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【 CASE REPORT 】

Obstructive Colitis with Minor Perforation Induced by Double Sigmoid Adenocarcinoma

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Abstract:
A 72-year-old women was referred to our hospital because of lower left abdominal pain. Computed tomography showed prominent sigmoid colon dilation and double tumors on both the oral and anal sides. Surgical resection revealed an expanded sigmoid colon involved in double cancer that showed strong adhesion to the surrounding tissues. The pathological findings revealed obstructive colitis and minor perforation in the dilated colon. The minor perforation was considered to have been caused by fecal impaction in the closed cavity between the two tumors, resulting in an increase in colon pressure.

Key words: obstructive colitis, colon adenocarcinoma, perforation

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Introduction

Obstructive colitis is a disease in which nonspecific inflammatory lesions or ulcer lesions develop on the oral side of an obstructive or stricture lesion in the colon due to an increase in canal pressure.

We herein report a case of obstructive colitis with minor perforation induced by double cancer detected with abdominal pain. Surgical resection revealed strong adhesions due to inflammation with the surrounding organs and tissues. It was thought that the fecal impaction in the obstructed part had caused the rise in colon pressure leading to minor perforation.

In this case, the distance between the 2 tumors was only about 10 cm, and the feces stuck in that closed space were considered to have caused the increase in internal pressure.

Case Report

A 72-year-old woman was referred to our hospital because of left lower quadrant abdominal pain started for 1 month.

Her medical history included brain cavanous hemangioma, for which surgical resection had been performed, and hypertension, but no abdominal diseases. She had no familial history. A general examination showed a slight fever and left lower abdominal pain. Her bowel sounds were promoting, and she had a small amount of gas and defecation. There were no palpable masses and no peritoneal signs. The blood test showed that her white blood count was 14,600/μL, and C-reactive protein was 24.6 mg/dL. The inflammation was improved by the administration of antibiotics. Contrast-enhanced computed tomography (CT) showed that the sigmoid colon was prominently expanded, and contrast-effect masses with stenosis were found on both the anal and oral sides of the dilated colon (Fig. 1). In addition, multiple lung nodules were found in both lobes of the lung, and multiple lung metastasis from colon cancer were suspected. Colonoscopy was performed without bowel preparation in order to evaluate the obstruction and perform a biopsy.

An endoscopic examination revealed that the anal side of the sigmoid colon was entirely constricted due to a tumor, but the endoscope could pass through the stricture, and the oral side colon of the stenosis was enlarged with stored feces (Fig. 2a). Erosions and longitudinal ulcers were found in the dilated colon mucosa (Fig. 2b, c). No assessment of the mass on the oral side or transanal decompression tube insertion was possible because of the risk of perforation.

A lower gastrointestinal tract series under colonoscopy

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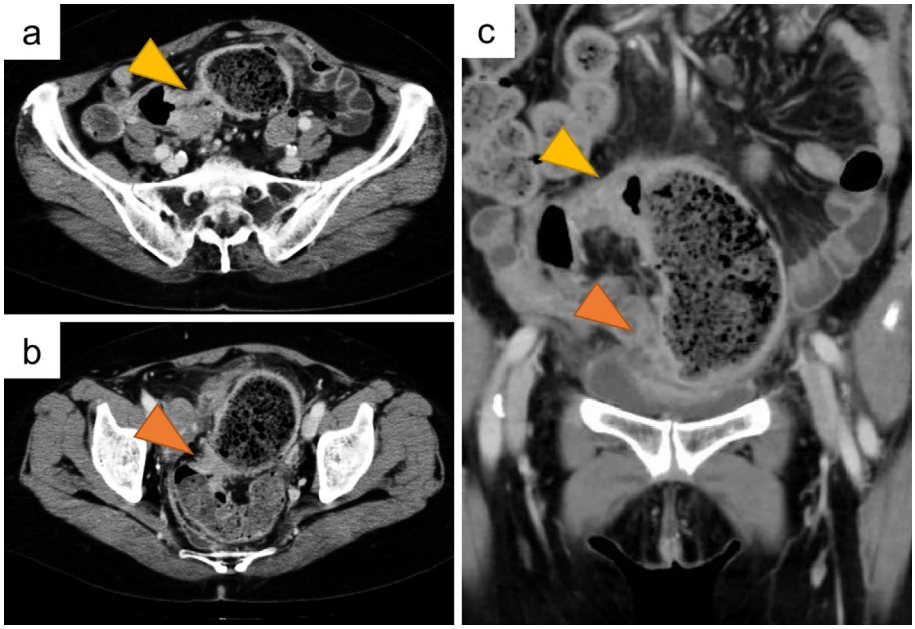

Figure 1. **Abdominal contrast enhanced computed tomography (CT) findings. Contrast effect masses sandwich the dilated colon filled with feces [yellow arrowheads indicate the anal-side mass (a and c), orange arrowheads indicate the oral-side mass (b and c)].**

