

Case Report

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Squamous Cell Carcinoma of Proximal Esophagus with Simultaneous Metastases to Thyroid and Sternum: A Case Report and Review of the Literature

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Clinically significant metastatic spread to the thyroid is considered uncommon in spite of the fact that thyroid is a highly vascularized organ. Though it is not a very uncommon finding at autopsies, it is rare to be found in clinical situations, especially in an individual without a prior history of malignancy. We present an apparently healthy 66 year-old male patient with squamous cell carcinoma of the proximal esophagus presenting as a thyroid nodule along with sternal deposit as a coincidental finding. Esophageal carcinoma rarely metastasizes to the thyroid. This case highlights the importance of thorough work-up when evaluating a thyroid mass/nodule. A high index of suspicion should be kept in mind in order to detect the unusual etiologies of thyroid conditions, especially when clinicopathological features are not characteristic for primary thyroid malignancies.

Key words: Esophageal carcinoma, Squamous cell carcinoma, Thyroid metastasis, Sternal deposit

INTRODUCTION

The thyroid gland is an uncommon site of metastatic deposit despite the fact that it is second to the adrenal glands in terms of relative vascular perfusion. Clinically, metastatic disease of the thyroid has an indolent growth pattern, a feature that results in very few obvious clinical manifestations of thyroïdal involvement in the early course of the disease (1). Esophageal carcinoma is uncommon but its prognosis is poor in the majority of patients, and mortality due to this neoplasm is not far behind of the mortality due to pancreatic carcinomas (2). The thyroid gland is an unusual metastatic site for all types of esophageal carcinoma (2). The metastatic disease of the

thyroid usually indicates a poor prognosis and probably a widespread disease (3). We report a case of an elderly male patient who had thyroid metastasis as well as metastasis in the sternum from the squamous cell variety of esophageal carcinoma.

CASE SUMMARIES

A sixty-six year-old, non hypertensive, non diabetic, heavy alcoholic male who was a known smoker for 20 years, presented with a rapid enlargement in the anterior lower part of the neck along with gradual swelling of upper chest (sternal area) which developed within 3 weeks (Figure 1).



Figure 1. Showing pre-sternal swelling along with thyroid swelling

At presentation, he reported easy fatigability and generalized weakness. He also had anorexia but minimum difficulty in deglutition of solid food for the last week along with hoarseness of voice. He mentioned weight loss during the last one month. The patient did not have any symptom of hypothyroidism, hyperthyroidism or upper respiratory symptoms due to external compression. He had no previous history of long term medicine intake, pulmonary tuberculosis, contact with a TB patient or any surgical interventions. Bowel and bladder habits were normal. He was alert, conscious and co-operative. On physical examination, he had a firm goiter associated with enlarged firm and fixed cervical lymph nodes. He had both sided enlarged supraclavicular lymph nodes (2.5cm×2.5cm) which were firm and non tender. Left lobe of thyroid was enlarged, lobulated and firm. There was a hard, non tender mass over manubrium of sternum with a size of 8cm×5cm, fixed to skin and underlying bone. Breath sounds were normal over both sides. His blood reports: Hb 12 g/dl, total leukocyte count 12,500, fasting blood sugar 101, urea 33 mg%, creatinine 0.80 mg%, serum sodium 136 mEq/L, potassium 4.42 mEq/L, LDH 447 U, total bilirubin 0.17, SGPT 25 U, SGOT 13 U, ALP 68 U, total protein 6.9 gm/dl, albumin 3.0 gm/dl, and globulin 3.9 gm/dl. Tests of thyroid function were within the normal range. No feature of upper airway obstruction was noted. Thyroid

