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Ulcerative Colitis complicated by a Leaked Colojejunal Fistula: Report of a Case

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Abstract We report here a case of ulcerative colitis (UC) with a leaked colojejunal fistula. The patient was a 25-year-old woman with a history of UC for 14 years and with a colojejunal fistula between the descending colon and the jejunum. She was admitted to our department for a sudden attack of severe abdominal pain. On physical examination, the abdomen was distended and generally tender with signs of peritoneal irritation. Abdominal computed tomography (CT) revealed ascites standing in the abdominal cavity and fluid collection around the descending colon. Accordingly, she was diagnosed as having a panperitonitis. An emergency laparotomy revealed advanced UC with the leaked colojejunal fistula. She underwent a subtotal colectomy with ileostomy and rectostomy and a partial resection of the jejunum including the fistula. The presence of an entero-enteric fistula, of which a colojejunal fistula is one type, is characteristic in Crohn's disease but is the rarest complication in UC, and only 11 cases including our case have been reported in the world. This seems to be the first reported case that progressed to panperitonitis in association with leakage of the fistula in UC.

Key Words: ulcerative colitis, entero-enteric fistula, panperitonitis, leakage

Introduction

Since ulcerative colitis (UC) usually does not involve all layers of the intestinal wall, fistula and abscess formation rarely occur in this condition compared with Crohn's disease, which is characterized by chronic inflammation extending through all layers of the intestinal wall. Thus, the presence of an entero-enteric fistula has been thought to exclude the diagnosis of UC. We report here a colojejunal fistula in a case of UC, and review the 10 other reported cases of entero-enteric fistulas in the world along with a description of the type of fistulas that are more common complications in UC.

Case Report

A 25-year-old woman with a 14-year history of chronic ulcerative colitis (UC) whose symptoms were controlled by sulfasalazine was in a good condition until 2 months before admission, when she developed intractable bloody diarrhea, intermittent abdominal pain, fever, nausea, and vomiting.

Findings on barium enema examination (Fig. 1) revealed advanced ulcerative colitis, a kind of lead-pipe phenomenon, and an entero-enteric fistula between the descending

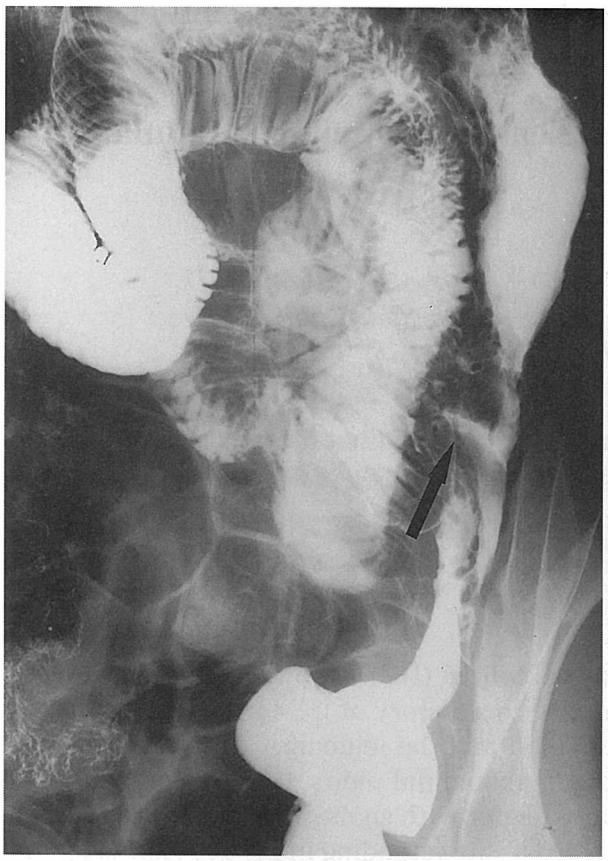

Fig 1. Barium enema demonstrates advanced ulcerative colitis, a kind of lead-pipe phenomenon, inflammatory pseudopolyps, and colojejunal fistula (➡).

