

Spontaneous Perforation of Small Bowel Lymphoma Causing Massive Pneumoperitoneum : A Case Report¹

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The gastrointestinal lymphoma is a well known entity for bleeding or perforation during treatment, but spontaneous perforation is not common. We report the CT findings of an unusual case of small bowel lymphoma which presented with massive pneumoperitoneum following spontaneous perforation.

Index Words : Intestinal neoplasms
Lymphoma, CT
Intestines, perforation
Intestines, CT

Perforation of the small bowel lymphoma is rarely seen and less than 30 cases have been reported in English literatures (1-5). To our knowledge, massive pneumoperitoneum resulting from spontaneous perforation of the small bowel lymphoma has not been reported. We report the CT findings in a case with extensive pneumoperitoneum following spontaneous perforation of the small bowel lymphoma.

CASE REPORT

A 26-year-old man presented with diarrhea for 1 month and hematochezia for 5 days, and had experienced severe abdominal pain and syncope two hours before admission. He showed physical signs of peritoneal irritation, and his temperature had risen to 38 °C. Laboratory studies showed a leukocyte count of 25,400/mm³, with 85% granulocytes and 9% lymphocytes. Serum chemistry values were normal. A urine specimen showed 2-5 white cells per high power field.

A plain radiograph of the chest demonstrated large amounts of bilateral subphrenic free air. Computed tomography (CT) of the abdomen showed extensive pneumoperitoneum, and a huge cavitory lesion containing air and fluid was demonstrated in the right lower abdomen and pelvic cavity (Fig. 1). The small

bowel wall was markedly thickened with adjacent abnormal soft-tissue strands.

Emergency laparotomy revealed a about perforation in the distal ileum about 5cm long and extending to the ileocecal valve. The distal ileum, appendix and cecum were removed, and a primary end-to-end ileocolic anastomosis was performed. The resected ileum, 64 cm in length, showed two soft tissue masses along the mesenteric border. The distal mass, measuring 10 × 5 × 3cm, was located 3.5cm away from the distal resection margin. The 3 × 3 × 1cm proximal mass was located 11cm away from the proximal resection margin. There was an area showing diffuse dark necrotic change, 8cm in length and 10cm in internal circumference, in the mucosa of the distal tumor where the perforation occurred (Fig. 2).

Microscopic examination revealed malignant lymphoma of the diffuse large cell type. All resected lymph nodes were negative for metastasis. There were no complications after surgery and the patient was followed up for a year with no evidence of recurrence after chemotherapy.

DISCUSSION

The clinical presentation of patients with primary gastrointestinal lymphoma is similar to that of other gastrointestinal malignancies, but quite different from that seen in nodal lymphoma. The main symptom is abdominal pain, and most patients are initially handled in surgical departments. It usually presents with palpable mass, intestinal obstruction, diarrhea or cachexia but

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Received June 12, 1996; Accepted September 19, 1996
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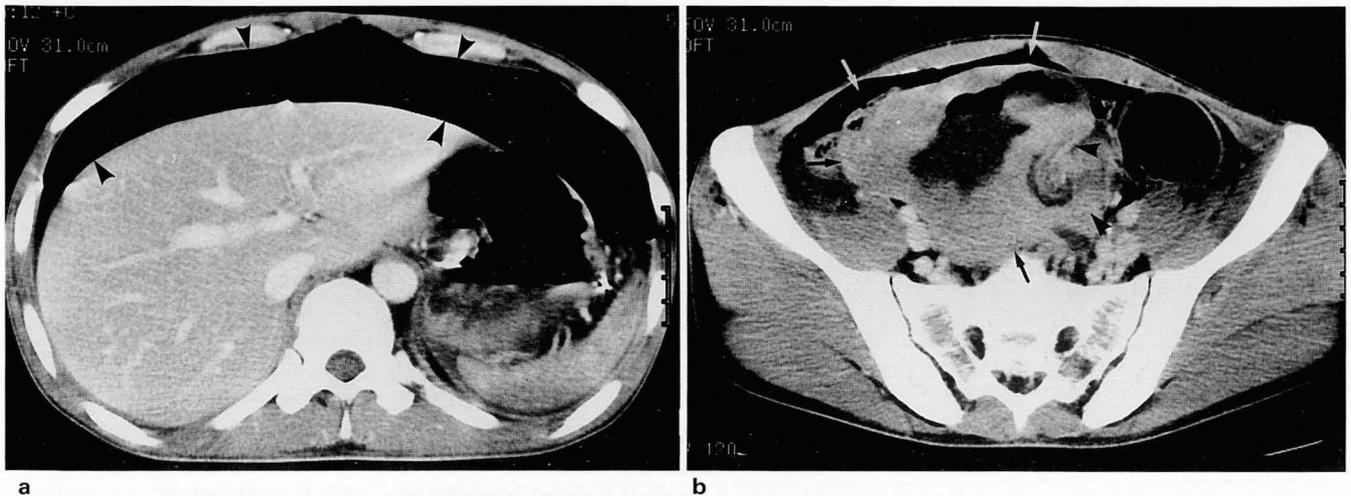


Fig. 1. a. Contrast enhanced CT scan of upper abdomen shows massive pneumoperitoneum (arrowheads).
b. CT scan of lower abdomen shows a huge soft tissue mass containing internal necrosis (black arrows). The distal ileal loops have marked wall thickening (arrowheads). Note pneumoperitoneum anterior to the necrotic mass (white arrows).

