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A case of primary small intestinal cancer diagnosed by laparoscopy

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The patient was a 61-year-old female who developed ileus. Physical findings showed abdominal distension but peritoneal irritation signs were not observed. After the conservative treatment by the ileus tube, encircling stenosis was observed in the jejunum at about 50 cm on the anal side from the Treitz ligament on contrast radiography of the small intestine through the ileus tube. Tumor markers were normal except for mild elevation of IL2-R (609 U/ml). After confirming sufficient bowel decompression and the absence of other lesions, surgery was performed based on a preoperative diagnosis of small intestinal tumor including adhesive ileus, GIST, or malignant lymphoma. First, under the laparoscopic observation, the lesion was resected and definitive diagnosis was established as primary moderately to poorly differentiated adenocarcinoma of the small intestine by rapid intraoperative pathological diagnosis. Then, extensive jejunal resection involving sufficient lymph node dissection was performed as open surgery. Radical surgery was successfully performed.

Key words : small intestinal cancer, laparoscopic surgery

INTRODUCTION

Primary small intestinal cancer is a rare entity among digestive tract malignant tumors, in particular, among adenocarcinoma. Since it scarcely develops initial symptoms and preoperative diagnosis is difficult, many patients are found in the already advanced state with poor prognosis [1]. Recently, as endoscopic devices and techniques are advanced, more primary small intestinal cancers can be diagnosed in the comparatively early stage and have been reported by preoperative small intestine endoscopy [2, 3]. However, it requires relatively higher techniques,thus, is far from being generalized. In this study, we performed sufficient bowel decompression by the preoperative ileus tube on a patient with primary small intestinal cancer caused by ileus, identified the obstruction site by contrast radiography of the small intestine, made a definitive diagnosis by laparoscopic surgery, and successfully performed radical surgery including sufficient lymph node dissection.

CASE REPORT

The case was a 61-year-old female. On December 2, 2002, the patient visited the nearby clinic with a chief complaint of nausea and vomiting. Upper gastrointestinal tract endoscopy and abdominal ultrasound examinations did not show any abnormality. On December 11, abdominal pain and abdominal distension were advanced and abdominal x-ray revealed marked small intestinal gas. Lower gastrointestinal tract contrast radiography was performed, with no abnormalities. On December 13, 2002, the patient, being diagnosed as having ileus,

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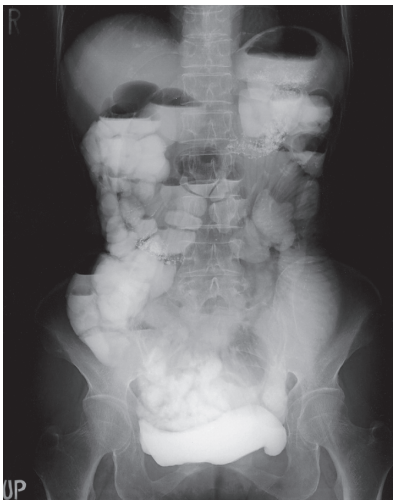

Fig. 1 Thoracoabdominal x-ray. There was no abnormality in the chest. Abdominal x-ray revealed extension of the small intestine and air-fluid level. Contrast agent for irrigoscopy was observed in the large intestine.

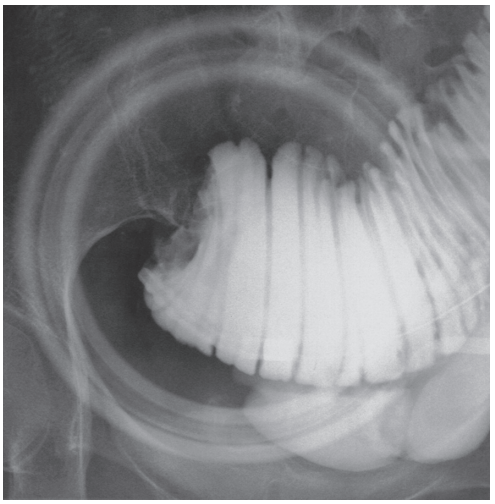

Fig. 2 Ileus tube contrast radiography. Obstructive part was observed in the jejunum at about 50 cm from the Treitz ligament.

was introduced and admitted to our institute. Past history: appendicectomy at 24 years of age.

Family history: no specific matters.

