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A rare presentation of endobronchial metastasis from renal cell carcinoma resected 120 months after nephrectomy.

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Abstract

Introduction: Multipl extrapulmonary tumors can metastasize to the bronchus. Endobronchial Metastases (EBM) should be distinguished from these tumors because of their poor prognosis and different treatments.

Case presentation: A 70-year-old male patient was admitted with thorax computed tomography, which was taken with the complaints of increasing cough and weight loss. The patient who had a history of left nephrectomy due to renal cell carcinoma 10 years ago did not have a history of receiving postoperative chemotherapy/radiotherapy. In bronchoscopy, the right lung upper lobe anterior subsegment entry was obliterated with an endobronchial lesion. The histopathological appearance was consistent with clear cell renal cell carcinoma metastasis

Conclusion: This case is presented to emphasize that EBM may mimic primary lung cancers especially with respiratory symptoms. Ten years' time interval is the longest period between radical nephrectomy and EBM in literature.

Keywords: Bronchoscopic Biopsy, Endobronchial Metastases, Renal Cell Carcinoma.

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Introduction

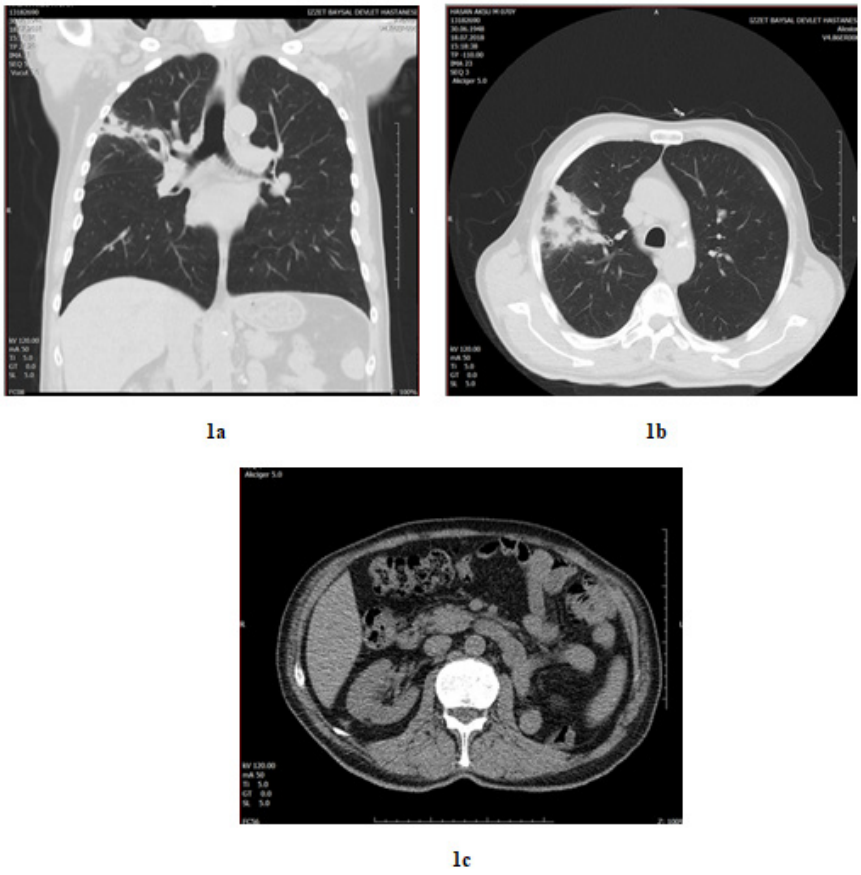
Endobronchial Metastases (EBM) are very rare, even if the lungs are common sites for extrathoracic malignancy metastases. Recurrence of the breast, colon and kidney tumors with EBM have been reported between 2 and 5% [1]. Renal Cell Carcinoma (RCC) progresses with metastasis frequently, secondary lesions occur in the first 5 years following nephrectomy in most of cases [2]. We present an unusual case with the complaints of progressive cough and weight loss 10 years after the left nephrectomy operation. The patient was diagnosed with mass lesion in the right lung in thorax Computed Tomography (CT), and the right lung upper lobe anterior subsegment was obliterated with an endobronchial lesion in bronchoscopy. To the best of our knowledge, 10-year time interval is the longest period between radical nephrectomy and EBM for RCC in literature. This case is presented to emphasize that EBM may mimic primary lung cancers especially with respiratory symptoms. Multiple bronchoscopic biopsy samples should be taken as many as for histolopathological confirmation.