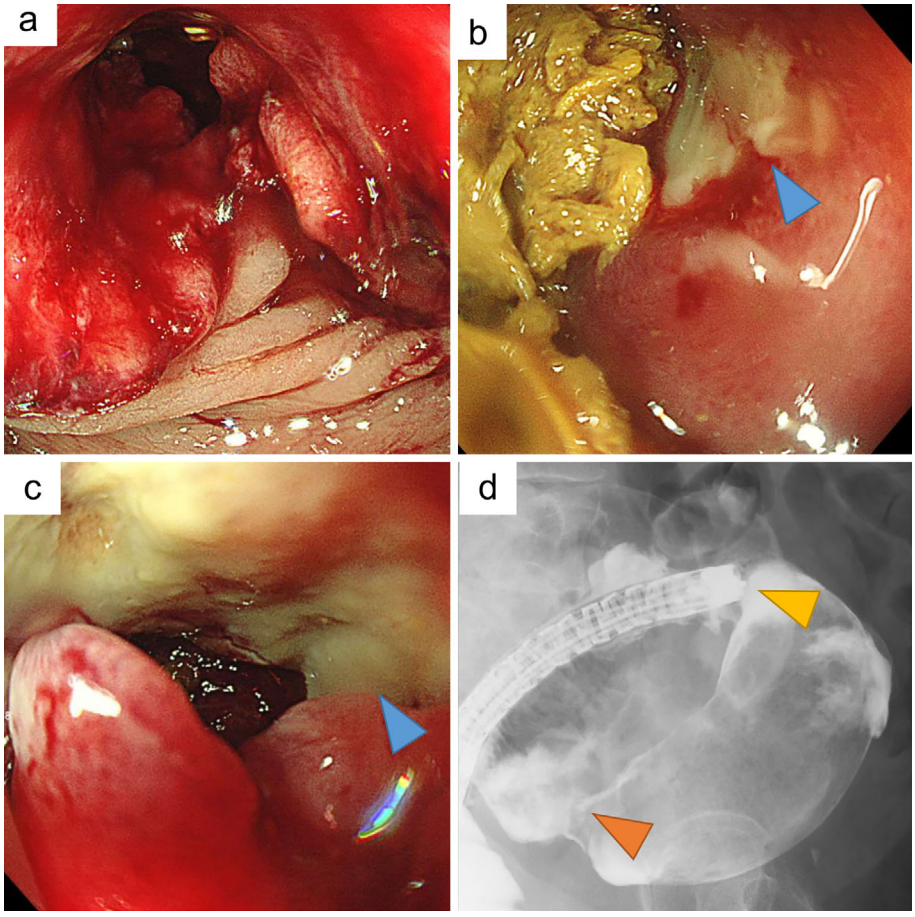

Figure 2. **An endoscopic examination of the sigmoid colon. The sigmoid colon was stenosed by an anal-side mass filled with hard stools (a). Shallow longitudinal ulcer in the dilated colon (blue arrowhead, b and c). Gastrointestinal series showing the stenosis-sandwiched dilated colon (yellow arrowhead: anal-side mass, orange arrowhead: oral-side mass, d).**