Physical findings at the time of admission: body height 148 cm, body weight 45 kg, blood pressure 105/61 mmHg, and pulse rate 74 beats/min (regular). Abdominal distension was observed, but no peritoneal irritation signs were observed. Mass was not palpated. Superficial lymph node was not palpated. No abnormality on the skin.

Hematological examination at the time of admission: Hematological or biochemical abnormality such as inflammatory reaction was not observed. With regard to tumor markers, no abnormality was observed in CEA (1.6 ng/ml), CA19-9 (9 U/ml), NSE (10 ng/ml), exept for slightly elevated IL2-R (609 U/ml).

Thoracoabdominal x-ray: No abnormal findings such as tuberculosis were observed in the pectoral region. In the abdomen, extension of the small intestine and formation of the air-fluid-level were observed. Contrast agent in the large intestine was the residue of irrigoscopy conducted in other hospital (Fig. 1).

The ileus tube contrast radiography: Encircling obstructive part was observed in the jejunum about 50 cm from the Treitz ligament. Chronic obstruction mechanism due to the extended state on the oral side could be considered. Passage to the distal side was poor. The contrast agent at least flowed toward the anal side, but obstruction or stenosis of the bowel beyond was not clear (Fig. 2).

Abdominal MRI: Heavily T2 weighted MR hydrography showed that the degree of extension of the small intestine was reduced by the ileus tube. It was difficult to evaluate the tip of the ileus, but no distinct stenosis was observed except for the tube part (Fig. 3).

Abdominal CT: It was difficult to evaluate the tip of the ileus. No metastatic tumor was observed.

Based on the above, small intestinal tumor including lymphoma or GIST was suspected. However, small intestinal endoscopy was difficult, and no definitive diagnosis was obtained. Since the obstructed site was identified, and conservative treatment using the ileus tube was judged to be impossible, surgery was performed on December 26, 2002. First, definitive diagnosis was made by trial laparoscopy, followed by radical surgery.

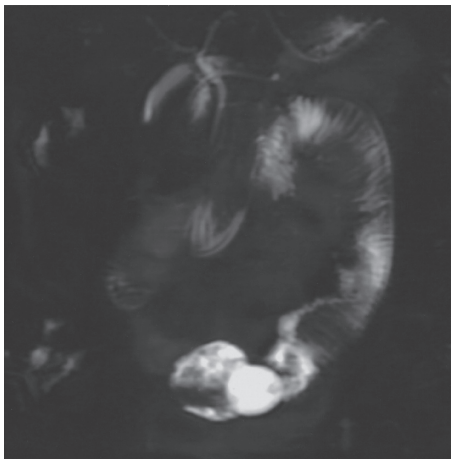

Fig. 3 Abdominal MRI. Extension of the small intestine was improved.

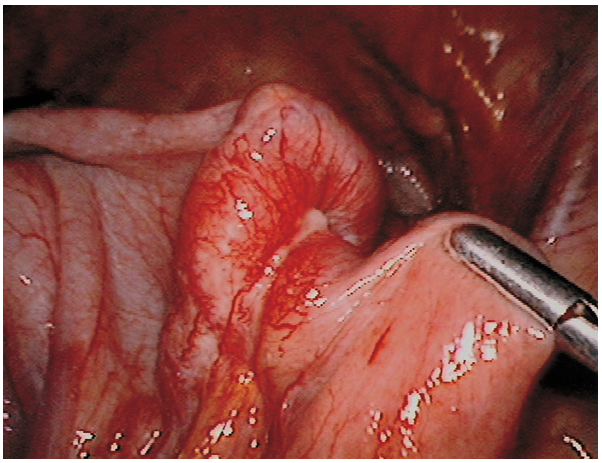

Fig. 4 Laparoscopic findings. Neoplastic obstructive lesion was observed in the jejunum, and mild invagination of intestines was observed.

Fig. 5 Surgical findings. The jejunum of tumor site was partially resected through the small incision wound.

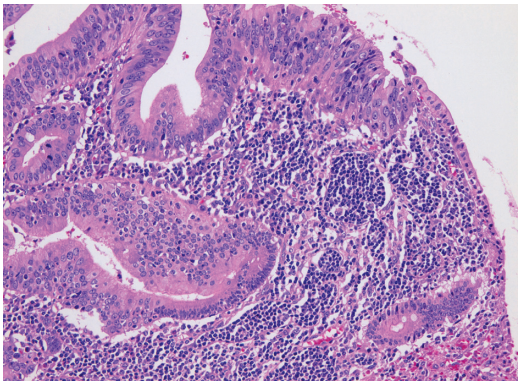

Fig. 6 Histopathological findings. Moderately to poorly differentiated adenocarcinoma was observed.

