

Malignant Lymphoma of the Ileum Treated by Laparoscopically Assisted Bowel Resection : A Case Report

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Primary malignant lymphoma of the small intestine is uncommon. We herein present a case of malignant lymphoma of the ileum, which was treated by laparoscopically assisted surgery. A 60-year-old male with lower abdominal pain and vomiting was admitted to our hospital. A standing abdominal X-ray showed niveau formation. Computed tomography demonstrated circumferential wall thickening in the terminal ileum. Laparoscopically assisted surgery was performed under a diagnosis of tumor of the ileum. Under laparoscopic exploration, tumor of the ileum was detected. Partial resection of the ileum and dissection of lymph nodes were performed extracorporeally. Histological findings demonstrated diffuse large atypical lymphocytes with vesicle-like chromatin and clear nucleolus. Immunologically, CD20 and CD79a were positive. These findings were compatible with those of diffuse large B-cell lymphoma. Paraintestinal lymph nodes were also involved. The postoperative course was uneventful. Neither gallium scintigraphy nor FDG-PET showed any scintillation. The patient was given R-CHOP therapy and is currently doing well with no sign of recurrence. In conclusion, we propose that laparoscopic surgery for malignant lymphoma of the small intestine is a feasible and promising therapeutic option, especially in a case demonstrating bowel obstruction, because this procedure is thought to be minimally invasive, allows quick postoperative recovery and shortened hospital stay could be expected. (Kitakanto Med J 2010 ; 60 : 367~370)

Key Words : malignant lymphoma, small intestine, laparoscopy, surgery

Introduction

Small bowel tumors account for only 0.3% of all neoplasms and considered rare.¹ Although, laparoscopic surgery for small bowel tumors is thought to have been recently performed more frequently, literature on this procedure, especially for malignant lymphoma, is still rare. We herein present a case of malignant lymphoma of the ileum, which was treated by laparoscopically assisted surgery.

Case

A 60-year-old male was admitted to our hospital because of lower abdominal pain and vomiting. His body temperature was 37.5°C and the white blood cell count was 16700/ μ l, CRP 2.1 mg/dl, LDH 560 IU/l, γ -GTP 452 IU/l, and interleukin-2 (IL-2) receptor 422 U/ml (within normal limits). Lymph nodes were not palpable. A standing abdominal X-ray showed niveau formation (Fig. 1). A long intestinal tube was inserted and the intestine was effectively decompressed.

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Fig. 1 A standing abdominal X-ray showed niveau formation.



Fig. 2 A contrast study showed stenosis of the ileum (arrows).

A contrast study showed stenosis of the ileum (Fig. 2). Enhanced computed tomography (CT) demonstrated circumferential wall thickening in the ileum (Fig. 3). Laparoscopically assisted surgery was performed under a diagnosis of tumor of the ileum. The patient was placed in a supine and reverse Trendelenburg position with his legs slightly bent and abducted. First, a 12 mm-subumbilical-trocar was inserted by the open laparotomy method, then CO₂ was insufflated into the abdominal cavity with a pressure of 10 mmHg. After laparoscopy was induced, two other working ports (5 and 12 mm) were inserted under direct vision. Under laparoscopic exploration, tumor of the ileum was detected. The diseased intestine was exteriorized through the trocar-site wound, which was extended to a minilaparotomy and an Alexis retractor (Applied Medical) was inserted to prevent port site recurrence (Fig. 4). The intestine was transected at the oral and anal side of the tumor, and functional end-to-end



Fig. 3 Enhanced computed tomography (CT) demonstrated circumferential wall thickening in the ileum (arrow).



Fig. 4 The diseased intestine was exteriorized through the trocar-site wound, which was extended to a minilaparotomy.

