

Case Report

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Endobronchial metastasis of testicular germ cell tumor

Demet Turan, Mehmet Akif Özgül, Gamze Kirkil¹, Erdogan Çetinkaya

Abstract:

Endobronchial metastasis (EBM) of extrapulmonary malignancies is rarely reported; on the other hand, germ cell tumors (GCTs) are extremely rare. This report describes a case of a testicular germ cell tumor presenting as a polypoid endobronchial mass. A 48-year-old male patient had a history of hemoptysis for several weeks. He had undergone orchiectomy due to testicular GCT 20 years ago. Computerized tomography of the thorax obtained endobronchial polypoid lesion in the right intermediate bronchus. Rigid bronchoscopy was applied; right intermediate bronchus was obliterated with a polypoid lesion. The lesion was coagulated with argon plasma coagulation, and debris was removed by biopsy forceps. Pathological examination of the specimen was somatic-type GCT. No recurrence was observed during the follow-up of the patient. We want to present our case to emphasize the importance of distinguishing EBM from primary lung carcinoma which treatment and survival are quite different.

Keywords:

Endobronchial metastasis, germ cell tumors, intrabronchial therapy

Introduction

Pulmonary metastasis of extrapulmonary malignancies is frequent, but solitary endobronchial metastasis (EBM) is rarely reported. The prevalence of EBM is 2%–18% of all pulmonary metastasis.^[1] The most common sites for extragonadal germ cell tumors (GCTs) are the anterior mediastinum, the retroperitoneum, and the pineal and suprasellar regions. EBM of GCT is extremely rare, but mediastinal nodal enlargements due to testicular seminomas can be seen frequently. The rate of pulmonary metastases in testicular seminoma is approximately 15%.^[2]

Although the underlying causes may vary, most have similar symptoms such as cough, dyspnea, hemoptysis, and sputum. The treatment modality of EBM is dependent on many factors such as the histologic features of the primary tumor, biologic

behavior, anatomic location, evidence of other metastatic sites, presenting symptoms, patient performance status, and life expectancy. For this reason, the accurate diagnosis of Endobronchial metastasis (EBM) is very important in deciding the appropriate treatment modality.

This report describes a case of a testicular GCT presenting as a polypoid endobronchial mass.

Case Report

A 48-year-old male patient referred to our clinic with a history of hemoptysis for several weeks. He had undergone orchiectomy due to testicular germ cell tumor 20 years ago. He also received adjuvant chemotherapy. He was a smoker with a history of 15 pack-years. His physical examination findings were unremarkable. Laboratory studies were normal. Chest radiography revealed right hilar enlargement [Figure 1]. Computerized tomography of the thorax obtained endobronchial polypoid lesion

Department of Pulmonology, Yedikule Pulmonary Diseases and Thoracic Surgery Education and Research Hospital, Istanbul, ¹Department of Pulmonology, Faculty of Medicine, Firat University, Elazig, Turkey

Address for correspondence:

Dr. Demet Turan,
Belgrad Kapi Street No. 1,
34020 Istanbul, Turkey.
E-mail: drdemetturan@gmail.com

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in the right intermediate bronchus [Figure 2]. Rigid bronchoscopy was applied; right intermediate bronchus was obliterated with a polypoid lesion [Figure 3]. The lesion was coagulated with repetitive argon plasma coagulation (APC), and debris was removed by biopsy forceps. After this implementation, cryo was applied to the lesion. Pathological examination of the lung bronchial biopsy specimen revealed malignant tumor with epithelial components, with extensive osseous and chondromatous mesenchymal elements. Results of immunohistochemistry staining were: pan-cytokeratin (+), protein 63 (P63) (+), Sal-like protein 4 (SALL4) (+), CD 99 (+), alpha-fetoprotein (+), glypican (+), vimentin (+), Tiroid transkripsiyon faktör-1 (TTF-1) (-), napsin-A (-), Cluster of Differentiation 30 (CD 30) (-), cytokeratin 20 (-), cytokeratin 20 (-), Epithelial membrane antigen (EMA) (-), Transducin-like enhancer protein 1 (TLE1) (-), and Octamer-binding transcription factor 4 (Oct-4) (-). After interpretation of these results, final diagnosis was confirmed as a somatic-type germ cell tumor. The patient was consulted

to oncology department, and chemotherapy was started. No recurrence was observed in the 12th month of follow-up of the patient [Figure 4].

Discussion

Lung metastases from extrapulmonary primary malignancies are frequent, but EBM is rare. Pulmonary metastasis is usually diagnosed by radiological methods. Therefore, bronchoscopic examination is not performed routinely for all patients presenting with pulmonary metastasis. This may lead to underdiagnosis of EBM. Frequently described primary malignancies which can lead to EBM include renal cell carcinoma, melanoma, breast cancer, thyroid carcinoma, colorectal adenocarcinoma, and cervical carcinoma.^[3] EBM due to testicular seminomas is extremely rare; for this reason, we want to present our case. Only a few reports of primary testicular seminoma causing EBM have been published until now.^[2]

As is seen with primary lung carcinomas, cough and hemoptysis are the most common symptoms in EBM. Lee *et al.* reported cough as the most common symptom.^[4] In our case, the only symptom was hemoptysis. We recommend bronchoscopic examination if there is one of these symptoms in a patient with known extrapulmonary malignancy.

