Successful Resection of a Duodenal Fistula Complicated with Recurrent Crohn’s Disease at the Site of Previous Ileocolonic Anastomosis: Report of a Case

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Abstract
A duodenal fistula complicated with Crohn’s disease may present a difficult management problem. We herein report the case of a 22-year-old woman who developed a colo-ileo-duodenocutaneous fistula with recurrent disease at the ileotransverse anastomosis. The patient had previously undergone an ileoascending colectomy for Crohn’s disease. Preoperative colonoscopy did not reveal any evidence of intrinsic duodenal Crohn’s disease. Symptomatology was obstructive and a consequence of associated ileocolic lesions. The patient underwent a resection of the diseased bowel including the duodenal component of the fistula. Surgery included a simple closure of the duodenal defect with both omental pedicle graft wrapping and decompression of the duodenum via a gastrostomy tube. The patient had an uneventful postoperative course. The duodenal fistula was successfully cured. Our experience demonstrates that duodenal fistulas may be successfully treated when the duodenum is not involved with intrinsic Crohn’s disease. Such treatment consists of a resection of the diseased bowel segment and a primary simple closure of the duodenal defect.

Key words Recurrent Crohn’s disease · Duodenal fistula · Ileocolonic anastomosis

Introduction
Duodenal fistula complicated with Crohn’s disease is rare.1-25 A surgical series described an incidence ranging from 0.3% to 2.2% of all cases.1,2,4,5,9,16,24 A duodenal fistula almost always results from an involvement of Crohn’s disease in the transverse colon or recurrent disease at the ileocolonic anastomosis.2,4 The appropriate surgical management of enteroduodenal fistulae follows the principle of a resection of the primary disease, an extirpation of the fistula, and a closure of the duodenal defect. However, controversy remains regarding how the duodenal closure should be managed.5,6 We herein report the case of a patient who developed a duodenal fistula that originated from recurrent Crohn’s disease at the site of the previous ileotransverse anastomosis. The fistula was successfully treated with a resection of the diseased bowel and simple closure of the duodenal component of the fistula.

Case Report
A 22-year-old woman was admitted to our hospital on November 13, 2001 with a chief complaint of abdominal pain and fecal discharge from an enterocutaneous fistula in the right lower abdomen. She had a 9-year history of Crohn’s disease. On July 3, 1997, she underwent an ileoascending colectomy for Crohn’s disease. After surgery, she was administered mesalazine and occasionally prednisone. On April 9, 2001, she developed abdominal pain and a subcutaneous abscess in the right lower quadrant, where a drainage tube had been placed during the first operation. The abscess was intractable despite an incision and drainage. On June 20, 2001, fecal discharge from the incisional wound was found. She was diagnosed to have an enterocutaneous fistula on a fistulogram. She was medically treated with mesalazine and/or azathioprine. Treatment also included diet restriction with nutritional support (total parenteral nutrition and/or elemental...
In spite of additional hyperbaric oxygen therapy, the enterocutaneous fistula did not close. In addition, she developed abdominal cramping on October 8, 2002, which was secondary to an intestinal obstruction. A long intestinal tube was inserted into the jejunum for decompression of the intestinal obstruction, which resulted in an improvement of the abdominal cramping.

After consultations with us, the patient was transferred from another hospital to our hospital to undergo an operation. On admission, physical examination of the abdomen revealed a median laparotomy scar and enterocutaneous fistula with fecal discharge in right lower abdomen. However, no abdominal distension, rebound tenderness, or muscle rigidity was found. The abnormal findings of laboratory tests included elevated serum levels of C-reactive protein (1.47mg/dl; normal range 0.3 mg/dl) and alanine aminotransferase (ALT; 163 IU/l; normal range 8–42 IU/l), and decreased serum levels of albumin (3.3g/dl; normal range 4.0–5.0g/dl), total cholesterol (88mg/dl; normal range 128–256mg/dl), cholinesterase (96 IU/l; normal range 107–233 IU/l), and unsaturated iron binding capacity (UIBC; 112µg/dl; normal range 150–302µg/dl).

Plain film abdominal X-rays did not show any abnormal findings such as niveau or free air. The fistulogram showed recurrent Crohn’s disease at the ileotransverse anastomosis with involvement of the duodenum (colo-ileo-duodenocutaneous fistula) (Fig. 1A). A barium enema showed recurrent Crohn’s disease at the ileotransverse anastomosis with severe stricture and a dilated proximal ileum. The study also revealed stricture and a “cobblestone” appearance of the transverse/descending colon. The arrows indicate the duodenal fistula. F, fistula; S, stomach; D2, second portion of the duodenum; D3, third portion of the duodenum; I, ileum; TC, transverse colon; DC, descending colon; SC, sigmoid colon.

Colonoscopy revealed a circumferential stricture with inflammatory polyps in the descending colon, but no abnormal findings in the rectum or sigmoid colon. The colonicoscopic biopsy showed a noncaseating epithelioid cell granuloma surrounded by a loose lymphoid infiltrate, but no evidence of amyloid deposits. Abdominal computed tomography (CT) demonstrated a dilated small intestine, intestinal wall thickening at the ileotransverse anastomosis and transverse/descending

Fig. 1. A A fistulogram showed recurrent disease at the ileotransverse anastomosis with involvement of the duodenum (colo-ileo-duodenocutaneous fistula). B A barium enema showed recurrent disease at the ileotransverse anastomosis with severe stricture and a dilation of the proximal ileum. It also showed stricture and a “cobblestone” appearance of the transverse/descending colon. The arrows indicate the duodenal fistula. F, fistula; S, stomach; D2, second portion of the duodenum; D3, third portion of the duodenum; I, ileum; TC, transverse colon; DC, descending colon; SC, sigmoid colon.

Fig. 2. Duodenoscopy revealed a small ulceration with fold conversion in the second portion of the duodenum that appeared to be fistulous (arrow).