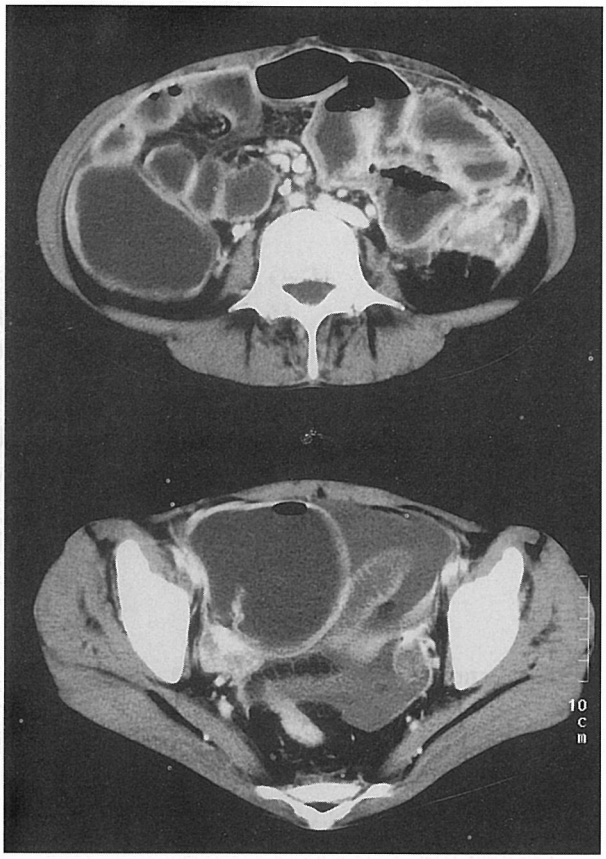

Fig 2. Abdominal CT reveals ascites standing in the abdominal cavity. Fluid collection and enhanced effect are apparent on inflamed tissue around the descending colon.

colon and jejunum. Because of the presence of the colojejunal fistula, no further filling of the colon was attempted. Medical treatment using steroids was begun to control the inflammatory disease of the colon. However, her condition took a turn for the worse, and severe abdominal pain developed; so she was referred to our department for surgical therapy.

On physical examination, she appeared chronically ill with sign of dehydration. Her body temperature was 40℃ ; blood pressure was 80/50 mmHg ; pulse rate was 130/min ; and respiration rate was 16/min. The abdomen was distended and generally tender with signs of peritoneal irritation. The laboratory examinations revealed the following: hemoglobin, 10.6 g/dl ; white blood cell count, 12,600/μl, of which 86.5% were polymorphonuclear cells; total protein value, 6.1 g/dl with 3.0 g/dl albumin; blood sugar level, 148 mg/dl. The values of blood urea nitrogen, liver function studies, and electrolytes were within normal limits.

An abdominal radiograph showed no evidence of free air. But abdominal CT (Fig. 2) revealed ascites standing in the abdominal cavity and fluid collection around the descending colon. An emergency laparotomy was performed following the diagnosis of panperitonitis. When the abdominal cavity was opened, massive ascites which were slightly turbid but not stinking were found. The entire large bowel was affected by the ulcerative colitis, but the small bowel was almost normal. In the densely adhered tissue accompanied by pus, a leaked fistula was confirmed between the descending colon and the jejunum about 20 cm distal from the Treitz ligament (Fig. 3). Following a sharp, blunt dissection, a subtotal colectomy with ileostomy and rectostomy and a partial resection

