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Metastatic Papillary Thyroid Carcinoma Masked by Diffuse Parenchymal Calcification

Yaygın Parankimal Kalsifikasyon ile Maskelenmiş Metastatik Papiller Tiroid Karsinomu

Melia Karaköse, Oya Topaloğlu, Taner Demirci, Müyesser Sayki Arslan, Mustafa Özbek, Mustafa Şahin*, Tuncay Delibaşı

Dışkapı Yıldırım Beyazıt Training and Research Hospital, Department of Endocrinology and Metabolic Diseases, Ankara, Turkey
*Ankara University Faculty of Medicine, Department of Endocrinology and Metabolic Diseases, Ankara, Turkey

Abstract

A patient with papillary thyroid carcinoma most commonly presents with a thyroid nodule or cervical lymphadenopathy. The ultrasonographic features of malign nodules are well known by the clinicians. Incidentally diagnosed papillary carcinomas are frequently microcarcinomas and it is believed that these are clinically inconsiderable. Here, we report an unusual case of papillary thyroid carcinoma that a distinct nodule could not be detected on ultrasound due to diffuse intense parenchymal calcification, however, pathologic diagnosis of papillary thyroid carcinoma was established. *Turk Jem 2014; 1: 17-18*

Key words: Papillary thyroid carcinoma, metastasis, diffuse parenchymal microcalcification

Özet

Papiller tiroid karsinomlu bir hasta genellikle tiroidde nodül veya servikal lenf nodu ile presente olur. Klinisyenler tarafından malign nodüllerin ultrasonografik özellikleri iyi bilinir. Tesadüfen bulunan papiller kanserler sıklıkla mikrokarsinomdur ve bunların klinik olarak önemsiz olduğuna inanılır. Burada biz yaygın parankimal kalsifikasyon nedeni ile ultrasonografik olarak nodül ayırt edilemeyan fakat patolojik olarak metastatik papiller tiroid karsinom tanısı alan bir vaka sunacağız. *Turk Jem 2014; 1: 17-18*

Anahtar kelimeler: Papiller tiroid karsinomu, metastaz, yaygın parankimal mikrokalsifikasyon

Introduction

Papillary thyroid carcinoma (PTC) is the most common form of differentiated thyroid carcinoma. It is often diagnosed during investigation of a thyroid nodule. The ultrasonographic features of nodules such as hypoechogenecity, microcalcification and irregular borders are considered as predictors of malignancy. However, the gold standard in PTC diagnosis is fine needle aspiration biopsy (FNAB) of the suspicious nodule. It is believed that diffuse parenchymal calcification is a benign condition. Here, we report a case of a papillary thyroid carcinoma that a distinct nodule could not be detected due to widespread parenchymal micro-macrocalcifications and, finally diagnosed as metastatic papillary thyroid carcinoma in pathological evaluation.

Case Report

A twenty-two-year-old female patient was investigated for infertility 2 years ago and L-T4 replacement therapy was initiated due to primary hypothyroidism in an outpatient clinic. She was admitted to our clinic while under 125 mcg/day levothyroxine treatment and her laboratory results were found to be as follows; TSH: 3.48 UI / L (range: 0.55-4.78), Free T4: 1.15 ng/dl (range:0.74-1.52). Anti-thyroglobulin antibody was positive but anti-TPO antibody was negative. On physical examination, no thyroid nodule was detected via palpation. In ultrasonographic evaluation, thyroid parenchyma was highly heterogeneous, echogeneity was significantly decreased in some areas and divided with thin fibrous septa. A heterogeneous area with micro-macrocalcifications in the medial region of the right thyroid lobe was noticed (Figure 1, 2). However, a nodule formation was not observed in the same area and around the area of the calcification. The posterior region of this area was inadequately assessed due to the shadow of macrocalcification. The patient had neither history of radiation exposure nor positive family history for the thyroid carcinoma but FNAB of the suspicious area revealed PTC. Furthermore, detailed neck ultrasound was performed before the surgery in order to decide on the extent of surgery. The investigator could not see any pathological lymph node in the central neck region as this area is difficult for observation via ultrasonographic investigation before surgery. Total thyroidectomy and central neck dissection

Address for Correspondence: Melia Karaköse MD, Dışkapı Yıldırım Beyazıt Training and Research Hospital, Department of Endocrinology and Metabolic Diseases, Ankara, Turkey
E-mail: meliakarakose@yahoo.com **Received:** 27/08/2012 **Accepted:** 06/09/2013

were performed for the patient. Pathologic examination revealed papillary thyroid carcinoma (oncocytic variant), tumor size was 1.2 cm (right lobe), and 11 of the 20 resected central lymph nodes were evaluated as metastatic.