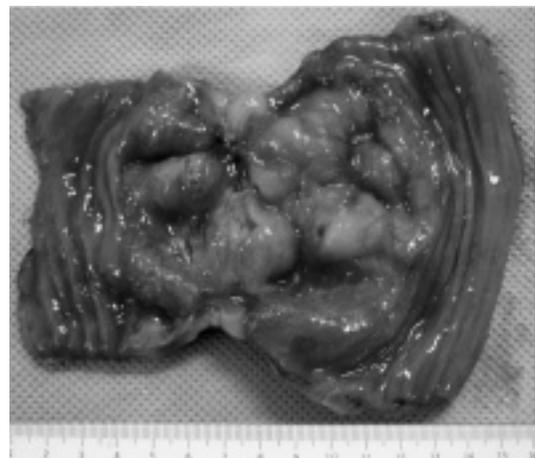


Fig. 5 Macroscopically, resected specimen showed a circumferential tumor measuring 5 centimeters in diameter, that had spread in the submucosal layer with ulcer formation.

anastomosis was performed using ENDO GIA (Auto Suture). At the same time, dissection of the para and intermediate intestinal lymph nodes was also performed. The surgical duration was 145 minutes and blood loss 40 ml. Macroscopically, resected specimen

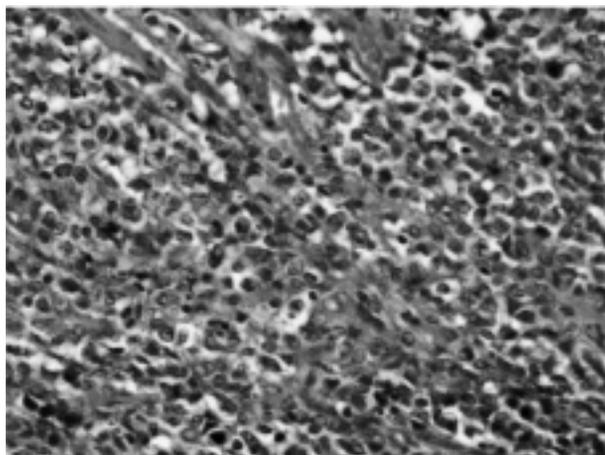


Fig. 6a Histological findings demonstrated diffuse large atypical lymphocytes with vesicle-like chromatin and clear nucleolus (H&E, $\times 400$).

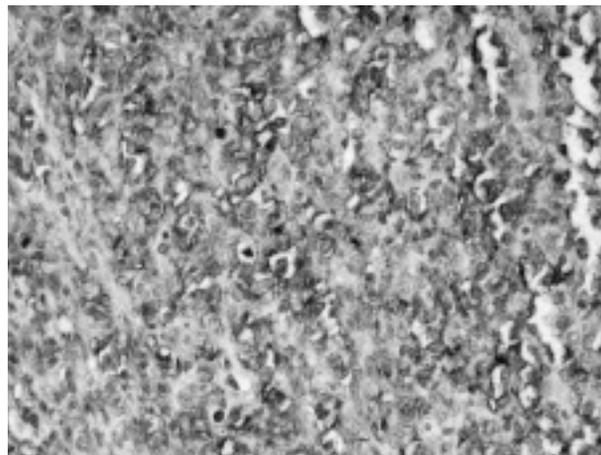


Fig. 6b Immunohistochemical examination showed CD20 was positive ($\times 400$).

showed a circumferential tumor measuring 5 centimeters in diameter, that had spread in the submucosal layer with ulcer formation (Fig. 5). Histological findings demonstrated diffuse large atypical lymphocytes with vesicle-like chromatin and clear nucleolus. Immunohistochemical examination showed that CD20 and CD79a were positive (Fig. 6). These findings were compatible with those of diffuse large B-cell lymphoma (DLBCL). Paraintestinal lymph nodes were also involved. The postoperative course was uneventful; he was able to take liquid on the 3rd, solid food on the 4th, and was discharged from our hospital on 20th postoperative day. Neither gallium scintigraphy FDG-PET nor showed any scintillation postoperatively. Eight courses of R-CHOP (rituximab, cyclophosphamide, doxorubicin, vincristine, and prednisolone) were administered and the patient achieved complete remission. He has been followed and remains disease-free after 23 months.