and cervical ultrasound examination revealed enlargement of the left lobe of thyroid with a heterogeneous and hypoechoic pattern and a focal lesion. Fine needle aspiration cytology (FNAC) was performed from the thyroid (Figure 2), pre-sternal mass (Figure 3) and the abnormal lymph nodes (Figure 4) and metastatic squamous cell carcinoma was found. Cytological samples did not reveal characteristics of thyroid-derived malignant neoplasms. Immunostaining was negative for thyroglobulin, calcitonin, TTF1, K 5-6, and CK20. Computed tomography (CT) scan of the neck (Figure 5) and chest revealed a left thyroid lobe mass and destruction of the sternum resulting in a prominent swelling in front of the chest. There was no evidence of a lung cancer. Upper gastrointestinal endoscopy demonstrated one ulcerative growth at thirty cm distance from the incisor teeth involving full circumference of mucosa suggestive of a malignant neoplasm. Biopsy from the ulcer showed squamous cell carcinoma (Figure 6). Vocal cord examination revealed diminished movement of left vocal cord. He had increasing weight loss, dysphagia, poor appetite, and difficulty maintaining his caloric needs. As surgical debulking was not possible, external beam radiation therapy of the neck and upper mediastinum was planned along with combination chemotherapy. Unfortunately, the general condition of the patient deteriorated quickly, and the patient died before definitive therapy can be instituted.

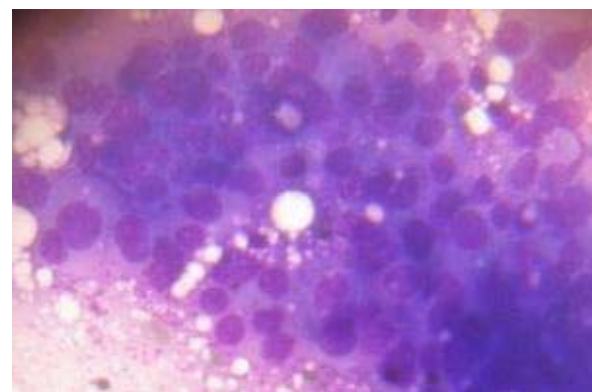


Figure 2. Cytologic smear of thyroid nodule showing metastatic deposit (MGG stain 40 X)

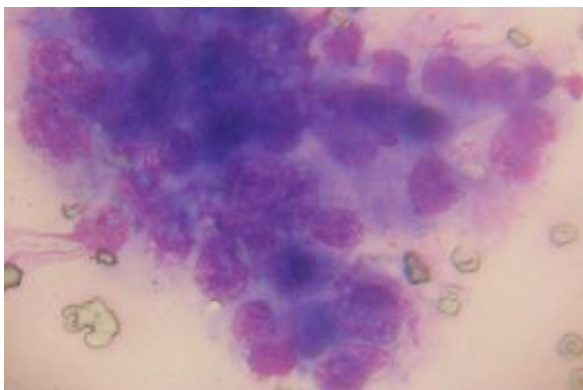


Figure 3. Cytologic smear of presternal swelling showing malignant epithelial cells in groups with rounded nuclei and moderate amount of bluish cytoplasm (MGG stain 40 X)

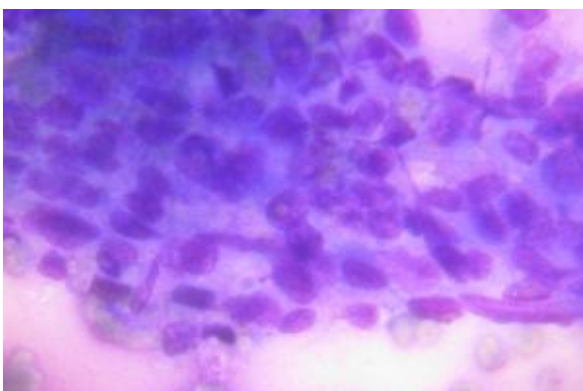


Figure 4. Cytologic smear of supraclavicular lymph node showing metastatic deposit (MGG stain 40 X)



Figure 5. Computed tomography (CT) scan showing destruction of the sternum resulting in a prominent swelling in front of the chest