Case Presentation

A 70-year-old male patient was admitted to our clinic with thorax CT, which was taken with the complaints of increasing cough and weight loss for the last 3 months. In thorax CT, there was a lesion on the right lung lower lobe anterior basal segment hilus level with a major fissure adjacent to a 24 × 30 mm lesion (Figure 1a-1b). He was hospitalized with primary lung carcinoma as a prediagnostic disease. The patient who nephrectomy due to renal cell carcinoma 10 years ago, did not receive postoperative chemotherapy or radiotherapy (Figure 1c). He had a history of 45 packs year of smoking and did not receive any medical treatment other than antihypertensive. In physical examination, respiratory sounds and vibration of right lung decreased compared to the left. On posteroanterior chest x-ray, there was a consolidated area that seems like resolution delayed pneumonia, post obstructive pneumonia in the lower right zone (Figure 2). In bronchoscopy, the right lung upper lobe anterior subsegment entry was obliterated with an endobronchial lesion (Figure 3). Biopsy, brush and bronchoscopic lavage were performed. On microscopic

examination, there was a tumoral lesion under the surface respiratory epithelium. The tumor was composed of cells with abundant vacuolated cytoplasm, with indistinct cell borders. The tumor nucleus has variable atypia and irregular contours. Nucleoli were present but not prominent. Also there were a few mitoses. The tumor cells were positive for RCCma, PAX-2, PAX-8, vimentin and negative for TTF-1, CK 7, CD56. The histopathological appearance and immunohistochemical findings were consistent with clear cell renal cell carcinoma metastasis (Figure 4).

There was no metastasis in cranial magnetic imaging. Positron emulsion tomography (Pet CT) was reported as pathological metabolic activities primary lung carcinoma and metastases in the right peribronchial and pretracheal lymph nodes in the upper lobe anterior and hilar region defined in the right lung. The patient was directed to the center where he was operated with the diagnosis of the renal cell carcinoma and learned that interferon-alpha 2a treatment was started.



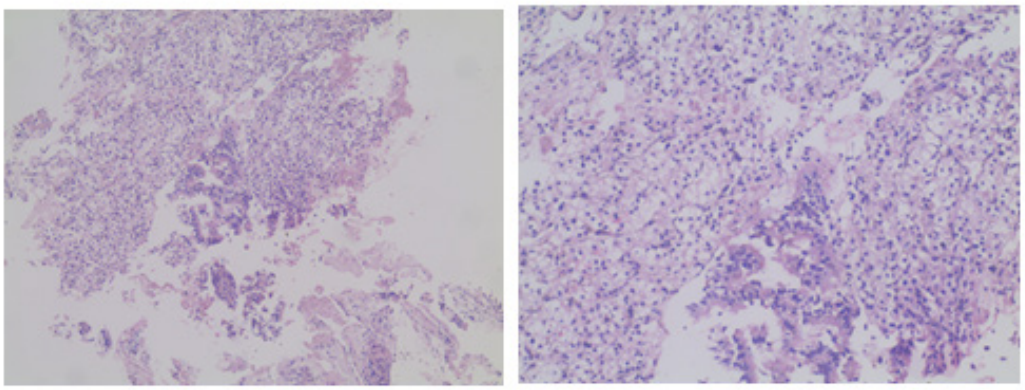
1a 1b

1c

Figure 1. *Parenchyma and abdomen sections in thorax bt.*

Figure 2. *Infiltrative density in upper zone of right lung.*

Figure 3. *Endobronchial lesion in the right lung upper lobe anterior segment.*



4a **4b**

Figure 4. *(a) Tumor with clear cell cytoplasm and round nucleus, x100 hemotoxylin eosin (b) X200 magnification sections after staining with hemotoxylin eosin.*