Discussion

PTC comprises about 85% of cases with differentiated thyroid carcinomas (1). PTC usually presents with a thyroid nodule or cervical lymphadenopathy. The clinical importance of thyroid nodules rests with the need to exclude thyroid cancer which occurs in 5%-15% (2). Nonpalpable nodules have the same risk of malignancy as palpable nodules with the same size (3). Nodules above 1 cm in diameter have a greater potential to be clinically significant cancer. Nodules below 1 cm in diameter but have suspicious ultrasound (US) findings, associated lymphadenopathy, a history of neck and head irradiation, or a history of thyroid cancer in first-degree relatives must be evaluated for cancer (4).
The ultrasonographic features suggesting the presence of malignancy in a thyroid nodule have been described clearly. These include microcalcifications, marked hypoechogeneity, absent "halo" sign, extraglandular extension, an irregular or microlobulated margin, and a heterogeneous echo structure (5,6). Both benign and malignant nodules may have calcifications. Calcifications observed on thyroid ultrasonography can be classified as macro- or microcalcifications. Microcalcifications appear as small (<1 mm) echogenic foci without acoustic shadowing and specific (in some studies, up to 96%) for thyroid cancer(7). Coarse or dense calcifications are larger than 2 mm and cause posterior acoustic shadowing. Coarse calcifications, either associated with microcalcifications or appearing in the center of a hypoechoic nodule, may be suspicious for malignancy (8). Typically benign nodules are thought to have a higher incidence of macrocalcification. Histological examination of the nodules reveals that psammoma bodies mostly represent microcalcification (9). The presence of microcalcifications in a nodule is strongly suggestive of malignancy in preoperative diagnosis. Individual sonographic features have limitations for prediction of thyroid cancer. Therefore, some series have explored the association of combinations of these features with cancer risk. Fine-needle aspiration (FNA) is the most accurate and cost-effective method for evaluating thyroid nodules. Routine FNA is not recommended for subcentimeter nodules. FNA with US guidance is essential for nonpalpable nodules and small nodules that are less than 1.5 cm in size, predominantly cystic, or located posteriorly in the thyroid lobe (4).
As a result, widespread parenchymal micro and macrocalcifications of thyroid gland is generally known as a benign condition. However, in those cases even if a nodule formation cannot be detected by ultrasound, the probability of malignancy should be kept in mind. FNAB, which is the gold standard for the evaluation of malignancy in thyroid pathologies, must be performed in these cases in order to exclude the thyroid carcinoma.

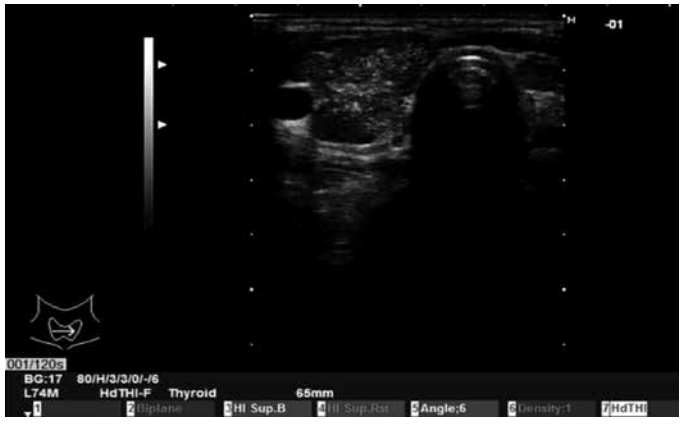

Figure 1. An ultrasound image of the patient (diffuse parenchymal microcalcification)

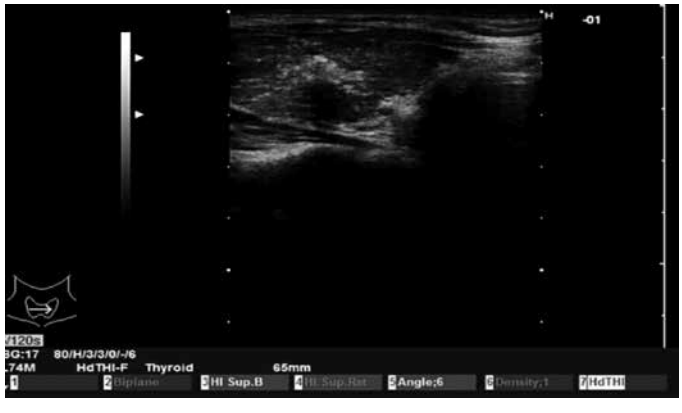

Figure 2. An ultrasound image of the patient (area of dense macrocalcification)

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