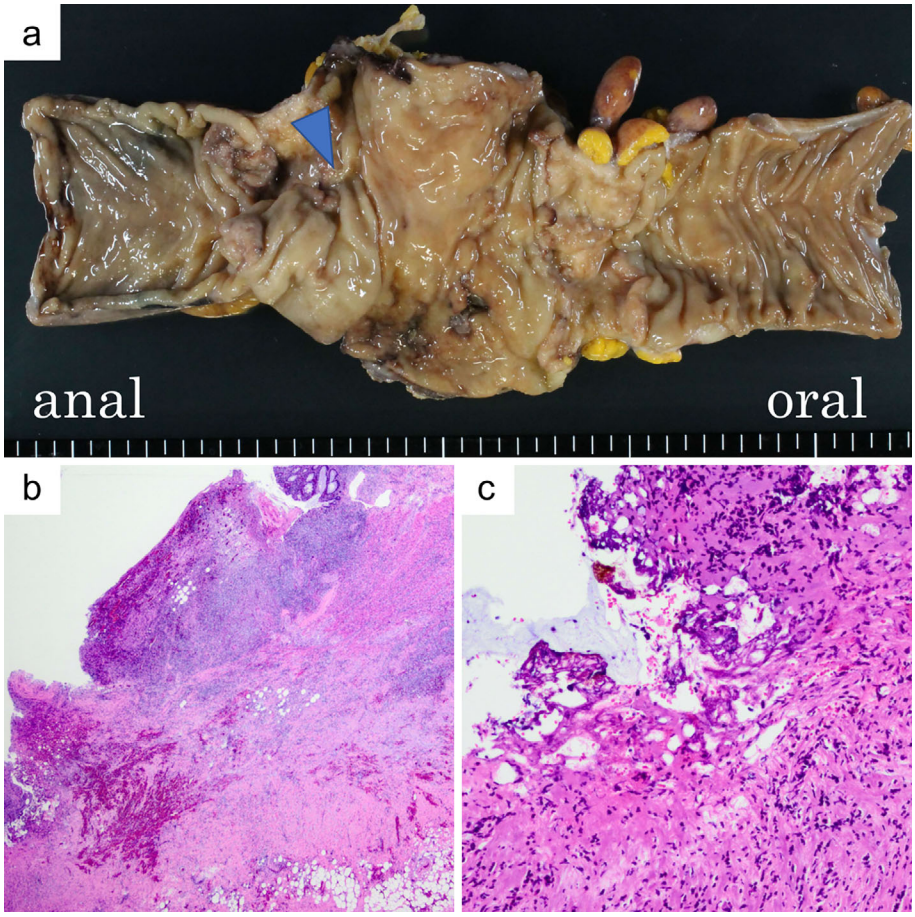

Figure 3. **Macroscopic findings of surgical resection of the colon (a). Longitudinal ulcer at the oral side of cancer (blue arrowhead). A histopathological examination showed the inflammation and ulcers in the sigmoid colon. Hematoxylin and Eosin staining (×40 b, ×100 c).**

showed stenosis on both the oral and anal sides of the dilated sigmoid colon, and no leakage was observed (Fig. 2d). CT after endoscopy showed no free air or any suggestion of perforation. A biopsy of the tumor was performed, and no exacerbation of abdominal pain was found after the examination. A histopathological analysis revealed adenocarcinoma. The preoperative diagnosis was double cancer in the sigmoid colon that had induced obstructive colitis between the tumors.

On day 14, surgical resection was performed to relieve the stenosis by laparoscopic surgery. Regarding the intraoperative findings, tumors were observed on both sides. Two masses had adhered firmly to the surrounding tissues, including the small intestine and bladder, and minor perforation was found around the enlarged colon. In addition, many lymphadenopathies were found in the surrounding tissues and were thought be metastases. The pathological diagnosis revealed that both sides of the tumor were adenocarcinoma, and longitudinal ulcers were found on the oral side of the cancer (Fig. 3).

The patient had paralytic ileus after surgery, but it was conservatively relieved, and she discharged hospital on day 38.

Discussion

Obstructive colitis was first reported in 1964 by Glotzer as an ulcerative lesion of the colon in an animal experimental model (1). Most cases are caused by obturation due to colon cancer, and Gratama et al. reported that among 50 cases of obstructive colitis in the United States and Europe, 26 had malignant colonic stenosis, and 15 of the 24 benign colonic stenosis cases were caused by colon diverticulum (2).

The incidence of obstructive colitis is about 0.3%-7% among all colorectal cancer cases, and it frequently occurs in the left colon and rectum (3). The degree of inflammation varies from a longitudinal ulcer alone to necrosis and perforation (4).

In this case, the obstruction by double cancer occurred in a short distance of 10 cm, so the feces likely accumulated inside the colon, causing a local increase in the luminal pressure. In cases where the stool and gas cannot flow back to the oral side in a limited space, closed-loop obstruction occurs, and the pressure in the colon increases. When the intraluminal pressure increases to 35 cmH_2O for several hours, insufficient mural circulation leads to ischemic damage (5),

and necrosis is induced with a continuous intraluminal pressure exceeding 40 cmH_2O, resulting in marked dilatation of the luminal wall and ultimately perforation of the colon (6). Uda et al. reported that leakage occurred in 10% of patients with extensive ulcers in cases of obstructive colitis (7).

We encountered a rare case of obstructive colitis caused by double colon cancer. Since the enclosed space between the two tumors was very small in this case, decompression with an ileus tube was considered not likely to succeed. Fortunately, in our patient, the inflammation was conservatively controlled by antibiotics before surgical resection, despite the minor perforation at the sigmoid colon, which made single-stage colon anastomosis possible and allowed colonostomy to be avoided. However, obstructive colitis often induces septic shock or peritonitis due to bacterial translocation or perforation, so Hartmann's operation or colonostomy should be selected in such situations.

The presence of perforation and prompt indications for surgical resection, including emergency surgery, should be carefully evaluated.

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

References

1. Glotzer DJ, Roth SI, Welch CE. Colonic ulceration proximal to obstructing carcinoma. Surgery **56**: 950-956, 1964.
2. Gratama S, Smedts F, Whitehead R. Obstructive colitis: an analysis of 50 cases and a review of the literature. Pathology **27**: 324-329, 1995.
3. Matsubara H, Kobayashi Y, Miyata K, Takeuchi E, Hattori T. A case of obstructive colitis with retroperitoneal penetration. Nihon Rinsho Geka Gakkai Zasshi (J Japan Surg Assoc) **61**: 1332-1335, 2000 (in Japanese, Abstract in English).
4. Toner M, Condell D, O'Briain DS. Obstructive colitis. Ulceroinflammatory lesions occurring proximal to colonic obstruction. Am J Surg Pathol **14**: 719-728, 1990.
5. Boley SJ, Agrawal GP, Warren AR, et al. Pathophysiologic effects of bowel distention on intestinal blood flow. Am J Surg **117**: 228-234, 1969.
6. Saegesser F, Sandblom P. Ischemic lesions of the distended colon: a complication of obstructive colorectal cancer. Am J Surg **129**: 309-315, 1975.
7. Uda K, Nanba Y, Morioka T. A case of perforated obstructive colitis associated with colon cancer. Hiroshima Igaku **46**: 617-620, 1993 (in Japanese).