Malignant Melanoma metastasizing to the Thyroid Gland: A Case Report and Review of the Literature

Brian Kung
Thomas Jefferson University

Saba Aftab
Thomas Jefferson University

Moira Wood
Thomas Jefferson University

David Rosen
Thomas Jefferson University, david.rosen@jefferson.edu

Let us know how access to this document benefits you
Follow this and additional works at: https://jdc.jefferson.edu/otofp

Part of the Ophthalmology Commons, and the Otolaryngology Commons

Recommended Citation
Kung, Brian; Aftab, Saba; Wood, Moira; and Rosen, David, "Malignant Melanoma metastasizing to the Thyroid Gland: A Case Report and Review of the Literature" (2006). Department of Otolaryngology - Head and Neck Surgery Faculty Papers. Paper 12.
https://jdc.jefferson.edu/otofp/12

This Article is brought to you for free and open access by the Jefferson Digital Commons. The Jefferson Digital Commons is a service of Thomas Jefferson University's Center for Teaching and Learning (CTL). The Commons is a showcase for Jefferson books and journals, peer-reviewed scholarly publications, unique historical collections from the University archives, and teaching tools. The Jefferson Digital Commons allows researchers and interested readers anywhere in the world to learn about and keep up to date with Jefferson scholarship. This article has been accepted for inclusion in Department of Otolaryngology - Head and Neck Surgery Faculty Papers by an authorized administrator of the Jefferson Digital Commons. For more information, please contact: JeffersonDigitalCommons@jefferson.edu.
Malignant Melanoma Metastasizing To The Thyroid Gland: A Case Report And Review Of The Literature

Brian Kung, MD; Saba Aftab, BS; Moira Wood, MD; David Rosen, MD
Department of Otolaryngology – Head and Neck Surgery, Department of Pathology, Anatomy, and Cell Biology
Thomas Jefferson University Hospital, Philadelphia, PA

Abstract

Objective: The thyroid gland is a relatively uncommon site for secondary malignancy. Even less common is metastasis of malignant melanoma to the thyroid gland. We present a case of malignant melanoma metastatic to the thyroid gland presenting as thyroid enlargement.

Study Design: This is a case report which utilizes chart review, intraoperative photographs, radiographic images, and pathology slides.

Methods: A 68-year-old male with no prior evidence of primary skin melanoma presented with a neck mass which tested positive for melanoma. A year and a half following modified radical neck dissection, the patient presented with a diffusely enlarged thyroid gland from which fine needle aspiration revealed metastatic malignant melanoma.

Results: A few months following this, the patient began having seizures and was found on MRI to have metastatic disease to the brain. He developed ventricle dependent respiratory failure and required a tracheotomy for airway management. A biopsy was performed which revealed metastatic melanoma. Postoperatively, the patient was taken for a subtotal thyroidectomy for establishment of a tracheostomy (Figure 4). Biopsies of the resultant neck mass were found to be consistent with metastatic malignant melanoma.

Conclusions: Patients with a history of malignancy and a thyroid nodule present a diagnostic dilemma—tis benign, a new primary, or distant metastasis? Review of this case and the literature strengthens the argument that any patient with a history of malignancy and a thyroid mass should be considered as having metastasis until proven otherwise.

Introduction

The incidence of metastases to the thyroid gland in autopsy series has been reported to range between 1.25-2.24%. The most common sources of metastases are renal cell carcinoma, breast carcinoma, and lung carcinoma. Clinically apparent spread of malignant melanoma to the thyroid gland is rare, accounting for less than 5% of metastatic tumors to the thyroid.

We present a case of a patient with malignant melanoma metastatic to the thyroid gland as an early manifestation of distant metastatic disease, as well as a review of the literature.