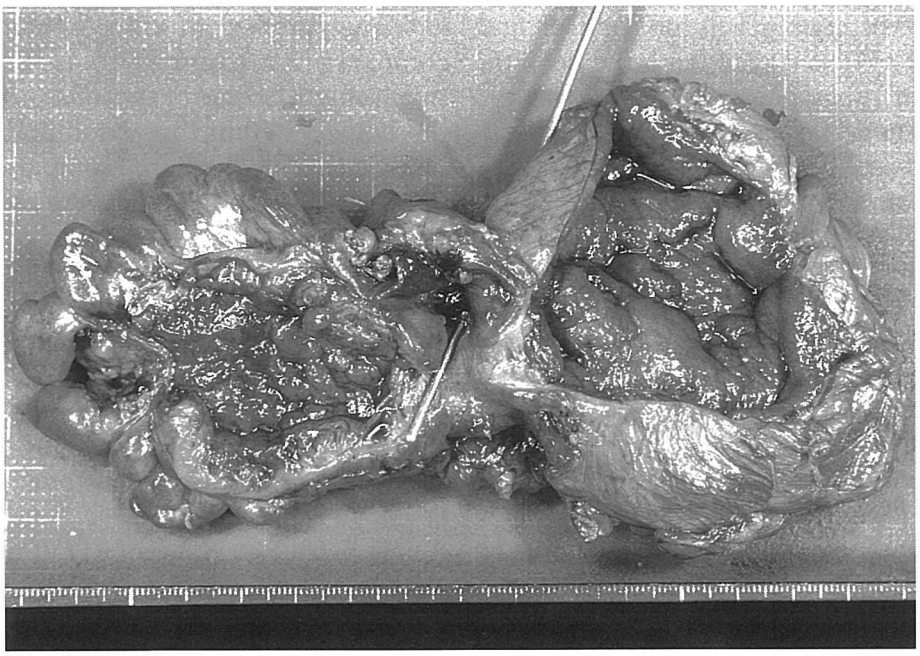

Fig. 3 The mucosal surface of the colon is edematous and distorted to varying degrees with the presence of inflammatory pseudopolyps and irregular ulcerations. A surgical sound demonstrates the fistulous tract between the descending colon and jejunum.

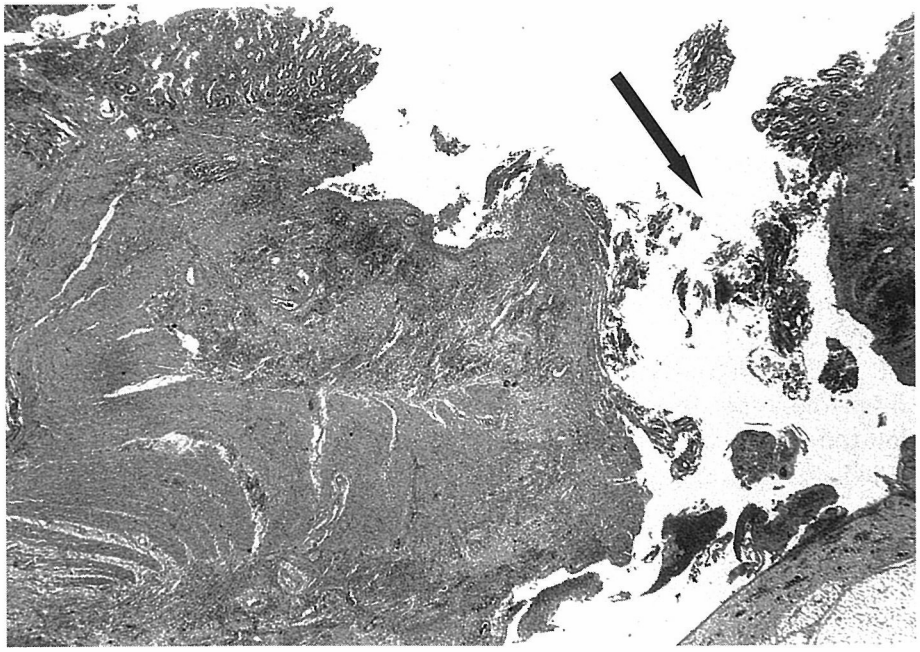

Fig. 4 Microscopic section revealed intervening fibrous tissue with inflammatory cells. The leaked fistulous tract was confirmed through all layers of the wall and leading to the jejunum (➡). (H.E.× 5)

of the jejunum including the fistula were performed.

