Endometrial cancer with endobronchial metastasis

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Learning Point for Clinicians

Endobronchial metastasis (EBM) is the very rare form of intrathoracic metastasis from non-pulmonary malignancies. It requires biopsy to confirm these patients with EBM if there is a history of extra-pulmonary malignant disorders.

Case report

A 56-year-old female with endometrioid adenocarcinoma presented to our clinics with a 4-week history of shortness of breath accompanied by a 2-day history of hemoptysis. Her medical history revealed stage IIB endometrioid adenocarcinoma and was treated abdominal total hysterecomy plus radiotherapy 1 year ago. The physical examination showed the right lung sound weakened compared with contralateral. On computed tomography (CT) scanning, right middle lobe (RML) collapse was observed (Figure 1a). Flexible bronchoscopy revealed an endobronchial tumor obstructing the RML bronchus (Figure 1b). The endobronchial tumor biopsy confirmed endometrioid adenocarcinoma (Figure 1c). The immunohistochemical study was positive for cytokeratin 7, thyroid transcription factor-1 (TTF-1) and vimentin (Figure 1d). The stain was negative for cytokeratin 20 and napsin A. Subsequently, the patient was considered for concurrent chemoradiotherapy for her recurrent endometrioid adenocarcinoma with endobronchial metastasis (EBM). Unfortunately, no bronchoscopy was done as a follow up the response of treatment because the patient had a fatal multiple brain metastasis 1 month after the procedure.

Discussion

Endometrial carcinoma is the most common malignancy of the female reproductive tract. Although most cases are diagnosed at an early stage, endometrial carcinoma carries a poor prognosis when it recurs after previous definitive treatment or when diagnosed at an advanced stage. There are typical and atypical metastatic sites of recurrent endometrial carcinoma.1 Typical sites include local pelvic recurrence, pelvic and para-aortic nodes, peritoneum and lungs. Atypical sites include extra-abdominal lymph nodes, liver, adrenals, brain, bones and soft tissue. Although patients with advanced or recurrent disease typically receive adjuvant chemotherapy and radiation, they have an extremely poor prognosis.

EBM is by definition a bronchoscopically visible non-pulmonary tumor, involving the proximal central bronchus or subsegmental bronchi, with lesions histologically identical to the previously demonstrated primary tumor. The frequency of EBM varies from 2% to 28% according to the definition.2,3 Among these non-pulmonary malignancies, breast, renal and colon neoplasms are most
commonly responsible for EBM. Other rarely reported primary tumors include cancers from sarcoma, uterine cervix, skin tumors, thyroid gland, urinary bladder, and head and neck. EBM due to endometrial cancer is very rare. In 1996, Salud et al. reviewed 32 cases with EBM in a 9-year retrospective study and found that only one patient's primary cancer was endometrial carcinoma. In Sorensen’s analysis of 204 patients with EBM diagnosed by bronchoscopy with biopsies, only five patient’s primary tumor was from corpus uteri. The mean time interval from diagnosis of the primary tumor to the diagnosis of EBM has been reported to be 50 months. According to the four developmental modes of EBM, our case was type III, which is defined as bronchial invasion by mediastinal or hilar lymph node metastasis. The other three modes are type I, direct metastasis to the bronchus; type II, bronchial invasion by a parenchymal lesion; and type IV, peripheral lesions extending along the proximal bronchus. The mean survival time of type III has been reported to be 2 months, and is the shortest time among the four types. The identification of endobronchial histologic specimens together with the previous histologic specimens from the extrathoracic primary tumor is necessary in order to reach the correct diagnosis, because the treatment possibilities may be different. Immunohistochemistry may make it easier to differentiate between EBM and a new primary central

Figure 1. (a) Chest CT with lung window confirmed obstructive pneumonitis of the RML with a homogeneous endobronchial mass in a 56-year-old woman of endometrioid adenocarcinoma. (b) Flexible bronchoscopy demonstrated an endobronchial tumor occluding the orifice of the right main bronchus (arrow). (c) Endobronchial mass biopsy specimen from RML orifice: solid growth pattern of tumor cells with hyperchromatic nuclei and distinct nucleoli, resembling the primary endometrioid adenocarcinoma (hematoxylin–eosin stain, original ×400). (d) Focal positive immunoreactivity to vimentin stain (immunohistochemical stain, ×400).
airway tumor. Although TTF-1 is generally considered to be a relatively specific marker for lung and thyroid neoplasms, TTF-1 expression was also presented in 6 of 32 (19%) patients with endometrioid adenocarcinoma in one study. A combination with negative napsin A immunostaining is warranted to help differentiate whether an endobronchial mass is a primary lesion or a metastatic lesion.

In conclusion, reports of EBM from endometrial cancer are extremely rare. Diagnosis of etiology remains challenging due to the absence of specific clinical characteristics. In this condition, to make a right diagnosis can only depend on pathological examination with immunohistochemistry stain. It should be emphasized in all cases of endobronchial tumor if there is a history of extra-pulmonary malignant disorders. The treatment strategies may be very different from those of primary lung cancer.

Conflict of interest: None declared.

References