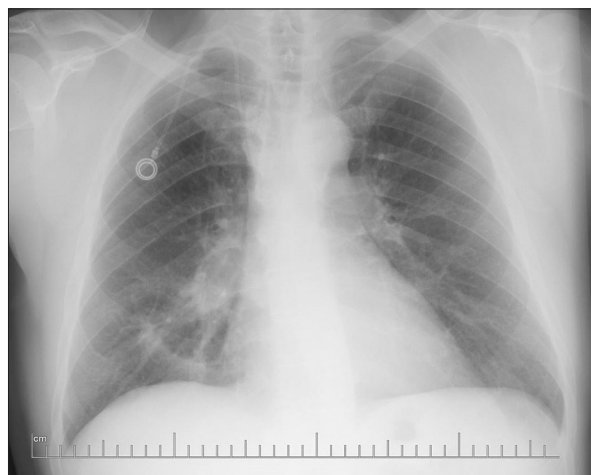


Figure 1: Chest X-ray showing right hilar enlargement

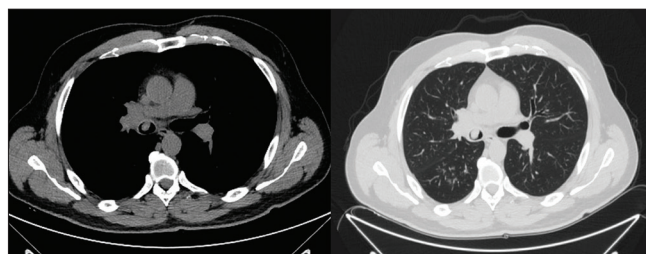


Figure 2: Thorax computerized tomography showing endobronchial polypoid lesion in the right intermediary bronchus

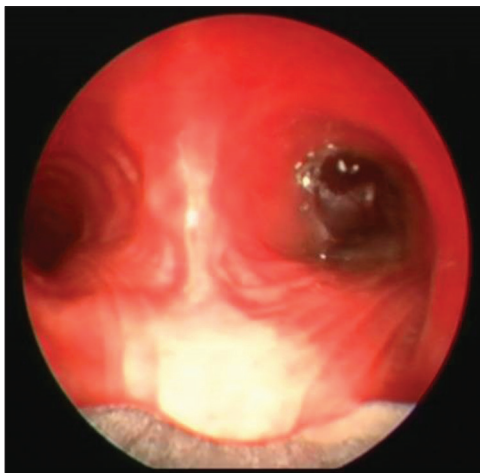


Figure 3: Rigid bronchoscopic appearance of polypoid lesion in the right intermediate bronchus

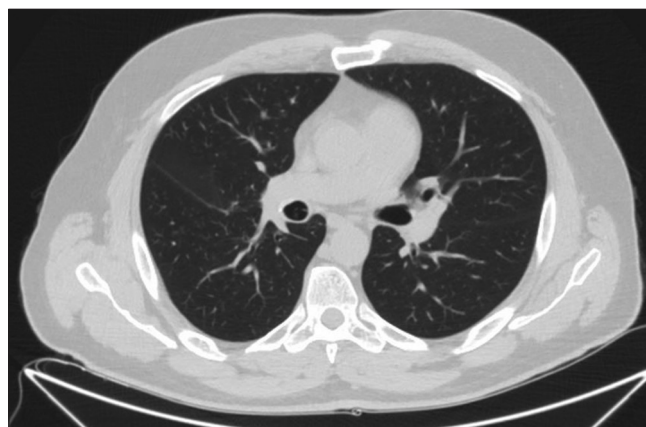


Figure 4: Computerized tomography image after 12 months of endobronchial treatment

Various radiologic findings may be present in patients with EBMs such as mediastinal lymphadenopathy, hilar masses, atelectasis, multiple pulmonary nodules, as well as normal chest radiography.^[5] In Lee *et al.*'s study, hilar mass, visible tumor, and atelectasis were common findings, but 9.3% of patients had normal chest X-rays. Therefore, it is important not to exclude symptomatic patients based solely on normal chest X-rays. Mediastinal lymphadenopathy is the most common intrathoracic manifestation of metastatic GCT as seen in our patient. Although EBM is often detected in the right side as seen in our patient, the reason of this predilection is not clear.^[6]

The presence of a bronchoscopically visible lesion in a patient with known extrapulmonary malignancy does not equal EBM since they are clinically, radiologically, and bronchoscopically indistinguishable from bronchogenic carcinoma in most cases. Histological analysis and the pathologic comparison of EBM and the primary site are important.

Interval between diagnosis of the primary tumor and the EBM is usually long and ranges from 0 to 65 months,^[6] depending on the biological behavior of primary tumor.^[4,7] Duration was so long in our patient; EMB occurred after 20 years. Survival is dependent on the primary tumor; 5-year survival in metastatic testicular carcinoma is approximately 82% in patients with lung metastases. The overall prognosis is poor (averaging 1–2 years) in most cases.^[8] The median survival was reported as 16.1 months in Lee *et al.*'s study, similar to the 15.5 months found by Kiryu *et al.*^[4,6] Molecular markers for genes that would explain the characteristics of these time intervals should be examined in future studies.

There are various treatment methods for EBM. Endobronchial treatment modalities such as mechanical resection, stent insertion, APC, cryotherapy, and laser evaporation have been performed for the management of these cases.^[9] These procedures are safe and effective as palliative treatment and can prolong survival in selected patients. Treatment of EBM must be planned according to the histology of the primary tumor, the location of the lesion in the bronchial tree, number of lesions, and medical status of the patient. In our patient, interventional bronchoscopy was the primary therapy. Palliative treatment with interventional bronchoscopy may also be effective in improving the quality of life in these patients by controlling hemoptysis and thus preventing asphyxia.^[10]

Conclusion

EBM of the GCTs is extremely rare. Hence, we want to present our case to emphasize the importance of distinguishing EBM from primary lung carcinoma which treatment and survival are quite different.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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