The histologic finding was "chronic ulcerative colitis with a leaked fistulous tract". There was no evidence of granulomatous reaction (Fig. 4).

Postoperative course was uneventful and the patient was discharged from the hospital on the 60th postoperative day. She is scheduled to undergo the second-stage operation 3 months hence, a restorative proctocolectomy with ileal J-pouch anal canal anastmosis.

Discussion

Traditionally, rectovaginal, colocutaneous, or enterocolic fistulas have been associated with Crohn's disease but not with UC. The presence of such a fistula has been thought to exclude a diagnosis of UC. Undoubtedly, fistulas are more common in Crohn's disease because of its transmural inflammatory process. However, several reports have indicated that fistulas can occur as a complication of both UC and Crohn's disease. For instance, in a Mayo Clinic report[1] of 252 patients with rectovaginal fistulas, the fistulas were secondary to UC in 52 (21%) and to Crohn's disease in only 5 (2 %). De Dombal et al.[2], in a series of 465 patients with UC, found that an anorectal fistula is the most frequent site of complications (17.6% of patients).

In contrast to the above types of fistulas, entero-enteric fistulas are rarely associated with UC (Table 1). In a series of 624 patients with UC, Edwards et al[3]. found one patient with a fistula between the tip of the appendix and the sigmoid colon, and two patients both had a fistula between the colon and a loop of small intestine (0.5% of patients). Others have reported various types of entero-enteric fistulas associated with UC[4,5,6,7,8,9,10]. The extreme rareness of entero-enteric fistulas, compared for example to rectovaginal fistulas, might be due to the loose attachment of the bowels within the abdominal cavity and relatively wide distance compared with that between the rectum and vagina, for example.

The sequence of events leading to fistulas has not been definitely established. However, in UC, the natural course of fistulas is strongly correlated with the disease activity because fistulas generally occur during periods of UC exacerbation and rarely during periods of remission. Practically, De Dombal et al[2]. reported that no rectovaginal fistulas developed in any of their female patients during periods of remission, but the incidence was 2.1% following severe exacerbation of UC. We therefore surmise that the episode of intractable bloody diarrhea and intermittent abdominal pain, that occurred 2 months prior to admission corresponded to the development of the colojejunal fistula in our present patient. That is, a localized abscess occurred with adherence of the descending colon to the jejunum, and eventually a fistulous tract connected the two bowels. Then, leakage of the fistula happened arround the time of admission. Froines et al[11]. reported that symptoms secondary to the formation of the fistulas were either absent or could not be differentiated from the more severe symptoms of active UC in half of their patients. Therefore, attentive follow-up with periodic barium enema is indispensable for the management of chronic UC, even if clinical symptoms are absent. Furthermore, once a fistula is confirmed, early surgical intervention is necessary because the failure of conservative

Table 1. entero-enteric fistulas associated with UC

Reporter	Year	Number	Spot
Ormady et.al	(1937)	1	cologastric, coloduodenal
Altchek et.al	(1957)	1	cologastric, coloduodenal
Thoeny et.al	(1960)	1	cologastric
Edwards et.al	(1964)	2	colon-small intestine
		1	colon-appendix
Reaves et.al	(1966)	1	gastrojejunocolic
Komatsubara et.al	(1989)	1	rectoileal
Ueyama et.al	(1994)	1	colocolic
Shiroma et.al	(1997)	1	colocolic

treatment has predominantly resulted in further danger if perineal sepsis occurs in association with leakage.

We report here a case of UC complicated by a leaked colojejunal fistula. This is the 11th such entero-enteric fistula in a case of UC to have been reported in the medical literature. Traditionally, entero-enteric fistulas have been most consistent with diverticulitis, perforated carcinoma, or Crohn's colitis. However, an entero-enteric fistula due to UC should be considered in spite of the rareness of this entity.

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