Hyalinizing Trabecular Adenoma of Thyroid Masquerading as Thyroid Carcinoma

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Hyalinizing trabecular adenoma (HTA) is a recently described benign neoplasm of the thyroid (1). As its name implies, it has two distinctive features; extracellular deposition of an eosinophilic material causing hyalinization without having the features of amyloid, and trabecular arrangements of polygonal, oval and spindling cells with frequent perinucleolar clearing and intranuclear and/or cytoplasmic inclusions (2, 3). We, herein, present a case of HTA masquerading as a thyroid carcinoma with high serum thyroglobulin levels in a patient with multiple hepatic lesions.

A 63-year-old female consulted her local physician with the complaints of right upper quadrant abdominal pain, weight loss and malaise. Following the abdominal ultrasonographic demonstration of metastatic liver lesions, she was referred to our tertiary hospital for a primary malignancy search. Her past medical history was unremarkable. Physical examination disclosed a hepatomegaly of 12 cm below the costal margin and a nodule in the lower-left thyroid lobe. Hematological parameters were normal with a hemoglobin level of 11.9 gr/dL, hematocrit of 38.7%, white blood cell count of 6.7×10^9/L and platelet count of 239×10^9/L. Biochemical analyses were also within normal limits, including liver and thyroid function tests. Ultrasonography and consequent magnetic resonance imaging of the abdomen revealed multiple solid and cystic hepatic lesions with central necrosis. Computerized tomography (CT) of the thorax was normal for the lung fields. Further work-up of upper and lower gastrointestinal series, esophagogastroduodenoscopy and pelvic CT were also free of a pathology. Thyroid scintigraphy with ^{99m}Tc pertechnetate revealed a lower-left hypoactive nodule in the mildly hyperplastic thyroid gland. Fine-needle aspiration of the thyroid nodule was inconclusive after two attempts. Tumor markers of calcitonin, β-hCG, CEA, CA 19–9, CA 125, CA 72–4, CA 15–3 levels were normal, whereas those of thyroglobulin (1240 ng/mL; N: 0–35) and α-fetoprotein (345 ng/mL; N: 0–15) levels were found to be high. Regarding the multiple liver lesions and high thyroglobulin level, the cold thyroid nodule was initially considered to be the primary malignant tumor, so that bilateral total thyroidectomy was performed for diagnostic and therapeutic purposes. However, pathological examination disclosed an HTA of the thyroid with immunohistochemical studies being positive for thyroglobulin and vimentin and negative for thyrocalcitonin and amyloid stains. Subsequent percutaneous liver core biopsy was reported as multifocal hepatocellular carcinoma (HCC) precluding the diagnosis of double primary neoplasms of the HCC and thyroid HTA. Weekly 5-FU administrations of 10 mg/kg and thyroid hormone replacement therapy were instituted. Thyroglobulin level was normalized (40 mg/mL) by the third month but the patient was lost to follow-up later on.

HTA, an uncommon follicular-derived neoplasm of the thyroid, generally shows a strong predilection for women and has a benign biological course without recurrences after total excision. However, infrequently, it may also have a malignant counterpart with capsular invasion similar to conventional follicular adenomas (4). On the basis of its cytological and histological features, HTA might mimic medullary and papillary carcinomas of the thyroid. In order to achieve the exact diagnosis, immunohistochemical and ultrastructural studies are recommended (5, 6).

Elevated levels of thyroglobulin, a tumor marker of differentiated thyroid cancers, can also be found in thyroid adenomas, subacute thyroiditis, toxic and non-toxic goiters, but not in very high concentrations (7). In our case, the triad of cold thyroid nodule, profound elevation of serum thyroglobulin and multiple metastatic-apparent liver lesions masqueraded as differentiated thyroid cancer where definite diagnosis consisted of an HTA of the thyroid without carcinomatous features. Subsequent confirmation of the presence of a second neoplasm of multifocal HCC explained the high serum α-fetoprotein. Other than the production and storage properties, to our knowledge this is the first report of HTA of the thyroid documenting markedly increased serum thyroglobulin levels mimicking a thyroid carcinoma. Regarding our interesting clinical experience, HTA should be strictly included in the differential diagnosis of thyroid neoplasms associated with elevated serum thyroglobulin.

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