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A metastasis of colorectal cancer to the thyroid gland which has also papillary thyroid cancer: A case report

SAMET YALÇIN[1], EKREM ÜNAL[1], SANCAR BAYAR[1], BÜLENT YALÇIN[2], ABDULLAH BÜYÜKÇELİK[2], AYLİN OKÇU HEPER[2], HİKMET AKGÜL[1]

Ankara University, Faculty of Medicine, Departments of [1]General Surgery, [2]Medical Oncology and [3]Pathology, Ankara-Turkey

ABSTRACT

A fifty-years old man underwent Miles' operation (abdomino-perineal resection) for a rectal carcinoma seven years ago. The follow-up examinations had been normal for seven years. A new thyroid nodule developed, and serum carcinoembryonic antigen level was found to be elevated during the last follow-up examination. Total thyroidectomy was performed since the fine-needle aspiration from the nodule in thyroid gland revealed malignant cells, but it was difficult to distinguish metastatic thyroid cancer from this primary one. Pathological examination of thyroidectomy specimen revealed a metastasis to both lobes of thyroid gland, and the nodule in thyroid gland was differentiated papillary carcinoma of thyroid. The present patient is the first example of colorectal carcinoma metastasizing to the thyroid gland which has also differentiated papillary carcinoma. [Turk J Cancer 2008;38(3):142-144]

KEY WORDS:

Colorectal cancer, tumor-to-tumor metastasis, metastatic thyroid cancer, papillary thyroid carcinoma

INTRODUCTION

Tumor-to-tumor metastases are uncommon. It has been reported that the most frequent donor and recipient tumors are lung cancer and renal cell carcinoma, respectively in previous case reports (1). Carcinoma metastasis to the thyroid is rare, although this rate has been reported to be 2-17% in autopsy series among patients with known extra-thyroidal cancers. Malignant melanoma, breast cancer, kidney and lung cancer are more common among cancers metastasizing to the thyroid (2). In the majority of series, metastasis to the thyroid was a result of widely disseminated cancer. However, gastrointestinal cancers which metastasize to the thyroid gland have rare subtypes of tumor (3,4). In this report we present a patient who is the first example of colorectal carcinoma metastasizing to the thyroid gland which has also differentiated papillary carcinoma.

CASE REPORT

A diagnosis of rectal cancer was made in a fifty-years old man, and the patient underwent Miles' operation seven years ago. Pathologic findings were consistent with T2N2 rectal adenocarcinoma. Six cycles of 5-fluorouracil and leucovorin combination which is also called Mayo regimen, were given as an adjuvant basis (5). He also received

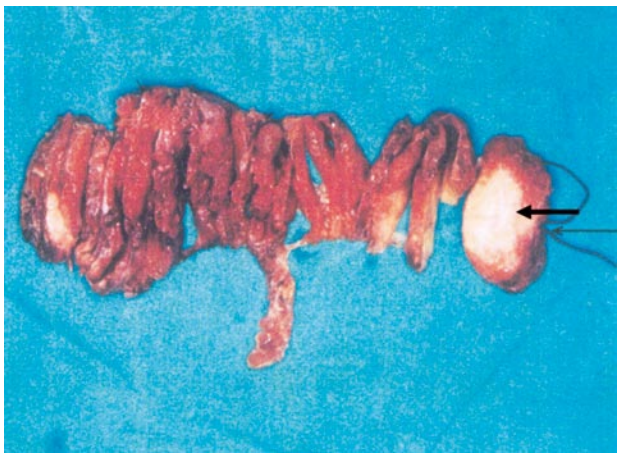

Fig 1. Gross morphology of the resected thyroid specimen. The mass (2.5 cm) in the left lobe (arrow)

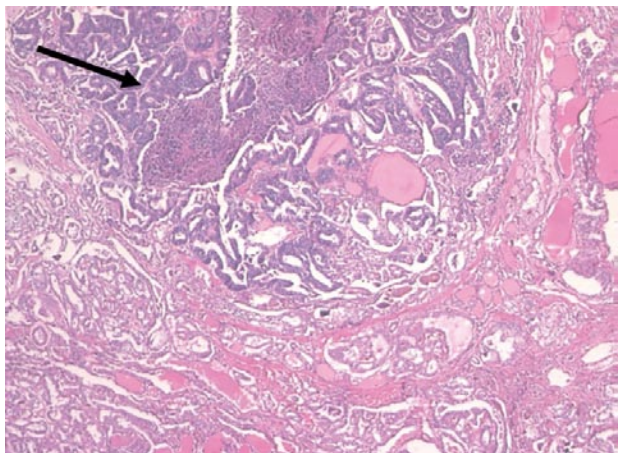

Fig 2. Adenocarcinoma focus in a papillary carcinoma tumor nodule (H&E, x40) (arrow)