Case Report

A 68-year-old male with a 30 pack year history presented with a 1.5 cm left posterior triangle neck mass. Physical exam and radiographs performed at the time failed to reveal a primary tumor. An FNA of the mass at the time revealed a poorly differentiated squamous cell carcinoma. The patient was taken to the operating room for staging endoscopy and a repeat FNA. Again, there was no evidence of a primary lesion, but FNA at this time was suggestive of melanoma, and this diagnosis was confirmed via immunoperoxidase, which showed the cells staining positive for Melan A and S-100 (Figure 1). Biopsies of the nodule, parathyroid, and thyroid were negative. The patient then underwent a left modified radical neck dissection. The posterior triangle mass was discovered to be a lymph node which tested positive for malignant melanoma. All other nodes were negative. No primary for the melanoma was found, and the patient was scheduled for radiation therapy and chemotherapy. However, the patient was reluctant to receive these treatments during follow-up.

Eighteen months later, the patient presented with a 10 cm midline neck mass representing a diffusely enlarged thyroid gland. An FNA was performed which revealed melanoma. The patient underwent an MRI of the neck, revealing a diffusely enlarged cystic thyroid gland with no cervical adenopathy (Figure 2). Two weeks later, the patient began having seizures, and an MRI of the brain revealed a 1.7 cm mass in the region of the anterior septal vermis, with associated mass effect and mild hydrocephalus. This was suspicious for metastasis. A CT scan of the chest, abdomen, and pelvis was obtained, showing a soft tissue lesion in the supraventricular region consistent with metastasis. The patient soon developed ventilator dependent respiratory failure, and was taken for a subtotal thyroidectomy for establishment of a tracheostomy (Figure 3). Histology revealed the thyroid mass to be highly suspicious for metastatic malignant melanoma with extensive necrosis (Figure 4). The patient subsequently required placement of a ventriculoperitoneal shunt to treat the hydrocephalus secondary to the metastatic brain lesion.

Discussion

The case presented above is similar to the few other case reports detailing metastatic melanoma to the thyroid gland. As with our patient, the most common complaint among patients with metastatic disease to the thyroid gland is a neck mass. Some authors have found that the pathology shows replacement of the thyroid by melanoma, but thyroid function remains preserved. Our patient had no evidence of hypothyroidism—his laboratory abnormalities (slightly decreased TSH, normal free T4) likely represent the slight variation in thyroid function tests seen in cutaneous melanoma. Shimaoka et al describes a likely explanation for this phenomenon—it takes weeks to months for total ablation of thyroid function to manifest as hypothyroidism, and most patients do not survive long enough with metastatic tumor for this to become apparent. Most patients do not survive long enough with metastatic tumor for this to become apparent. Most patients do not survive long enough with metastatic tumor for this to become apparent. Although Nakhjavani et al found thyroid metastases in 39% of cases, it is not surprising that melanoma has such a high propensity for the thyroid given its vascularity and the hematogenous route of spread. Melanoma has the ability to metastasize to almost every organ, with the most common sites being lungs, liver, and brain. Although patients with melanoma may have thyroid metastases without consequence, it is rare that a mass in the thyroid would be their only clinically apparent sign of metastatic melanoma. Although our patient was discovered to have additional inguinal lymph node metastases, the thyroid does not metastasize to the brain. He developed ventilator dependent respiratory failure and was taken for a subtotal thyroidectomy for establishment of a tracheostomy (Figure 4). Biopsies of the resultant neck mass were found to be consistent with metastatic malignant melanoma.

The incidence of metastasis to the thyroid gland in autopsy series has been reported to range between 1.25-2.24%. The most common sources of metastases are renal cell carcinoma, breast carcinoma, and lung carcinoma. Clinically apparent spread of malignant melanoma to the thyroid gland is rare, accounting for less than 5% of metastatic tumors to the thyroid. Although our patient was discovered to have additional inguinal lymph node metastases, the thyroid is a relatively uncommon site for secondary malignancy. Even less common is metastasis of malignant melanoma to the thyroid gland. We present a case of malignant melanoma metastatic to the thyroid gland presenting as thyroid enlargement.

The case presented above is similar to the few other case reports detailing metastatic melanoma to the thyroid gland. Is it benign, a new primary, or distant metastasis? Review of this case and the literature strengthens the argument that any patient with a history of malignancy and a thyroid mass should be considered as having metastases until proven otherwise.