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CASE REPORT

Papillary Carcinoma of the Thyroid with Endobronchial Metastases

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Papillary thyroid carcinoma is the most common malignancy among females in Saudi Arabia and may present in an advanced stage and with distant metastases, mostly to the lungs, comprising 32% of the recurrences. Airway invasion is a life-threatening complication of thyroid cancer. The differentiation between the clinical features of bronchial wall invasion versus those of an obstructive endobronchial lesion deserves more attention. Endobronchial lesion may present with no symptoms. We report have a patient with papillary carcinoma of the thyroid associated with endobronchial metastases in the absence of other sites of tumor dissemination.

Key Words: Papillary thyroid carcinoma, Endobronchial metastases

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Introduction

A variety of uncommon primary tumors may sporadically affect the lung, although they represent less than 1% of all lung neoplasms. Endobronchial metastases from non-pulmonary tumors are uncommon. Tumors associated with endobronchial metastasis include breast, colorectal, renal, ovarian, thyroid, uterine, testicular, nasopharynx, prostate, and adrenal carcinomas. The frequencies of endobronchial metastasis range from 2 to 50% of pulmonary metastases from extrathoracic neoplasms.[1-4] Papillary thyroid carcinoma is the most common tumor of the differentiated thyroid cancer[5] and is the most common malignancy among females in Saudi Arabia.[6] Papillary thyroid cancer may present in an advanced stage and with distant metastases.[7] The 40-yr recurrence rates are about 35%, two-thirds of which occur within the first decade after initial therapy. Distant metastases, mostly to the lungs, comprise 32% of the recurrences. We report a patient with papillary carcinoma of the thyroid associated with endobronchial metastases in the absence of other sites of tumor dissemination.

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Case report

In 1990, a 62-year old Saudi female presented, at the age of 48 years, with painless thyroid swelling; following a diagnosis of papillary thyroid cancer, total thyroidectomy was performed; she had completion thyroidectomy for thyroid residual in 1991, and received 150 mCi of radioactive iodine therapy for positive uptake in I-123 radioiodine scan

and raised serum thyroglobulin. Two consecutive repeated whole body scans showed no I-123 radioiodine uptake. Apart from nonproductive cough, she has no other complaints. In August 2003, her serum thyroglobulin level was 16.2 ug/L with a serum antithyroglobulin of 11 U/L and TSH of 27.4 mU/L. A whole body scan showed no I-123 radioiodine uptake. Six months later, her serum thyroglobulin level was 7.2 µg/L with serum antithyroglobulin of 10 U/L and TSH of 0.16 mU/L. Ultrasound of the neck was unremarkable. Subsequently, one year later, her serum thyroglobulin level was 8.9 µg/L with serum antithyroglobulin of 22 U/L and TSH of <0.01 mU/L.

CT scan of the neck showed no enlarged lymph nodes and no recurrence was seen in the thyroid bed. A non-enhanced CT scan of the chest showed a soft tissue mass, measuring 2.5 cm in diameter, just behind the bronchus intermedius and azygoesophageal recess (Fig.1). Fluoro-D-Glucose Positron Emission Tomography whole body scan showed 4.5 cm hot lobulated focus in the right lower chest medially. Bronchosopy showed endobronchial lesion in the superior segment of the right lower lobe (Fig.2). Biopsy of the lesion was done and the histopathology showed metastatic papillary thyroid cancer (Fig.3).

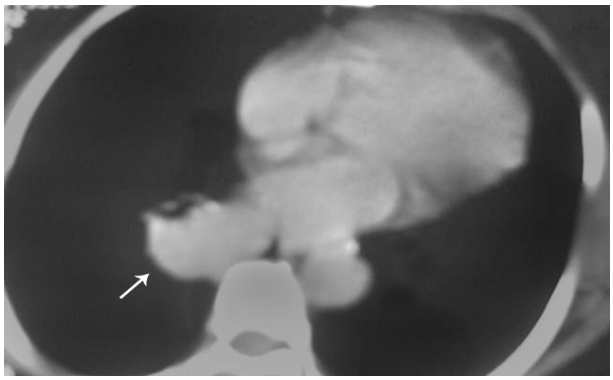

Fig.1. A non-enhanced CT scan of the chest shows a soft tissue mass measuring 2.5 cm in diameter just behind the bronchus intermedius and azygoesophageal recess (white arrow)

