Endobronchial Metastasis from Testicular Seminoma

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Abstract

Objective: To present a case of endobronchial metastasis from a seminoma mimicking a primary pulmonary mass on X-ray radiograph. Clinical Presentation and Intervention: A 27-year-old man presented with a 1-month history of hemoptysis. Thorax computerized tomography of the patient obtained at the level of the main right bronchi demonstrated a mass with a size of 7 × 6 cm and a peripheral lobulated nodule. Bronchoscopic examination showed narrowing and multiple nodules in the right upper and right intermediary lobar bronchi. Histopathological examination of bronchial biopsies and brushing confirmed endobronchial metastasis of the testicular seminoma. Conclusion: This case shows the prognostic significance of distinguishing endobronchial metastasis from primary lung carcinoma.

Case Report

A 27-year-old man presented with a 1-month history of hemoptysis. His medical history was remarkable for right orchiectomy due to testicular seminoma (stage 1) 40 months previously. He was a smoker with 10 pack-years. The patient appeared comfortable, and his vital signs and physical examination were normal. The relevant laboratory findings on admission were: hemoglobin 13.6 g/dl, hematocrit 40.2%, platelets 340,000/mm³, leukocytes 6,800/mm³ and erythrocyte sedimentation rate 66 mm/h. Serum chemistry, renal function, liver functions, and urinalysis were normal. β-hCG was 8.64 mIU/ml (normal <5.3). Chest radiograph revealed right hilar enlargement and a neighboring nodule. Computed tomography of the thorax obtained at the level of the main right bronchi demonstrated a mass with a size of 7 × 6 cm and a peripheral lobulated nodule (fig. 1). Fiber-optic bronchoscopy showed multiple nodules around the orifice of the right upper lobe and right intermediary lobe and endobronchial narrowing (fig. 2a, b). Histopathological examination of bronchial biopsies and brushing confirmed EBM of the testicular seminoma and immunohistochemical staining was strongly positive for CD117.
(fig. 3a, b). There was no evidence of any other distant metastasis. Abdominal CT did not show lymph node enlargement. Three months after four cycles of chemotherapy (cisplatin, etoposide and bleomycin in combination) control thorax CT was completely normal. The patient was followed up clinically and radiographically for 8 months with no evidence of disease recurrence.

Discussion

Lung metastases from extrapulmonary primary malignancies are common. However EBM are uncommon and they usually mimic primary pulmonary carcinoma. A variety of primary tumors have been associated with EBM, especially breast, colon, and renal carcinomas predominate [1, 3]. EBM from testicular seminoma is extremely rare. Only two previous reports of primary testicular seminoma producing EBM have been published [4, 5].

Fig. 1. A mass with a size of 7 × 6 cm at the level of the right main bronchi (arrow).

Fig. 2. Bronchoscopic appearance of the lesion; multiple nodules were seen on the bronchial surface around the orifice of the right upper lobe bronchi and the right intermediary lobe (arrows) (a) as well as endobronchial narrowing (arrows) (b).

Fig. 3. a Bronchoscopic mucosal biopsy demonstrating a relationship between lymphocytes (white arrow) and atypical germ cells with large hyperchromatic nuclei (black arrow) and evident nucleoli. HE. ×400. b Immunohistochemical examination with CD117 shows cytoplasmic membranous staining (black arrow). IHC. ×400.
Extrapulmonary malignancies are assumed to spread to the EBM by different routes [6–8]. Secondary invasion from a parenchymal or mediastinal lesion, direct lymphatic spread, transbronchial aspiration or direct invasion are possible routes [6]. Metastatic spread of seminoma generally occurs by way of the lymphatic system to the retroperitoneal lymph nodes. Visceral metastasis when present occurs most often in the lungs, liver, and brain [7]. Pulmonary metastases are observed in approximately 15% of patients with testicular seminoma [8].

Symptoms in patients with EBM are similar to those associated with primary bronchogenic carcinoma. The most common symptoms are coughing and hemoptysis, with dyspnea and wheezing occurring less often [3, 9]. However, some patients are asymptomatic. In several series it has been reported that 16–62.5% of patients were asymptomatic at the time of diagnosis [3, 9], but in our patient the unique symptom on admission was hemoptysis.

Chest radiographs in patients with EBM are quite variable. Patients may present with evidence of atelectasis, multiple pulmonary nodules, hilar masses, mediastinal lymphadenopathy, or normal chest radiographic findings. On the other hand, mediastinal nodal enlargement is the most common intrathoracic manifestation of metastatic testicular seminoma [9]. As a result, it is difficult to differentiate between diagnoses of primary lung carcinoma and EBM on the basis of the symptoms and radiographic findings alone. Histopathological examination and immunohistochemical staining is the backbone of definitive diagnosis of metastatic testicular seminoma as in our patient.

The time interval between diagnosis of the primary tumor and the EBM is generally long. The published interval from diagnosis of the primary tumor to the development of EBM ranges from 0 to 65 months [3]. The survival time is variable according to the primary tumor, but prognosis is generally poor. However, 5-year survival in metastatic testicular carcinoma is approximately 82% in patients with only lung or lymph node involvement [10].

**Conclusion**

This case shows the importance of distinguishing EBM from primary lung carcinoma because seminoma involves a different therapeutic approach and survival expectation.

**References**