

Multiple small bowel metastasis of primary non-small cell lung cancer

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Abstract

Gastrointestinal metastasis could be considered in the differential diagnosis of melena in the patient with NSCLC history.

KEYWORDS

gastrointestinal metastasis, NSCLC, small bowel

1 | INTRODUCTION

This study was about a 66-year-old man with small bowel metastasis of non-small cell lung cancer (NSCLC). We described the rare NSCLC metachronous multiple gastrointestinal metastatic disease, which might be considered in the differential diagnosis of melena in the patient with NSCLC history.

Primary non-small cell lung cancer (NSCLC) is the leading cause of cancer-related death in South Korea. Primary NSCLC frequently metastasizes to the brain, liver, adrenal glands, and bones.^{1,2} However, the incidence of gastrointestinal metastasis of NSCLC has been reported to be as low as 0.2%-1.7%.^{3,4} Till now, only a few studies about gastrointestinal metastasis of NSCLC have been reported⁵⁻⁷ due to its paucity. The understanding of the clinical presentation of metastasis of primary NSCLC to the gastrointestinal tract is currently incomplete. This report describes a case of gastrointestinal metastasis of NSCLC, which was treated by surgical resection with adjuvant chemotherapy.

2 | CASE PRESENTATION

A 66-year-old man presented to the thoracic surgery department for the surgical treatment of right upper lobe adenocarcinoma. The patient had a smoking history of 45 pack-year. The adenocarcinoma was diagnosed by percutaneous core-needle biopsy and F-18-fluoro-positron emission tomography (FDG-PET) showed no evidence of lymph node involvement or distant metastasis. He underwent right upper lobectomy with mediastinal lymph node dissection. Histopathological diagnosis was a poorly differentiated adenocarcinoma without visceral pleural invasion, lymphovascular invasion or regional lymph node metastasis, T1aN0M0. The patient had an uneventful clinical course and discharged without complication. The patient did not receive adjuvant therapy. Five months later, the patient was referred to emergency department because of melena and dizziness. It was thought that symptoms were expressed due to bleeding because hemoglobin was identified to be 6.8 g/dl. The esophagogastroduodenoscopy (EGDS) was performed and showed about 2cm sized polypoid lesion with oozing bleeding on the duodenal

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FIGURE 1 EGDS showed about 2 cm sized rubbery hard tumor with ulceration on the antrum (A, black arrow) and polypoid lesions with oozing bleeding on the duodenal second portion (B, black arrow)

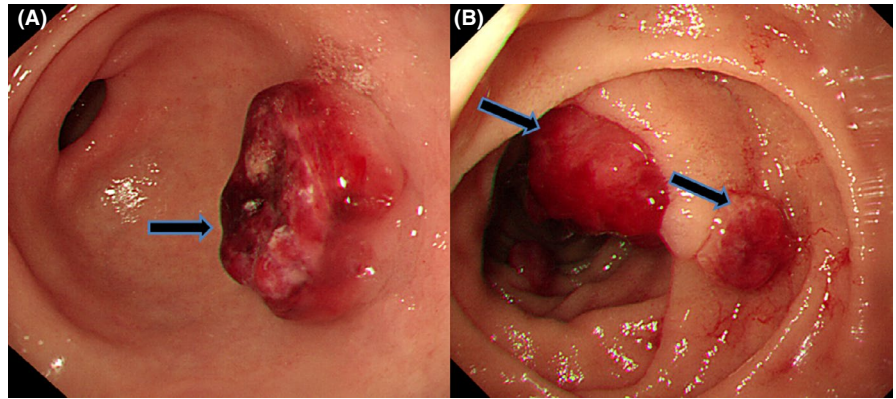
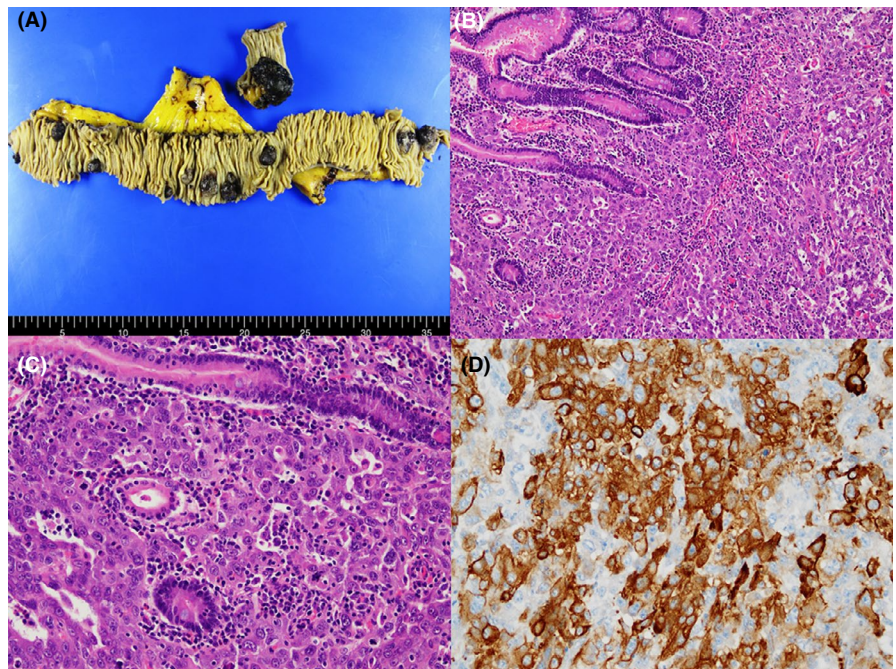