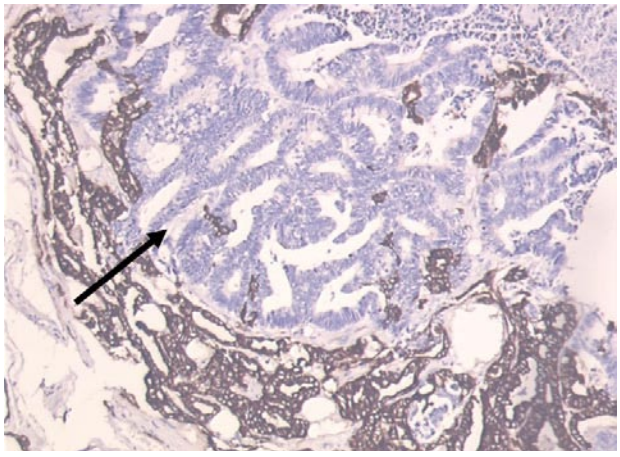

Fig 3. Cytoplasmic CK7 expression of the colon cancer cells with the negativity of the papillary thyroid carcinoma cells (CK7, x100) (arrow)

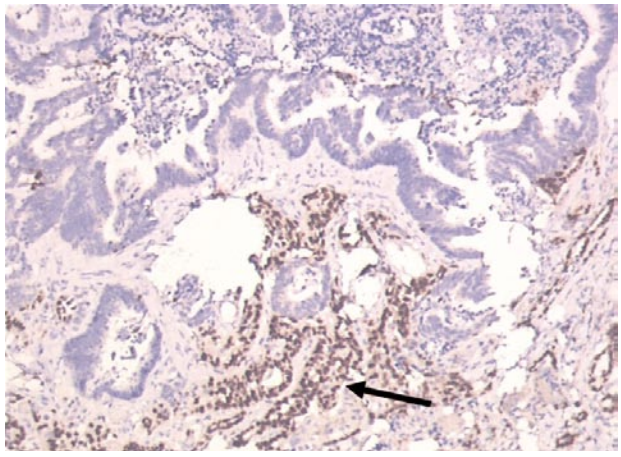

Fig 4. TTF-1 expression of the papillary thyroid carcinoma cells with negativity of the colon adenocarcinoma cells (TTF-1, x100) (arrow)

45 Gy irradiation to the pelvic region, and the patient had been followed up every six months for 7 years. No local or distal recurrence was found until the last follow-up. On last follow-up examination, a hard, painless, 2.5 cm in diameter thyroid nodule was noted. Ultrasonographic examination of neck and the computed tomography (CT) scans of neck revealed irregular solid mass with a 2.5 cm of diameter in the left lobe of the thyroid and also multiple solid nodules in both lobes. The CT scans of abdomen and thorax were normal. The serum levels of carcinoembryonic antigen (CEA) and CA 19.9 were elevated (CEA: 35 ng/mL, CA 19.9: 197 U/mL). Serum levels of free triiodothyronine, free thyroxine, and thyroid stimulating hormones were normal. The fine needle aspiration from the thyroid nodule revealed malignant cells. The primary thyroid cancer could not be differentiated from those metastatic one by cytological examination. Therefore, total thyroidectomy was performed. Pathological and immunopathological examination showed that thyroid gland had both papillary thyroid cancer and metastatic colon cancer (Figures 1-4). He refused chemotherapy following thyroidectomy. Postoperative serum levels of CEA and CA 19.9 were normal. He is now alive with an overall survival and disease-free survival of 10 months.

DISCUSSION

The appearance of a suspicious solitary nodule in the thyroid in association with a previous history of cancer poses a diagnosis dilemma of whether this lesion is a primary thyroid cancer or metastasis. Carcinoma metastasis

to the thyroid is rare in daily oncological practice, although this rate has been reported to be 2-17% in autopsy series among patients with known extra-thyroidal cancers (2).

In addition malignant melanoma, breast cancer, kidney and lung cancer are more common among cancers metastasizing to the thyroid (2). In the majority of series, metastasis to the thyroid was a result of widely disseminated cancer. However, gastrointestinal cancers which metastasize to the thyroid gland have rare subtypes of tumor (3,4). Generally, no endocrine abnormality was reported in those patients who had metastatic thyroid cancer (2-4).

The recurrences of colorectal cancer are usually local. The distant metastases of colorectal cancer to liver and the lung are frequent. The metastasis to thyroid gland as a first sign of recurrence of colorectal cancer has not been reported before. Elevated levels of CEA and CA 19.9 are usually seen in local recurrences in the abdomen or metastasis to the liver or lung. Although the CEA and CA 19.9 levels were elevated, no evidence of local recurrence or visceral metastasis except thyroid gland was found in the present patient. Evaluation of the neck with ultrasonography and CT revealed multiple nodules in the thyroid gland. Differential diagnosis could not have been done between the primary thyroid cancer and metastatic thyroid cancer with cytological examination. The patient underwent total thyroidectomy for both diagnosis and treatment.

There is no reported colorectal cancer metastasis to the thyroid gland which has also papillary thyroid cancer based on the current literature. Our case is the first example of hematogenous spread of colorectal cancer to thyroid gland that has also differentiated papillary thyroid cancer.

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