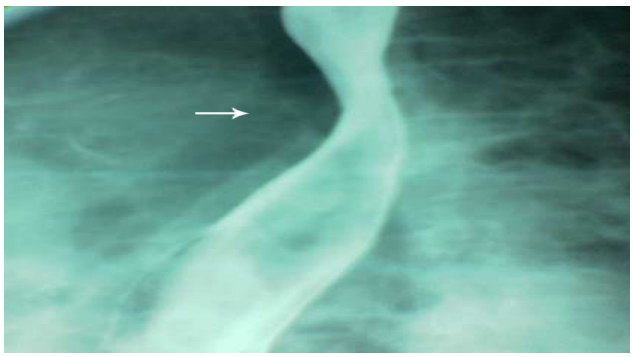

Fig.2. Contrast esophagogram showed an oval shaped mass seen posterior to the mid-esophagus (white arrow)

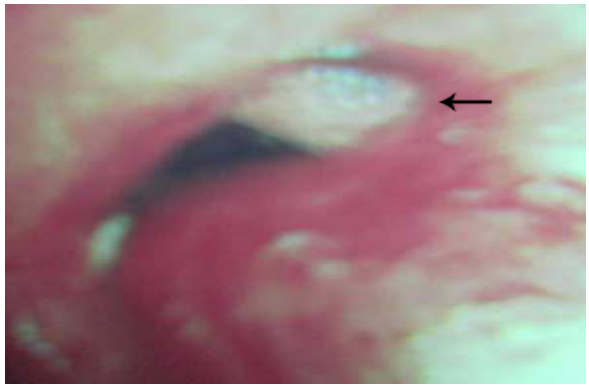

Fig.3. Bronchosopy: Endobronchial lesion in the superior segment of the lower right lobe (black arrow)

Discussion

Although differentiated thyroid cancers are not common, they are the most common malignant endocrine tumors. Papillary thyroid carcinoma is the most common tumor of the differentiated thyroid cancers,[5,6] and is among the few curable cancers. Papillary carcinoma of the thyroid generally carries a good prognosis since it usually remains intrathyroidal and tends to metastasize locally to regional lymph nodes only, unlike other thyroid cancers such as follicular or anaplastic carcinoma, which may metastasize or infiltrate locally.[8-10] Distant metastases from papillary carcinoma of the thyroid are uncommon.

Serum thyroglobulin measurement is the best means of detecting normal and malignant thyroid tissue. The follow-up of patients with papillary cancer after thyroidectomy and radioiodine ablation is mainly based on serum thyroglobulin level determination and radioiodine whole body scan.[11] An undetectable serum thyroglobulin measured during thyroid hormone suppression of TSH is often misleading. Not infrequently detectable serum thyroglobulin levels associated with negative diagnostic radioiodine whole body scan are found in patients with differentiated thyroid cancer. In our case, we found it appropriate to search for local recurrence and distant metastasies even though her whole body scan showed no I-123 radioiodine uptake and ultrasound of her neck was unremarkable. Fluoro-D-Glucose Positron Emission Tomography whole body scan has been used in thyroid carcinoma patients with elevated thyroglobulin levels and negative radioiodine scanning,12 and was informative in this case.

The frequency of an endobronchial metastasis low; grossly visible endobronchial metastases are found in the major airway in only 2% of cases. There are two possible routes for the pathogenesis of an endobronchial metastasis. Firstly, a metastasis can occur directly on the bronchial wall, by means of aspiration of tumor cells, lymphatic spread, or hematogenous metastasis to the bronchial wall. Secondly, tumor cells in the lymph nodes or lung parenchyma that surround the bronchus grow along the bronchial tree, and some portion of the lesion invades through the bronchial wall, resulting in an intraluminal lesion visible at bronchoscopy. On reviewing literature available, only few case reports describe papillary carcinoma of the thyroid accompanied by endobronchial metastasis.

To summarize, we have reported here a case of a papillary carcinoma of the thyroid with endobronchial metastases in the absence of other distant disseminations. The present case suggested that the thyroid gland should not be excluded as the primary source of metastatic endobronchial carcinoma.

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