FIGURE 2 Gross picture of resected small intestine showing multiple polyps with erosion (A). Microscopic image of the duodenal polyp showing tumor-forming solid and glandular pattern with marked nuclear pleomorphism similar to those of the primary lung cancer (H&E stain, $\times 100$, B), (H&E stain, $\times 200$, C). Tumor cells showing positivity for pan-cytokeratin (immunohistochemistry, $\times 200$, D)



second portion (Figure 1). Biopsy of the duodenal lesion revealed a poorly differentiated adenocarcinoma. FDG-PET showed no definite evidence of abnormal hypermetabolic lesion suggesting distant metastasis. Subsequent laparotomy was planned, and total pancreatectomy with partial gastrectomy, splenectomy, and small bowel resection was done. Partial gastrectomy was performed due to the presence of mass in the distal antrum. Pancreatic juice leak was observed at each pancreatico-jejunal anastomotic stitch site, and the tissue was friable, resulting in total pancreatectomy conversion. Additional jejunal resection, ileal segmental resection, and end to end anastomosis were done. The length of total resected small bowel was 68 cm. Gross examination of resected specimen showed multiple polyp masses on the stomach and small intestine (duodenum, jejunum, and ileum). A total of 22 polyps (stomach: 1, duodenum: 8, jejunum to ileum: 13) were observed. These polyps were of various sizes ranging from 0.8 cm to 4.0 cm. The largest one measured 4.0 x 2.5 x 2.0 cm. Cut sections of the masses were whitish and solid.

Histologically, the tumors were composed of poorly differentiated carcinoma with a predominant sheet-like arrangement and poorly formed glands. Immunohistochemistry of the tumor showed positivity (>50%) for pan-cytokeratin, EMA, vimentin, and focal positivity (<10%) for CK7. The tumor cells were negative for TTF-1, CK20, LCA, HMB45, S100, CD31, and c-KIT (Figure 2). Based on histological similarity and the results of immunohistochemistry, the final diagnosis was metastasis of lung adenocarcinoma. Palliative chemotherapy was done with pemetrexed and cisplatin. The patient received 3-week cycle, total 3 cycles of pemetrexed 760 mg/m², and cisplatin 60 mg/m². On about 5 months later follow-up, the patient showed no evidence of disease.

3 | DISCUSSION

A small bowel metastasis of NSCLC is very rare. The natural course of gastrointestinal metastasis with lung cancer remains

unclear due to its paucity. Rossi et al described two patients with NSCLC and synchronous solitary small bowel metastasis who underwent small bowel resection, subsequent pulmonary lobectomy, and chemotherapy and were alive without evidence of disease.⁸ FDG-PET scan might have a diagnostic role in the detection of gastro intestinal metastasis of NSCLC.^{8,9} Surgical resection might be the treatment choice. Goh et al reported a case series of 8 patients with gastrointestinal metastasis from NSCLC.¹⁰ After resection of the metastasis, four of eight lived longer than six months. The role of chemotherapy could not be determined till now. Kant et al reported a patient who survived more than 4 years after undergoing palliative surgery, palliative radio- and chemotherapy.¹¹

Our case, which describes a patient who has NSCLC with metachronous multiple metastases to the small bowel, is unique because the previous case reports described occurrence of NSCLC with synchronous solitary metastasis to the small bowel.

Our report could serve as reminder that gastrointestinal metastasis might be considered in the differential diagnosis of melena in the patient with NSCLC history although it is a very rare condition.

CONSENT

Appropriate written informed consent was obtained for publication of this case report and accompanying images.

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Published with written consent of the patient.

CONFLICT OF INTEREST

None declared.

AUTHOR CONTRIBUTIONS

MKK: involved in designing the project and writing the manuscript. DKK: involved in collecting and creating the figures. WH and HYH: performed manuscript writing and editing. KHN: involved in pathologic advice. All authors have read and approved the final manuscript.

DATA AVAILABILITY STATEMENT

All data generated or analyzed during this study are included in this published article.

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