Discussion

Endobronchial involvement is very rare while the course of non-thoracic malignancies with lung metastases is common. Renal Cell Carcinoma (RCC), especially breast, colorectal and gastric cancers are recurrent malignancies with Endobronchial Metastases (EBM) that has been reported to be between 2% and 5% [1-3]. In a retrospective study conducted in Korea, covering 10 years, it was revealed that only 18 (4.1%) of 438 cases of endobronchial malignancy originated from the lungs [1]. In another analysis recently, approximately 4% of all bronchoscopic biopsies performed with a preliminary diagnosis of primary lung cancer were found to have extrapulmonary malignancy, and in 5% of cases EBM was the first sign of neoplasm [4]. The average time for tumor recurrence following nephrectomy is 15-18 months, according to the literature, and 85% of metastases have been shown to occur within the first 3 years and 93% within the first 5 years [4]. There are rare cases where relapses occur 20 years after nephrectomy, they have been reported as parenchymal nodules, mediastinal lymphadenopathies and pleural metastases [5,6].

Breta et al. showed that [3], the primary organ was detected as kidney in 2 of 11 patients with extrapulmonary malignancy recurrent with EBM. These metastases occured histopathologically in clear cell carcinoma within 2 to 6 months following nephrectomy. It has been determined that this period may be up to 7 years for EBM. In the study of Marcioni et al. [4], 174 cases were examined; metastasis can be seen up to 112 months. In our case, it was also a clear cell carcinoma but there was a history of nephrectomy 10 years ago (120 months).

As in primary lung cancer, symptoms such as progressive dyspnea, cough, hemoptysis and weight loss can also be seen in the EBM of extrathoracic malignancies due to localization. Radiologically, EBMs can progress with a solitary nodule, endobronchial mass, atelectasis, hilar or mediastinal lymphadenopathy and pleural involvement [6]. Although the location of the tracheobronchial tree can be affected, most of the cases were located in the right

lung unknowingly. In our case, an endobronchial lesion was observed in the anterior segment of the right upper lobe.

The method of treatment of metastases is determined by the histological features of the primary tumor, biological behavior and anatomical location, the presence of other metastatic sites, current symptoms, patient performance status and life expectancy. Interventional endoscopic procedures such as external radiotherapy, systemic chemotherapy, electrocoagulation, forceps, cryotherapy, NdYAG laser, photodynamic therapy can be applied in therapy.

Conclusion

In conclusion, the possibility of metastatic lesions should be considered even after decades in the evaluation of patients' lung nodules with a history of the primary malignancy. In addition, its diagnosis is of clinical importance due to poor prognosis and different treatment methods compared to primary bronchogenic carcinoma.

Patient's Consent

Verbal consent was taken from the patient.

Conflict of Interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Patient's Consent

Verbal consent was taken from the patient.

Author's Contribution

SS, UJ, MAB: All authors equally contributed in the development and completion of this manuscript.

References

1. Kim JH, Min D, Song SH, Lee JH, Jeong HC, Kim EK. Endobronchial metastases from extrathoracic malignancies: recent 10 years' experience in a single university hospital. Tuberc Respir Dis 2013; 74: 169-176.
2. Bianchi M, Sun M, Jeldres C, Shariat SF, Trinh QD, Briganti A, et al. Distribution of metastatic sites in renal cell carcinoma: a population-based analysis. Ann Oncol 2012; 23: 973-980.
3. Breta M, Arava S, Madan K, Singh A, Jain D, Guleria R. Endobronchial metastasis from extrathoracic malignancies: A clinicopathological study of 11 cases. Lung India 2019; 36: 212-215.
4. Marchioni A, Lasagni A, Busca A, Cavazza A, Agostini L, Migaldi M, et al. Endobronchial metastasis: an epidemiologic and clinicopathologic study of 174 consecutive cases. Lung cancer 2014; 84: 222-228.
5. Shiono S, Yoshida J, Nishimura M, Nitadori J, Ishii G, Nishiwaki Y, et al. Late pulmonary metastasis of renal cell carcinoma resected 25 years after nephrectomy. Jpn J Clin oncol 2004; 34: 46-49.
6. Koleckova M, Tichy T, Melichar B, Veverkova L, Hes O, Kolek V, et al. Metastatic clear cell renal carcinoma without evidence of a primary renal tumour mimicking advanced stage of malignant lung tumour. Klin Onkol 2019; 32: 154-156.

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