at diagnosis.[2] It is a rare malignancy that accounts for 1%-5% of all thyroid malignancies and less than 2% of all extranodal lymphomas. The incidence of PTL is one or two cases per million.[2, 3] It occurs frequently in elder woman, with a peak incidence in the sixth decade of life.[2, 4, 5] Common clinical feature of PTL is rapidly growing mass in the neck. Diffuse large B-cell lymphoma (DLBCL) is the most common histological subtype of PTL, comprising up to 70% of cases, followed by mucosa-associated lymphoid tissue (MALT) lymphoma, comprising 10% to 23% of PTL.[4-6] Other subtypes such as follicular lymphoma, chronic lymphocytic leukemia/small lymphocytic lymphoma, Hodgkin's lymphoma, and Burkitt's lymphoma are comparatively rare. To our knowledge, the co-occurrence of PTL and PTC is extremely rare, and only 12 cases have been previously reported.[7-15] We report a sonographically suspected PTL case who was pathologically diagnosed with PTL and PTC.

CASE DESCRIPTION

In December 2009, a 53-year-old woman was admitted to local hospital with a palpable mass in the neck. Ultrasonography (US) indicated diffuse lesions of the thyroid gland, but the thyroid hormone determination showed a euthyroidism. She was clinically suspicious of thyroiditis. The patient was, consequently, treated with

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oral medications of traditional Chinese medicine and levothyroxine sodium, and skin patches of herbal medicine. However, these treatments were ineffective and a gradual enlargement of the thyroid gland was confirmed by the follow-up of ultrasound over the period of two years. In April 2012, thyroid US revealed multiple goiters in both lobes of the heterogeneous gland, which supported Hashimoto's throiditis (HT) but could not exclude the possibility of thyroid lymphoma. The patient was subsequently examined by fine-needle aspiration biopsy (FNAB) of the left lobe. The cytology also concurred with the suspicion of HT. A gradual enlargement of the thyroid gland was evident in the subsequent follow-up of ultrasound.

Nevertheless, the patient noticed a progressive enlargement of the neck mass from July 2013 and was referred to our hospital in December 2013. Physical examination revealed visible bilateral goiters that were painless and of poor mobility but no swelling lymph nodes on palpation. Thyroid function test was still normal. US revealed diffuse enlargement of the thyroid gland (measuring 8.3 cm×2.6 cm×2.3 cm of the right lobe, 6.6 cm×2.9 cm×2.1 cm of the left lobe and 1.3 cm of isthmus thickness) with heterogeneous background parenchyma. The imaging showed a defined hypoechoic nodule measuring 4.3 cm×2.2 cm in the left lobe. Several diffuse hypoechoic areas with interspersed linear echogenic strands can be seen in the right lobe and the isthmus. The large area in the right lobe measured 6.0 cm×2.2 cm. Color Doppler showed abundance of blood flow in the hypoechoic nodule and in the surrounding area (Fig. 1). Real time elastosonography displayed most of the nodule was blue and a small part of it was green, which indicated the echoic nodule's hardness was uneven. Most was hard and a small part was relatively soft. While the hypoechoic area was composed of blue, green, and yellow, which reflected the hardness of the area was moderate (Fig. 2). Contrastenhanced US indicated a rapid flushing of bubble into the nodule at the arterial phase and formed a ring-enhancement at the border of the nodule at the wash-out phase (Fig. 3). FNAB of the nodule in the left lobe was performed and cytology combined with immunohistochemistry demonstrated a consistency with HT but without an exclusion of lymphoma.

To make the exact diagnosis, the patient underwent partial thyroidectomy. Left lobe of the thyroid was excised and the intraoperative frozen section still revealed the possibility of lymphoma. Histological pathology combined with immunohistochemistry ($CK19^+$/$TTF\text{-}1^+$/Thy^+/$Bcl\text{-}6^+$/$CD10^-$/$CD20^+$/$CD3^+$/CD30 (Ki-1) $^{+-}$/$p53^+$ B cells with Ki67 of 40%) eventually confirmed the diagnosis of DLBCL of

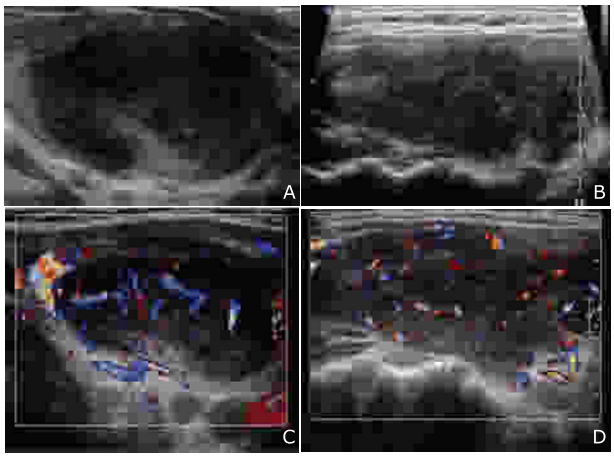

Figure 1. Conventional ultrasonography shows heterogeneous hypoechoic nodule in the left lobe (A) and hypoechoic area in the right lobe with interspersed linear echogenic strands (B). Color Doppler shows abundance of blood flow in the hypoechoic nodule in the left lobe (C) and abundance of blood flow in the hypoechoic area in the right lobe (D).

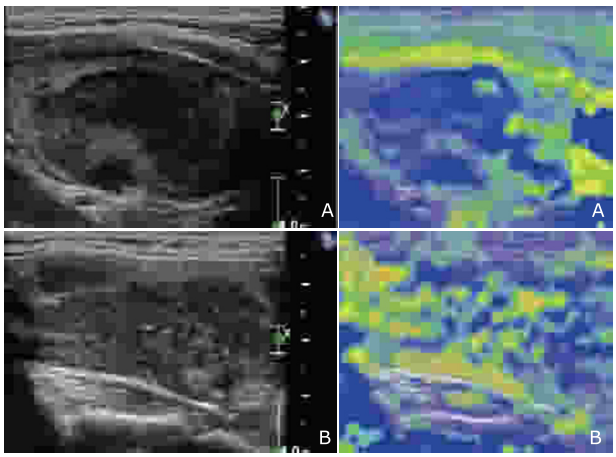

Figure 2. Real time elastosonography shows most of the nodule in the left lobe is blue and a small part of it is green (A). Elasto- sonography shows the hypoechoic area in the right lobe is composed of blue, green, and yellow (B).

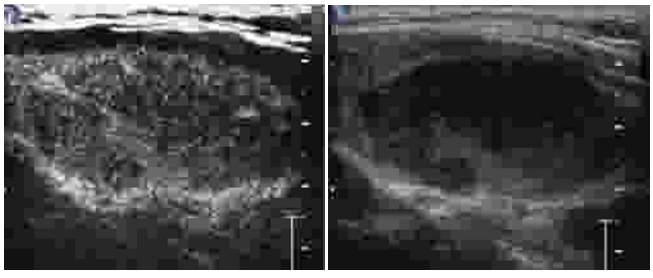

Figure 3. Contrast-enhanced ultrasonography shows a ring-enhancement at the border of the nodule at the wash-out phase.