

# Isolated Thyroid Metastasis of Malignant Melanoma with Unknown Primary Origin

## *Primeri Bilinmeyen Malign Melanomun İzole Tiroid Metastazı*

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### Abstract

Clinically significant metastases to the thyroid gland are very rare; however, they can present as the initial malignancy. We report the case of a 70-year-old woman referred to our Endocrinology outpatient clinic for a thyroid nodule, which was in fact metastasis of malignant melanoma. Because fine-needle aspiration biopsy was not diagnostic and the nodule was considered malignant nodule according to the ultrasonographic examination, bilateral total thyroidectomy and modified radical neck dissection was performed. Histopathologic examination of the nodule was consistent with malignant melanoma. The message from this unusual case is that all thyroid nodules need to be taken seriously and a thyroid lesion may be the sentinel event in a patient with a malignant melanoma. *Turk Jem 2008; 12: 101-3*

**Key words:** Malignant melanoma, metastasis, thyroid nodule

### Özet

Klinik olarak anlamlı tiroid metastazları nadir görülmekle birlikte bazı malignitelerde ilk bulgu olarak karşımıza çıkabilir. Biz burada 70 yaşında tiroid nodülü nedeni ile Endokrinoloji polikliniğimize sevk edilmiş, ince iğne aspirasyon biyopsisi negatif olmasına rağmen ultrasonografik bulguları malign olduğu için operasyona alınmış ve sonradan malign melanom olduğu tesbit edilmiş bir vaka sunacağız. *Turk Jem 2008; 12: 101-3*

**Anahtar kelimeler:** Malign melanom, metastaz, tiroid nodülü

### Introduction

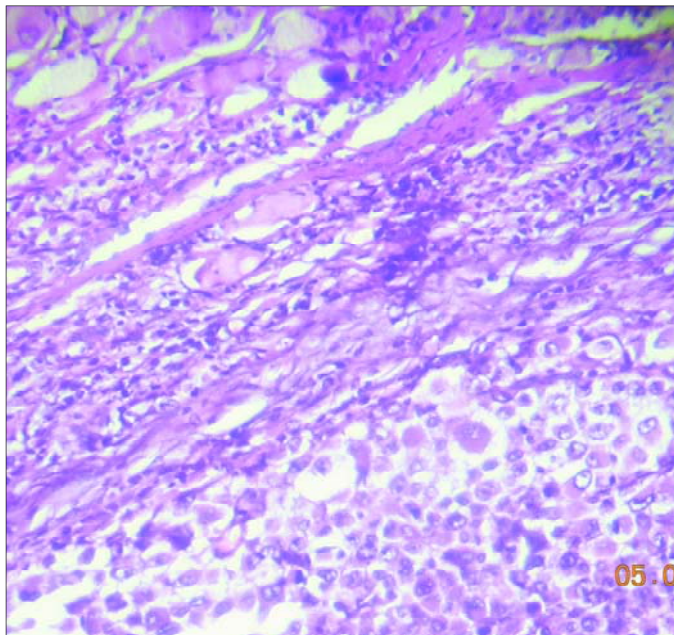
Metastases in the thyroid gland are very rare, and their true incidence has not been clearly established. The overall incidence varies from 1.25% in unselected autopsy series to 24% in autopsy of patients with widespread malignant neoplasms (1-3). On the other hand, there has been an increasing incidence of malignant melanoma (MM), an aggressive skin cancer. Patients with early diagnosis and radical surgical excision of primary tumors have a high probability of being completely cured. Since MM can spread to almost every organ of the body and can metastasize years after resection of the primary lesion, it is still a very important clinical problem.

Herein, we present a very rare condition: a thyroid nodule proven to be malignant melanoma with an unknown primary origin. To the best of our knowledge, there are few similar cases in the literature.

