Intestinal metastasis from non-small-cell lung cancer initially detected by \(^{18}\)F-fluorodeoxyglucose positron emission tomography

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Abstract Gastrointestinal (GI) metastasis from non-small-cell lung cancer (NSCLC) is relatively rare. As most patients with GI metastasis are diagnosed on the occasion of serious complications, such as ileus or perforation, the appropriate diagnosis is important. Here, we report a case of NSCLC metastatic to the small intestine diagnosed at initial staging using \(^{18}\)F-fluorodeoxyglucose positron emission tomography.

Key words Intestinal metastasis · Non-small-cell lung cancer · Fluorodeoxyglucose positron emission tomography (FDG-PET) · Double balloon (DB) enteroscopy

Case report

A 72-year-old man, a heavy smoker, was admitted to our hospital for dyspnea. Physical examination on admission showed conjunctival pallor but no complaint of abdominal pain or a palpable mass. Laboratory analysis revealed a hemoglobin level of 6.6 g/dl.

Chest radiography revealed a mass shadow on the apex of the right lung. Computed tomography (CT) of the chest revealed a homogeneous mass with mediastinal lymphadenopathy and two abdominal abnormalities (intestinal wall thickening and an abnormal lymph node). FDG-PET demonstrated increased uptake consistent with these results (Fig. 1). Diagnostic transbronchial lung biopsy showed large-cell carcinoma of the lung. GI endoscopy was also performed because of anemia. There was no evidence of GI bleeding; however, double-balloon (DB) enteroscopy revealed an intraluminal tumor with ulceration in his jejunum (Fig. 2). Histological diagnosis of the tumor showed poorly differentiated carcinoma, indicating a metastatic tumor from lung cancer.

As there were no symptoms suggesting an abdominal complication (e.g., bleeding, ileus, perforation), the
Fig. 1. Computed tomography shows a homogeneous mass (arrows) with mediastinal lymphadenopathy and two abdominal abnormalities (lymph node and intestinal wall thickening) (a–d).

Fig. 2. Double-balloon enteroscopy shows an intraluminal tumor with ulceration in the jejunum.

Fig. 3. Histopathology of the resected small intestinal tumor shows a large-cell carcinoma—a metastatic tumor of lung cancer. (H&E; a ×100, b ×400)

The patient underwent combination chemotherapy with carboplatin and paclitaxel. After two cycles of chemotherapy, there was evidence of disease progression of ileus of the small intestine, which necessitated surgical treatment. Palliative surgery was performed, and histology revealed evidence of ileus resulting from the metastatic large-cell carcinoma of the lung (Fig. 3). At 2 months after the operation, there was evidence of consciousness disturbances due to multiple brain metastases. His condition deteriorated rapidly, and he died 5 months after the definitive diagnosis.