Endobronchial Metastasis from Primary Papillary Serous Carcinoma of the Peritoneum

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Abstract

A 59-year-old woman was admitted to our hospital with a left lower lobe opacity and mediastinal shift on the chest X-ray. She had been complaining of intermittent nonproductive cough and exertional dyspnea. Chest computed tomography (CT) showed an endobronchial tumor of the left main to the lower bronchus, atelectasis of the left lower lobe, and mediastinal shift. Bronchoscopy revealed a polypoid tumor at the distal portion of the left main bronchus that occluded the bronchus. Biopsy specimens from the endobronchial tumor were shown to be serous papillary adenocarcinoma. Since the patient had been treated surgically for primary papillary serous carcinoma of the peritoneum (PSCP) 10 years earlier, immunohistochemical examinations were performed. The diagnosis of endobronchial metastasis of PSCP was confirmed by immunohistochemical staining with cancer antigen 125 (CA125), vimentin, and Wilms tumor-1 (WT-1). This is a rare case of endobronchial metastasis from PSCP.

Key words: endobronchial metastasis, papillary serous carcinoma, peritoneal neoplasm

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Introduction

Endobronchial metastases from extrathoracic neoplasms are uncommon (1-3), and papillary serous carcinoma of the peritoneum (PSCP) is a rare primary peritoneal carcinoma that histologically resembles serous ovarian papillary carcinoma (4-6). Endobronchial metastasis is frequently associated with primary tumors of the kidney, colon/rectum, breast, and others (1-3, 7). To the best of our knowledge, there have been no previous reports of endobronchial metastasis from PSCP. A rare case of recurrent PSCP with endobronchial metastasis is reported.

Case Report

A 59-year-old woman was admitted to our hospital because of a 6-month history of intermittent nonproductive cough and a 2- to 3-week history of exertional dyspnea. Her past history included primary papillary serous carcinoma of the peritoneum (PSCP) 10 years earlier, and she had been treated with debulking surgery that included hysterectomy, salpingo-oophorectomy, omentectomy, and resection of the peritoneal tumor. After the debulking surgery, she received 6 courses of cisplatin-based chemotherapy and sequential pelvic radiotherapy. About 4 years after PSCP was diagnosed she had a relapse of PSCP with a tumor of the spleen, which was treated with splenectomy. She showed no further recurrence until visiting our hospital.

The patient was urgently admitted due to dyspnea. Physical examination revealed reduced lung sounds on the left side and no adventitious breath sounds. Peripheral blood count and blood chemistry findings were mostly within the normal ranges. Blood gas analysis showed a pH of 7.375, PaCO2 of 41.0 mmHg, PaO2 of 57.8 mmHg, and SAO2 of 89.2%. On chest X-ray, a left lower lobe opacity and mediastinal shift were seen (Fig. 1a). Chest computed tomography (CT) showed an endobronchial tumor of the left main...

Figure 1. (a) Chest X-ray films showing a left lower lobe opacity and mediastinal shift. (b) CT scan showing an endobronchial tumor of the left main to the lower bronchus, atelectasis of the left lower lobe, and mediastinal shift.

Figure 2. Bronchoscopic photograph showing an endobronchial polyp of the left main bronchus.

to the lower bronchus, atelectasis of the left lower lobe, and mediastinal shift (Fig. 1b). Bone scintigraphy revealed multiple bone metastases in the ribs.

On bronchoscopic examination, a large exophytic tumor was seen inside the left main bronchus, and it almost completely occluded the orifice of the left upper and lower lobes (Fig. 2). A biopsy showed serous papillary adenocarcinoma (Fig. 3a). Immunohistochemical stains were positive for cancer antigen (CA) 125 and estrogen receptor, focally positive for Wilms tumor (WT)-1 and vimentin, and negative for progesterone receptor and thyroid transcription factor (TTF)-1 (Fig. 3b, c, d). Immunohistochemical analysis of the specimen taken by splenectomy showed the same staining pattern as the endobronchial tumor. Therefore, this patient was diagnosed as having endobronchial metastasis from PSCP.

The patient received chemotherapy involving one course of paclitaxel plus carboplatin. Three weeks later, she developed a systemic skin rash, and lymphocyte stimulation tests against carboplatin were positive. Therefore, she was given four courses of docetaxel. She also received sequential thoracic radiotherapy and achieved a partial response.

Discussion

Papillary serous carcinoma of the peritoneum (PSCP) is a rare malignant epithelial tumor that is histologically indistinguishable from serous ovarian papillary carcinoma, and it may be found predominantly in elderly postmenopausal women (4-6). PSCP is recognized as a primary tumor of the peritoneum that diffusely involves the peritoneal surface, while it spares or only superficially invades the ovaries (4, 5, 8). In the literature, about 10% of women diagnosed with epithelial ovarian carcinoma actually have PSCP, and the clinical features of PSCP closely resemble those of stage III-IV serous ovarian papillary carcinoma (4, 9, 10). The treatment strategies and the prognosis for PSCP are also similar to those of patients with stage III - IV ovarian serous papillary carcinoma (4, 5, 9-11). The median survival time from the diagnosis of PSCP has been reported to be about 24 months (4, 6). Although endobronchial metastasis from ovarian carcinoma has been reported (1, 12), there are no reports of endobronchial metastasis from PSCP.

Since various definitions of endobronchial metastasis have been proposed, the reported frequencies of endobronchial metastasis vary, ranging from 2% to 50% of pulmonary metastases from extrathoracic neoplasms (1, 3, 7, 12, 13).

Kiryu et al (1) defined endotracheal/endobronchial metastasis (EEM) as bronchoscopically visible, nonpulmonary tumors metastatic to the subsegmental or more proximal central bronchus and lesions histologically identical to the primary tumors. They also proposed 4 types of developmental models of EEM: type I, direct metastasis to the bronchus; type II, bronchial invasion by a parenchymal lesion; type III, bronchial invasion by mediastinal or hilar lymph node metastasis; and type IV, peripheral lesions extending along the proximal bronchus (1). Type I accounts for 31.3%, type II is rare, and type IV is the most common (56.3%) (1). In the present case, mediastinal and hilar lymphadenopathy were
not clearly detected, but peripheral lesions extending along the left lower bronchus were suspected on chest CT. Although it is difficult to differentiate type II from type IV based solely on clinical and chest imaging findings, we suspect that this case was type IV according to the definition of Kiryu et al (1).

The treatment and management of EEM must be individualized based on its biological behavior (the histologic identification of the primary tumor), the anatomic location of the lesions, evidence of other metastatic sites, and the patient’s performance status (1, 7, 14). The recurrence interval from the diagnosis of the primary tumor to the diagnosis of EEM has been reported to be about 5 years, and the median survival time from the diagnosis of EEM has been reported to be about 10 months (1, 7, 14). In the present case, the recurrence interval was 10 years, and the patient was treated with chemotherapy, which is regarded as standard treatment for ovarian carcinoma (4, 11), and thoracic radiotherapy. She achieved a good response, and 32 months after the diagnosis of endobronchial metastasis (156 months after the diagnosis of PSCP), she was followed up as an outpatient.

This is the first reported case of endobronchial metastasis from PSCP. Therefore, the present case reminds physicians to consider endobronchial metastasis from asymptomatic, extrathoracic neoplasms, and it may provide further insight into the clinical significance of PSCP.

References

9. Shmuely E, Leider-Trejo L, Schwartz I, Aderka D, Inbar M. Pri-