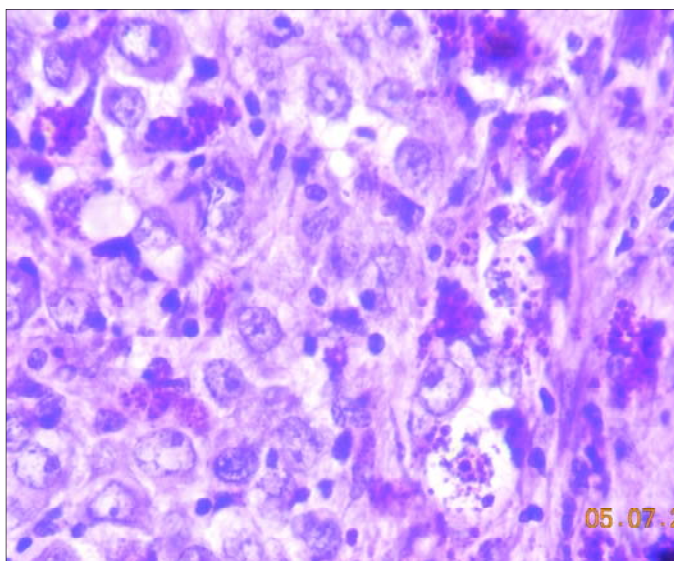
### Case Report

A 70-year-old woman presented with a thyroid nodule that was incidentally noted 4 months previously during a routine examination in another clinic. She had no complaints and no known systemic diseases. Physical examination confirmed the presence of a 5 cm firm nodule in the left lobe of the thyroid gland. The rest of her physical examination was normal including ear, nose, and throat regions. Ultrasonographic examination demonstrated a 5x3 cm nodule consisting of hypoactive, cystic, necrotic areas and irregular edge. Fine-needle aspiration biopsy of the nodule was not diagnostic. Surgical removal was planned, as the nodule was considered to be a primary malignant nodule of the thyroid gland, and the patient wanted definitive treatment to remove it. Because frozen sections of the nodule demonstrated malignancy intraoperatively, the decision was made to perform bilateral total thyroidectomy and modified radical neck dissection.

The surgical specimen was a grossly recognizable thyroid, measuring 8.0x4.5x3.0 cm, comprising left and right lobes and isthmus. The specimen was examined using routine hematoxylin-eosin-stained sections and immunohistochemistry. Antibodies to S100, HMB-45, keratin AE1/AE3, and thyroglobulin were applied to paraffin sections using peroxidase immunohistochemistry. On low-power microscopic examination, the tumor was composed of cellular lobules separated by hypocellular, fibrous bands. Tumor cells featured vesicular nuclei, prominent nucleoli, and occasional intranuclear pseudoinclusions (Figure 1). Mitotic activity was moderate to brisk, and well-demarcated areas of tumor cell necrosis were identified. In scattered foci,



**Figure 1.** Area of tumor composed of epithelioid cells with pink to clear cytoplasm, vesicular nuclei and prominent nucleoli. Thyroid follicles are present at the periphery of the tumor (upper left). H&Ex200



**Figure 2.** Malignant melanoma cells with vesicular nuclei, prominent nucleoli, and intracytoplasmic melanin pigment. H&Ex1000

brown pigment suggestive of melanin was identified, both within tumor cells and within stromal macrophages (Figure 2). Immunohistochemical staining revealed that the tumor cells were strongly positive for S100 protein and HMB-45, but negative for keratin AE1/AE3 and thyroglobulin; these findings were consistent with malignant melanoma. The patient had no history of any pigmented lesion, and reexamination revealed no skin lesion as a primary origin. Computed tomography (CT) examinations of the thorax, abdomen, and brain, and bone scintigraphy were all normal. We could not contact her after discharge.

## Discussion

Despite being second only to the adrenal glands in terms of relative vascular perfusion, the thyroid gland is a rare site of metastases (1,3). They are usually found in patients with advanced cancer and are associated with poor prognosis, with an average survival of 9 months (2). In most autopsy series, breast and lung carcinomas have been the two most frequent metastatic diseases to the thyroid gland. In contrast, renal cell carcinoma is usually the most frequent source in clinical series (4,5). Fine-needle aspiration is highly accurate in the diagnosis of most thyroid malignancies, but false negative results may be obtained. A malignant specimen on fine-needle aspiration is a strong indication for surgery; however, sometimes repeated biopsies may be necessary due to nondiagnostic results.

Aggressive surgical treatment in isolated metastatic renal cell carcinoma has been curative (6). Two patients with uterine adenocarcinoma and one with breast adenocarcinoma were reported to have disease regression with no evidence of tumor recurrence (5). If isolated metastatic cancer to the thyroid is found, surgical resection should be performed, because it often prolongs disease-free survival and may occasionally be curative (5,7,8).

Malignant melanoma is an aggressive cutaneous melanocytic neoplasia. Although melanoma most commonly metastasizes to regional lymph nodes, mortality from melanoma is due primarily to distant spread to visceral organs, commonly the lungs, liver, and brain. However, metastasis to the thyroid gland is a very rare condition in which there are few reported cases (9-12). Bozbora et al and Sheppard et al have reported patients presenting with a thyroid nodule who were different from our case, as they had undergone previous surgery for malignant melanoma; fine-needle aspiration in these cases showed malignant cells (9,10). Gherardi et al reported a localized and asymptomatic metastasis in the thyroid from an untreated choroidal melanoma, which was incidentally discovered by fine-needle aspiration biopsy (11). Bozbora et al reported a case with thyroid metastasis of MM 5 years after the surgical treatment of MM (9). Our case is unique, as the diagnosis of MM was initiated by the presence of a metastatic nodule in the thyroid gland. The message from this unusual case is that all thyroid nodules need to be taken seriously and a thyroid lesion may be the sentinel event in a patient with a malignant melanoma. This highlights the importance of early recognition and management of thyroid metastasis, which contributes to prolonged survival in some patients and prevention of rapid onset of life-threatening complications.

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