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A Rare Case of Hurthle Cell Carcinoma with Endobronchial Metastasis

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Abstract. Endobronchial metastases (EBM) are frequently seen in breast, renal and colon carcinomas. However, to our knowledge, only one case has ever been reported as EBM secondary to Hurthle cell carcinoma (HCC) in the literature. A 57-year-old woman had a bilateral total thyroidectomy for thyroid mass in 1990 that was diagnosed as HCC. She was admitted to our outpatient clinic in August 1999, with symptoms of cough, sputum, and right-sided pleuritic pain for the last seven months. In the bronchoscopic examination, two endobronchial lesions were seen. Pathological evaluation of the bronchoscopic samples was diagnosed as "Hurthle cell carcinoma" of thyroid. We suggest that, although rare, HCC should be considered in the differential diagnosis of the endobronchial metastasis.

Key words: Hurthle cell carcinoma, Thyroid carcinoma, Endobronchial metastasis

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ENDOBRONCHIAL metastases (EBM) secondary to extrapulmonary solid malignant tumours are seen rarely. In an autopsy series, only 2% of the cases of extrapulmonary solid malignant tumours were found to have EBM [1, 2]. Although EBM are frequently associated with breast, colon and renal carcinomas, it can also be seen in uterus and bladder carcinomas and malignant melanoma [3, 4]. It has been reported that EBM due to lymphoma and Kaposi's sarcoma secondary to AIDS epidemic are increasing [5].

Pulmonary metastases have been reported in 10–40% of all thyroid carcinomas and these were mostly characterized by nodular lesions in the lung parenchyma radiologically [6, 7]. Several cases of the EBM secondary to follicular and papillary carcinomas of the thyroid were reported [4, 8]. However, no new case of the EBM of Hurthle cell carcinoma (HCC) has been published in literature, since the first case reported by Lossos and Breuer in 1990 [9].

In this report, the second case of EBM secondary to HCC is presented, and it is emphasized that in the differential diagnosis of endobronchial mass lesions, Hurthle cell carcinomas should be considered.

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Case Report

A 57-year-old non-smoker woman was admitted to the our outpatient clinic of Chest Diseases in August 1999 with symptoms of cough, sputum (mostly yellowish, but sometimes bloody, 30–40 cc/day), and pleuritic pain for the last 7 months. In her medical history, in 1991, she had an operation of total bilateral thyroidectomy for the hypoechoic mass lesion, proven by neck ultrasonography, and pathological examination revealed HCC. The patient was treated with radiotherapy and TSH suppression therapy with L-thyroxine. In 1994 and 1997, she had two more operations because of recurrences of HCC. The two different computerized tomographic evaluations of the chest at those times were normal.

The physical examination of the patient revealed no



Fig. 1. Computerized tomography of the chest revealed bilateral hilar lymphadenopathies and bilateral centrally localised parenchymal nodular lesions with a diameter of 1 cm.

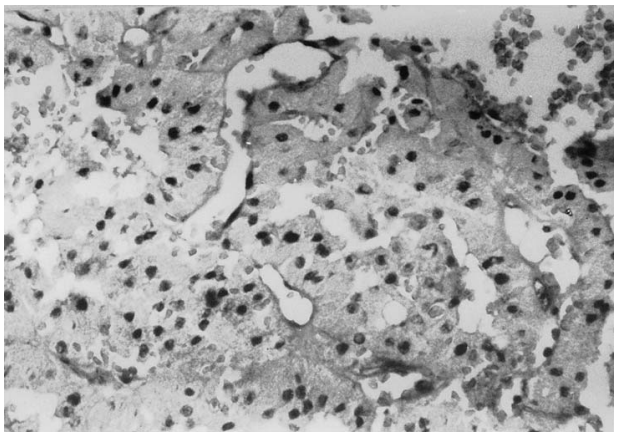


Fig. 2. Metastatic Hurthle cell carcinoma. Tumour cells with granular acidophilic cytoplasm. (HE × 200)

pathological abnormality except end-expiratory fine crackles under the right scapula and an operation scar over the neck.