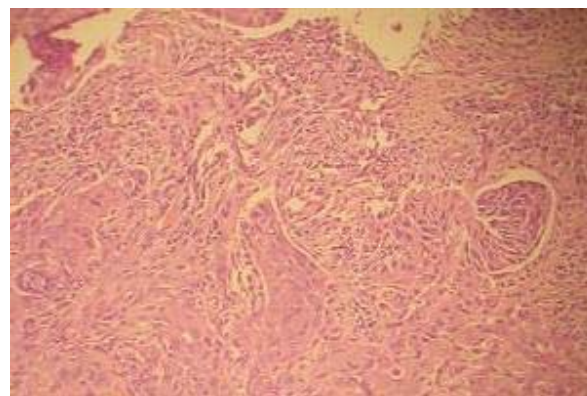


Figure 6. Endoscopic biopsy specimen from upper esophageal growth showing histology of well differentiated squamous cell carcinoma (H&E Stain 10 X)

DISCUSSION

Previous studies documented the incidence of metastatic disease of the thyroid ranging from 1.25 to 24% (4). Clinically significant metastases to the thyroid are uncommon; however, the thyroid is a highly vascularized organ, being second after the adrenal gland (4). Metastases to the thyroid originate from the lungs, breast and kidneys (4). According to other series, carcinoma of the kidneys, colon and melanoma are the most common to metastasize to the thyroid gland (6). Apart from infiltration of adjacent tissue, metastatic dissemination occurs mainly via hematogenous spread (7). Lymphatic or tumor-tumor dissemination may occur rarely (7). Secondary lesions in the thyroid are usually solitary, while multifocal and diffuse lesions are very much uncommon. Thyroid function is not affected commonly and hypo- or hyperthyroidism are infrequent findings (8). The usual clinical feature is a rapidly increasing neck mass with or without cervical adenopathy. Other associated features may include dysphagia, dyspnea and hoarseness of voice secondary to infiltration of adjacent structures. This patient presents a novel case of squamous cell carcinoma of the esophagus presenting as a metastatic thyroid lesion with sternal deposits. Metastatic carcinoma to the thyroid gland from the esophagus is a rare occurrence. Thyroid infiltrations are rare, accounting for only <2% of the total malignant thyroid deposits (9). Large autopsy series demonstrated esophageal metastases to the thyroid (<1%)

very rarely (10). Metastatic lesions to the thyroid may appear many years after the diagnosis of the primary tumor is made. In the setting of squamous cell carcinoma (SCC) of thyroid either metastatic spread or squamous variant of undifferentiated thyroid carcinoma should be kept in mind (11). Whenever the histology is unusual for a primary thyroid lesion, metastases need to be strongly considered. The etiopathogenesis of metastatic SCC of thyroid can be divided into three groups: (i) direct extension: usually from adjacent sites, for example, laryngeal or esophageal carcinoma, (ii) hematogenous metastases: from the lungs or other common primary sites, and (iii) rarely retrograde lymphatic spread. Multiple areas of the gland are very rarely involved. They can present as a solitary nodule as seen in our case which is also a rare occurrence. The sternal deposit was due to direct spread from the malignancy itself, which is supposed to be a common finding.

FNAC is an important tool for the diagnosis of metastatic disease in any organ, since clinicians are able to elaborate the nature of the neoplasm with accuracy in most cases (12). The main limitation of the use of FNAC is that, differential diagnosis between anaplastic thyroid carcinoma and metastatic lesions is difficult with this tool (4).

The most unusual feature of this case was that a “thyroid nodule along with malignant cervical lymphadenopathy” as initial presentation ultimately led to a diagnosis of secondary deposits from an esophageal origin rather than a primary thyroid malignancy. This was a unique case of a proximal squamous cell carcinoma of the esophagus metastasizing to the thyroid and presenting as a neck mass along with sternal swelling due to local spread as a coincidental finding. Therefore, all uncommon thyroid neoplasms and atypical presentations of neck masses need a thorough workup and not all neck masses should be assumed to be related to primary thyroid conditions. Appropriate diagnostic algorithms may be useful in order to avoid unnecessary thyroidectomies in patients with already widespread metastases and a very poor prognosis.

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