Solitary Metastatic Colon Cancer Showing a Small Depressed Configuration

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Abstract

We herein present a case of IIc-like metastatic lung cancer that was detected early. A 65-year-old man presented with diarrhea and difficulty walking. Colonoscopy demonstrated a depressed lesion in the descending colon. However, the appearance of the lesion by endoscopy with a magnifying objective was not compatible with early colon cancer. Therefore, we performed diagnostic endoscopic mucosal resection to allow for an examination of the whole lesion. A histological examination demonstrated lung cancer metastasis to the colon. Only 1.6% of lung cancers metastasize to the large intestine, and metastatic colorectal cancer is not usually detected at an early stage. In the present case, however, endoscopy and a histological examination revealed alterations in the mucosal configuration of the lesion, which were unusual for early colon cancer.

Key words: colonoscopy, metastatic colon cancer

Introduction

Gastrointestinal tract metastasis from a malignant tumor is rare, and the large intestine, in particular, is thought to be comparatively less prone to metastasis. Metastatic gastrointestinal tumors account for 1.9% of all metastatic alimentary canal tumors and 0.1-1.0% of malignant colorectal tumors (1). Among gastrointestinal tract tumors, metastasis from primary lung cancer accounts for only 0.19% of all cases (2). Such metastases are commonly detected in the small intestine (3) and have a higher predilection for occurrence in the jejunum than in the ileum. In addition, multiple (rather than solitary) lesions tend to occur in such metastases. Gastrointestinal tract metastasis is generally manifested by ileus or gastrointestinal bleeding at an advanced stage. We herein present a case of IIc-like colon metastasis from lung cancer that was detected at an early stage.

Case Report

A 65-year-old man presented with diarrhea, numbness, pain in both lower extremities, and difficulty walking. A barium enema examination indicated transverse colon stenosis, and computed tomography (CT) revealed nodular shadows in the liver. Both advanced colon cancer and metastatic liver cancer were diagnosed.

Colonoscopy showed no lesions in the transverse colon, but it did reveal a depressed lesion (3 mm) in the descending colon (Fig. 1). After indigo carmine dye spraying, the tumor and its margin became clearer (Fig. 2), and macroscopic type 0-IIc cancer was identified. Narrow-band imaging revealed slightly irregular and loose microcapillary vessels (Fig. 3). Crystal violet staining showed a small round pit pattern of Kudo’s Type IIIs (Fig. 4). The endoscopic diagnosis was early colon cancer. We performed an endoscopic mucosal resection of the lesion.

A histological evaluation revealed a poorly differentiated adenocarcinoma in the submucosa (Fig. 5). The neoplastic cells appeared to have invaded the lamina propria stroma; the duct epithelium was unaffected. Vascular invasion was confirmed (Fig. 6 and 7). We suspected a metastatic rather than primary tumor based on the histology of the tumor and the fact that the tumor cells were negative for caudal-type homeobox-2, prostate-specific antigen and chromogranin A, and positive for thyroid transcription factor-1 (Fig. 8). We strongly suspected metastasis from lung cancer.

The presence of lung cancer was confirmed by CT, which
Figure 1. Colonoscopy showed a depressed lesion in the descending colon.

Figure 2. Indigo carmine dye spraying.

Figure 3. Narrow-band imaging (NBI) showed normal vessels around the depressed area. There were slightly irregular vessels and loose microcapillary vessels in the depressed area.

Figure 4. Crystal violet staining revealed a normal pit pattern around the depressed area. The depressed area consisted of small irregular pits.

Figure 5. Histology of the resected specimen showed poorly differentiated adenocarcinoma in the submucosa (Hematoxylin and Eosin staining, ×100).

Figure 6. Lymphatic invasion (D2-40, ×400).

also revealed liver and bone metastases (Fig. 9 and 10). We diagnosed the patient with primary lung cancer based on the pathological examination and CT. The patient was transferred to the terminal care unit for the prophylactic control of pain and symptoms.
Discussion

The prevalence of lung cancer metastases to the large intestine is 1.6% in autopsy cases in Japan (4). Metastatic colorectal cancer is usually not detected at an early stage. This is probably because gastrointestinal tract metastases do not produce clinical symptoms, such as apoplexy, perforation, or intestinal atresia until the lesion becomes enlarged.

In the current case, our initial diagnosis was early primary colon cancer, which was based on the macroscopic appearance of the lesion during colonoscopy, and a metastatic tumor was not suspected. However, a retrospective analysis and confirmatory endoscopy showed alterations in the mucosal pattern in the lesion, which is not a common feature of early colon cancer. More typical images are seen for Narrow-band imaging (NBI) and pit patterns in cases of early colorectal cancer, but in the present case, the pits in the depressions were considered to correspond to atypical type III cancer. We therefore considered that in the initial lesion, there was little morphological change at the mucosal surface, and that such change was submucosal, because the tumor cells that had infiltrated into the submucosal layer had proliferated towards the epithelial side, thereby causing retraction of the normal non-malignant glandular tubes and making the pits appear small and round.

Furthermore, it was also considered that tumor cell proliferation towards the mucosal surface had led to ulceration, thereby producing 0-IIc-like changes with central depressions. Lung cancer metastasis to the large intestine mainly involves hematogenous spread (5), wherein the tumor cells initially spread to the submucosa and muscularis propria and then subsequently proliferate. Such tumors generally have diffuse infiltrating-type and submucosal tumor-like patterns.

Histopathologically, the neoplastic cells show a medullary proliferation pattern, accompanied by a fibrous stroma. Therefore, it is important to differentiate between endocrine cell carcinoma and metastasis from various organs. We considered that the metastasis might have originated from prostate cancer, but staining for prostate specific antigen (PSA) was negative. Subsequently, we considered metastasis from lung cancer and performed thyroid transcription factor-1 (TTF-1) staining, which is useful for making a differential diagnosis. TTF-1, discovered by Civitareale, shows high organ specificity and it is positive in both squamous cell carci-
noma (5-11%) and adenocarcinoma (62.5-72%) of the lung (6, 7). TTF-1 has also been reported to be expressed in 80-97% of small cell cancers. Therefore, to rule out small cell cancer in the present case, we performed chromogranin A staining, and negative results were obtained.

On the basis of these findings, we diagnosed the patient with lung cancer metastasis to the colon. This case of a IIc-like metastatic lesion from lung cancer is very rare, and the endoscopic appearance and pathological findings reported herein should therefore be important for the differential diagnosis of similar cases.

The authors state that they have no Conflict of Interest (COI).

References