Discussion

Though the small bowel has the greatest epithelial surface area in the gastrointestinal tract, small bowel tumors account for only 1% to 2% of all mass lesions in the gastrointestinal tract. Malignant lymphomas comprise 16% to 40% of all neoplasms in small intestine and considered relatively rare. The most common location is the ileum (77%), followed by the ileo-cecum (42%) and the jejunum (36%). Malignant lymphomas of the small intestine occur most commonly in the 55 to 60-year-old age group and the male to female ratio is 2:1. Patients develop non-specific symptoms such as dull, crampy abdominal pain, abdominal distention, nausea, vomiting, and bleeding. The serum IL-2 receptor level is reported to be a useful marker for diagnostic and prognostic factor for DLBCL, but this value was within normal limits in

our patient.² Furthermore, association with chromosomal translocation is known in B-cell lymphoma: for example, t(3;14)(q27;q32) is the most common translocation involving BCL6 and it is predominantly associated with DLBCL.³ CT, gallium scintigraphy, and FDG-PET are essential for defining clinical stage. Contrast study using medium facilitates detecting the location of the lesion. Chemotherapy may be planned based on clinical staging by Lugano classification and pathological differential diagnosis on biopsy which may include Burkitt lymphoma, DLBCL, enteropathy-type T-cell lymphoma, or mucosa-associated lymphoid tissue (MALT) lymphoma.⁴ R-CHOP is the gold standard therapy for stage I-II B-cell intestinal lymphoma and the response rate has been reported to be 75%.⁵ Some authors suggest that irradiation is effective for non-Hodgkin lymphoma of the small intestine, however, but this treatment remains controversial.⁶ The 5-year-survival rate of malignant lymphoma of the small intestine is 0 to 58%.⁷ An earlier stage, younger age, female gender, surgical resection, low-grade histology, smaller tumor, good performance status, B-cell phenotype, and absence of B symptoms (fever, night sweats, and weight loss) are reported to contribute to survival.⁸⁻¹⁰

Recently, double balloon fiberoscopy and capsule endoscopy have played a greater role in diagnosing diseases of small intestine, however, the former is not always technically easy and the latter is not suitable for obtaining tissue specimens and rather considered to be contraindication in a case of bowel obstruction like our case.^{11,12} Other than these situations, to control bowel perforation, bleeding, and massive tumor, resection of the intestine is essential. In these cases, additional treatment such as chemotherapy can be selected based on pathological findings and clinical staging

postoperatively. Our patient was in stage II 1 on Lugano classification and R-CHOP was administered. Laparoscopic procedure was useful in our patient, and it should be considered a surgical option for malignant lymphoma of the small intestine. First, this procedure is feasible and, especially it is technically easy to mobilize the small intestine under laparoscopy because the bowel is not anatomically attached to the retroperitoneum. Secondly, laparoscopic methods are thought to be minimally invasive. The small skin wound offers some advantage not only in cosmetically, but also in avoiding postoperative intraabdominal adhesion (Fig. 7). Additionally, quick postoperative recovery and shortened hospital stay could be expected.

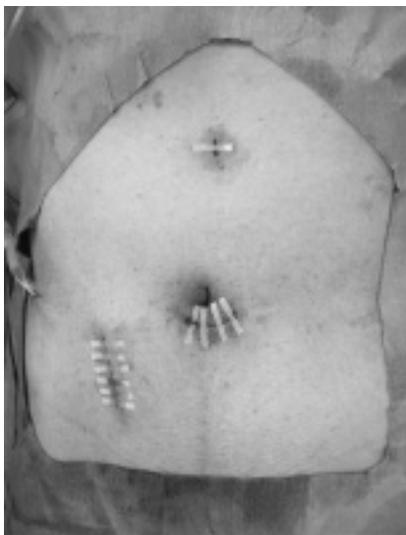


Fig. 7 Small skin wounds after laparoscopically assisted small bowel resection.

This report provides useful information on a rare case of malignant lymphoma of the small intestine treated by laparoscopic procedure. As of 2010, according to PubMed and the reference lists from the respective publications, there have been few case reports describing malignant lymphoma of the small intestine treated by laparoscopic surgery except for cases of MALT lymphoma, adenocarcinoma, and colonic lymphoma, even though laparoscopic surgery is now performed more commonly.¹³⁻¹⁶ However, we should take extra-care to prevent port site recurrence by dissemination of tumor cells.¹⁷

In conclusion, we propose that laparoscopic surgery for malignant lymphoma of the small intestine is a feasible and promising therapeutic option especially in patients with bowel obstruction.

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