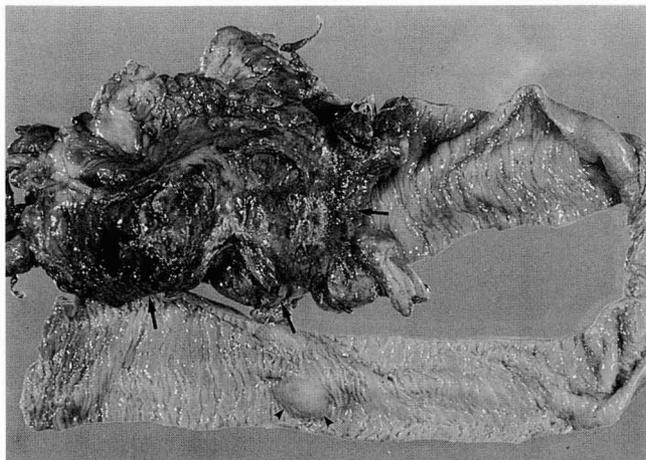


Fig. 2. The terminal ileum of the resected specimen reveals a 10 cm, perforated necrotic mass (arrows). Note another 2cm, smooth elevation in the distal ileum which is also confirmed as lymphoma (arrowheads).

gastrointestinal hemorrhage or perforation may also occur (3).

Extraluminal air on plain radiograph is a clue in the diagnosis of a perforated hollow viscus. However, it is not visible in 30% to 50% of cases because the perforation is very small, self-sealed, or well contained by the adjacent structures, as in diverticulitis or appendicitis (6). The most frequent cause of pneumoperitoneum with peritonitis is perforation of a peptic ulcer. In about half of such perforations, however, free intraperitoneal gas cannot be detected (7). In the small bowel, pneumoperitoneum is most commonly seen in patients with typhoid fever and perforations produce relatively small amounts of free intraperitoneal gas because the small

bowel does not usually contain substantial amount of gas.

Approximately 20% of primary small bowel malignancies are lymphomas (8, 9) and most small bowel lymphomas are non-Hodgkins lymphomas (2). Spontaneous perforation of the small bowel can occur in ischemic or bacterial enteritis, Crohns disease, diverticulitis, foreign body ingestion, and as the result of massive bowel dilatation due to obstruction by a tumor (6). Perforation of the gastrointestinal lymphomas has occurred less rarely in the small bowel than in the stomach (1-3). Less than 10% of small bowel lymphomas have perforated. In primary small bowel lymphomas, the bulk of the tumor lies within the intestinal wall, but there is often a direct extension into the small bowel mesentery and spread to the regional lymph nodes. The two radiographic lesion patterns are circumferential and cavitory (4). The former type is characterized by a sharply circumscribed annular tumor involving a relatively long segment of the small bowel. In advanced cavitory lymphoma, ulceration extends into the mesentery and results in cavitation of the bulk of the tumor. When the cavitated mesenteric portion of the tumor perforates into the mesentery, adherence to small bowel loops and abscess formation can occur. The major part of perforation of small bowel lymphoma is known to occur during radiotherapy and chemotherapy (10). Reported cases of small bowel lymphoma with perforation are caviary lesions and confined perforations (1-5). Our case presented with unusual clinical and radiological findings suggestive of peritonitis, which were resulted from free perforation of the tumor into the peritoneal cavity.

REFERENCES

1. Ehrlich AN, Stalder G, Geller W, Sherlock P. Gastrointestinal manifestation of malignant lymphoma. *Gastroenterology* **1968**; 54:1115-1121
2. Lewin KJ, Ranchod M, Dorfman RF. Lymphomas of the gastrointestinal tract: a study of 117 cases presenting with gastrointestinal disease. *Cancer* **1978**; 42: 693-707
3. Green JA, Dawson AA, Jones PF, Brunt PW. The presentation of gastrointestinal lymphoma: study of a population. *Br J Surg* **1979**; 66:798-801
4. Rubesin SE, Gilchrist AM, Bronner M, et al. Non-Hodgkin lymphoma of the small intestine. *RadioGraphics* **1990**; 10: 985-998
5. Fishmann EK, Kuhlman JE, Jones RJ. CT of lymphoma: spectrum of disease. *RadioGraphics* **1991**; 11: 647-669
6. Ghahremani GG. Radiological evaluation of suspected gastrointestinal perforations. *Radiol Clin North Am* **1993**; 31: 1219-1234
7. Eisenberg RL. *Gastrointestinal radiology: a pattern approach*. 2nd ed. Philadelphia: J. B. Lippincott company, **1990**: 892-902
8. Craig O, Gregson R. Primary lymphoma of the gastrointestinal tract. *Clin Radiol* **1981**; 32: 63-71
9. Dargosics B, Bauer P, Radaszkiewicz T. Primary gastrointestinal non-Hodgkins lymphomas: a retrospective clinicopathologic study of 150 cases. *Cancer* **1985**; 55:1060-1073
10. Hande KR, Fisher RI, DeVita VT, Chabner BA, Young RC. Diffuse histiocytic lymphoma involving the gastrointestinal tract. *Cancer* **1978**; 41: 1984-1989

대한방사선의학회지 1996; 35(6): 945~947

많은 양의 기복을 동반한 소장 임파종의 자발성 천공: 1예 보고¹

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장관 임파종의 치료시 합병증으로 출혈이나 천공이 생긴다는 것은 잘 알려져 있으나, 자발성 천공은 드물게 보고되었다. 저자들은 소장 임파종에서 자발성 천공이 발생한 후 기복을 초래한 증례를 경험하였기에 CT 소견을 보고하는 바이다. 복부 CT 에서 회장벽의 비후를 동반한 큰 과사성 종양이 관찰되었으며, 천공으로 많은 양의 기복이 발생하였다.

1997년도 연세의대 진단방사선과 연수강좌 안내

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