Surgical findings: A 10 mm trocar was inserted from the upper umbilical portion by open laparotomy, and the inside of abdominal cavity was observed by the laparoscope. Laparoscopy showed, similarly to ileus tube contrast radiography, a neoplastic obstructed lesion in the jejunum at about 50 cm from the Treitz ligament. The patient had complications of mild invagination of the intestine (Fig. 4), with no other lesions. A 5 mm catheter was inserted in the epigastrium and left upper abdomen, and laparoscopic partial resection of the small intestine was performed through the small incision wound (Fig. 5). Rapid pathological test of the resected sample demonstrated adenocarcinoma, and the patient was diagnosed as having primary small intestinal cancer. Then open surgery was performed for additional resection of the small intestine with lymph node dissection. About 40 cm on the oral side and about 50 cm on the anal side of the lesion were additionally resected with sufficient lymph node dissection. Lymph nodes around the lesion were markedly swelled, but no metastasis was observed in any lymph node.

Histopathological diagnosis (Fig. 6):

Sections showed proliferation of atypical cell arranged in villotubular or papillotubular structures on the surface, and invasive growth with fused or abortive glandular structures in the wall. The lesion invaded the subserosal tissue with moderately to poorly differentiated part. Focal lymphatic and venous permeation was suggested.

DISCUSSION

Small intestinal malignant tumor only accounts for 0.3-4.9 % of the whole digestive tract malignant tumors [4]. Frequency of adenocarcinoma among small intestinal malignant tumors is about 30-50 % in Western countries [5], the highest, and is about 33 % in Japan, followed by 38 % of malignant lymphoma. It is reported that the rate of small intestinal cancer in all digestive system cancers is only 1-3 % [4, 6].

With regard to the frequent site of small intestinal cancer, many of them are within 60 cm from the Treitz ligament for jejunal cancer except for duodenal cancer. In this patient, the site was about 50 cm from the Treitz ligament. For ileum cancer, most lesions are within 60 cm on the oral side from the Bauhin valve [4].

Macroscopic pathological findings distinguish tubular stenosis type, infiltration ulceration type, and polypoid type. For the jejunum or ileum, tubular stenosis type is frequent. This patient had tubular stenosis type. With regard to histological type, well differentiated adenocarcinoma accounts for the majority, similar to large intestine carcinoma. Although there is moderately or poorly differentiated adenocarcinoma, mucinous carcinoma or squamous cell carcinoma is extremely rare. This patient had comparatively rare moderately to poorly differentiated adenocarcinoma [7].

The small intestinal cancer is frequently manifested as ileus symptoms including abdominal pain or nausea and vomiting, and preoperative diagnosis is relatively difficult, thus many are found in the advanced state [8]. Hematogenous metastasis such as lymph node metastasis, pulmonary metastasis, and liver metastasis or peritoneal dissemination are frequently observed, and prognosis is considered to be poor. Treatment includes extensive resection involving sufficient lymph node dissection, and it is desirable to obtain definitive diagnosis before surgery. Survival was best for early-stage tumors and when lesions could be completely resected [1]. Since small intestinal endoscopy was advanced, recently the reports on patients with small intestinal cancer with preoperative pathological diagnosis are increasing. However, there remain technical problems, and preoperative diagnosis of small intestinal cancer is still difficult.

In this patient, the lesion was first macroscopically observed using the laparoscope, and definitive diagnosis was obtained pathologically by laparoscopic resection. Since the diagnosis was adenocarcinoma, open surgery for extensive resection of the jejunum and lymph node dissection was performed, and radical surgery was successful. If the lesion is GIST or lymphoma, it is possible to complete the surgery at the time of laparoscopic surgery. Thus, pathological definitive diagnosis by laparoscopic resection is considered to be useful in selecting surgical technique. It was considered to be important to perform preoperatively sufficient bowel decompression in order to perform surgery safely and precisely in performing laparoscopy.

CONCLUSION

We made a laparoscopic definite diagnosis and performed radical surgery. The lesion could be completely resected. A case of moderately to poorly differentiated adenocarcinoma in the jejunum in a 61-year-old female was reported.

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