In the laboratory evaluation, the erythrocyte sedimentation rate (65 mm/hr) and lactic dehydrogenase (974 U/L) were higher than normal, while thyroid hormone levels were free T3: 2.4 pg/ml (2.3–4.2 pg/ml); and free T4: 1.79 ng/dl (0.8–1.8 ng/dl), TSH: 1.37 mIU/ml (0.47–5.01) in normal limits. Radioactive iodine scintigraphy was done in 1997 and remnants of thyroid gland were detected in the neck region. It was planned again when the endobronchial metastasis was found in 1999 but could not be done since the patient was lost to follow up.

The chest x-ray of the patient revealed right subhilar enlargement and linear atelectasis at right lower zone. In the computerised tomography of the chest, bilateral hilar lymphadenopathies and bilateral centrally localised parenchymal nodular lesions with diameters of 1 cm, and pleural thickening on the right lower zone were found (Fig. 1).

In the bronchoscopic evaluation, white, fragile, and lobulated endobronchial lesions were seen at both orifices of right intermediate and left lower lobe bronchi and biopsy samples were obtained. Histopathological evaluation of these samples was reported as the endobronchial metastasis of HCC (Fig. 2) and it was stained positively with anti-thyroglobulin antibody immunohistochemically.

Discussion

HCC of the thyroid is a rare neoplasm comprising less than 5% of all differentiated thyroid carcinomas. Up to the present time, approximately 400 HCC cases have been reported. HHC is classified under the follicular carcinomas of the thyroid according to the classification of World Health Organisation. Approximately, 80% of Hurthle cell tumours (HCT) are benign and called Hurthle cell adenomas, while 20% of HCT are Hurthle cell carcinomas; they mostly metastasize to the lung, although bone and brain metastases can also be seen [10, 11].

In a paper on massive hemoptysis from an endobronchial metastasis of thyroid papillary carcinoma [8], it was mentioned that EBM may be seen in 2.6% of all thyroid carcinomas. However, only one case of endobronchial metastasis of HCC has ever been reported by Lossos and Breuer in 1990. The patient was a 55-year-old man who was diagnosed as HCC previously. Three years after the diagnosis, a solid mass was seen on the upper zone of the lung, and six months later, another hilar mass lesion was seen on the chest x-ray examination. Pathological evaluation of the biopsy samples taken from the endobronchial mass lesions seen in the orifice of right upper lobe on the bronchoscopic evaluation were reported as the endobronchial metastasis of HCC [9]. In our case, there were hilar lesions and parenchymal nodular masses on the chest x-ray when she was admitted with the symptoms of cough, hemoptysis and right pleuritic pain eight years after the diagnosis of the HCC.

Five different theories have been established for the development of EBM: (i) Direct invasion of parenchymal lesion, (ii) direct extension of mediastinal lesion, (iii) transbronchial aspiration, (iv) direct lymphatic spread, and (v) direct metastasis via bronchial artery. In our case, there was EBM with parenchymal nodular lesions and hilar lymphadenopathies. We assume that the presence of EBM in this patient probably was due to lymphatic spread from the hilar lymphadenopathies [8].

Although cough, dyspnea and hemoptysis are the most frequent symptoms in patients with EBM, in one study it was reported that 52% of the patients were asymptomatic [12]. Radiologically, atelectasis and hilar enlargement can be seen more frequently [1]. Although EBM can develop 5 or 6 years after the diagnosis of the primary malignancy, they may be primarily presented as EBM. Pulmonary metastases have been reported to develop five to 30 years after the diagnosis of the thyroid carcinomas. EBM can be diagnosed by the histopathological evaluation of the biopsy samples. Bronchial brushing and bronchial lavage techniques were reported to have low diagnostic yield [12].

The presence of EBM is a poor prognostic factor. In one study, it is reported that after detection of EBM, the median survival is about nine months, and some therapeutic procedures such as brachytherapy, laser therapy and external radiation may provide some symptomatic improvement, and with the treatment of the primary malignancy, median survival can be prolonged in some patients. Our case, although not under follow-up, is still alive three years after the diagnosis of EBM.

Conclusion

To our knowledge, this is the second case of endobronchial metastasis of HCC of thyroid. We suggest that in the differential diagnosis of the endobronchial mass lesions, HCC should be considered although it is rare.

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