We report a case of CD complicated with a duodenocolic fistula that was successfully treated by surgery.

A 62-year-old woman with a history of CD for 13 years and hepatitis B virus infection was admitted because of general weakness, body weight loss (4 kg in 5 months), and pitting edema on the legs for 1 month.

The patient had undergone previous surgeries for left leg fracture and a thyroid nodular goiter. A follow-up colonoscopy within 5 years before this admission demonstrated inflammation with edematous and ulcerated mucosa at the ascending colon and ileal-cecal valve. Before the current admission, the Montreal classification for CD of this patient was A3 (age, >40), L2 (colonic involvement), B1 (non-stricturing, non-penetrating pattern). She had chronic diarrhea and was receiving regular therapy with mesalazine (1,000 mg twice a day) and azathioprine (50 mg per day) and intermittent therapy with prednisolone (10 mg twice a day) for 2 years. Furthermore, she regularly received entecavir to control hepatitis B. However, the frequency of diarrhea had increased (from twice per day to 7-8 times per day) in recent weeks. Two weeks before this admission, the patient visited another hospital where an upper gastrointestinal barium series showed irregularity at the duodenum.

Fistula formation is common during the course of Crohn’s disease, whereas duodenocolic fistulas are very rare. The management of internal fistulas in Crohn’s disease is a complex issue. Herein, we report a case of duodenocolic fistula manifested by increasing frequency of diarrhea and loss of body weight. The fistula was diagnosed by upper gastrointestinal tract barium series, magnetic resonance enterography, and panendoscopy and was treated with a right hemicolectomy and Whipple procedure because of the simultaneous occurrence of pancreatic head tumor. Subsequent treatment with adalimumab, azathioprine, and mesalazine was prescribed for the maintenance of disease remission, and the patient was well until 18 months after the surgery. (Intest Res 2013;11:299-302)
the second portion of the duodenum with a fistula tract to the ascending colon (Fig. 1). She was referred to our hospital for further confirmation of diagnosis and management.

On examination, the patient was afebrile but looked ill. Her body height and body weight were 148 cm and 41 kg, respectively (body mass index, 19 kg/m²). Her baseline body weight was approximately 48 kg. Her body temperature was 36.8°C; blood pressure, 133/79 mmHg; pulse rate, 94 beats/min; and respiratory rate, 18 breaths/min. Her breath sounds were clear, and there was no tenderness in the abdomen. Laboratory data showed leukocytosis (white blood cell count, 19,100 K/μL), anemia (hemoglobin, 7.5 g/dL), marked hypoalbuminemia (albumin, 2.0 g/dL), and elevated CRP (2.4 mg/dL). The other laboratory results were as follows: platelet count, 458 K/μL; blood urea nitrogen, 8.7 mg/dL; creatinine, 0.4 mg/dL; aspartate aminotransferase, 16 U/L; and total bilirubin, 0.33 mg/dL. Levels of electrolytes and glucose were within normal ranges. The Crohn’s Disease Activity Index score was 408 at this time point.

After admission, intravenous aminofluid supplement was prescribed for nutrition support. MR enterography showed a fistula tract in the second portion of the duodenum and ascending colon and a 3-cm cystic tumor at the pancreatic head (Fig. 2). Panendoscopy demonstrated a fistula tract from the post-bulbar area to the ascending colon (Fig. 3). Surgical intervention showed a 1.5-cm fistula between the second portion of the duodenum and the ascending colon. The patient underwent a right hemicolectomy and Whipple procedure with feeding jejunostomy. Pathological examination showed a fistula between the duodenum and ascending colon with direct transition from duodenal mucosa to colonic mucosa, ganglioneuromatous polyps at the ascending colon, and a serous microcystic cystadenoma at the pancreatic head. She recovered without complications and was discharged 2 weeks after the operation. Azathioprine and mesalazine were continued as maintenance treatment. Anti–tumor necrosis factor α (TNF-α) therapy with adalimumab was prescribed for 1 year; when the patient was considered stable, it was discontinued. Repeat colonoscopy was suggested, but the patient refused. She had a bowel movement twice a day, and her body weight increased to 50 kg. Levels of hemoglobin, serum albumin, and CRP were 12.7 g/dL, 4.4 g/dL, and 0.07 mg/dL, respectively.
DISCUSSION

Fistulas are defined as internal or external based on the location and connected organs. External fistulas end on the skin (enterocutaneous or perianal fistulas), whereas internal fistulas connect the bowel and various adjacent organs (enteroenteric, ileocolic, gastrectoric, and duodenocolic). It is more difficult to diagnose internal fistulas because of nonspecific or minor symptoms. Once a fistula is diagnosed, it is important to properly define the anatomy of the fistula, including the number and complexity of fistulas and the presence of abscesses. An inaccurate definition of fistula can lead to recurrence of fistula and abscess or the progression of fistula to a more complex form. Complex fistulas are often resistant to medical therapy. Therefore, use of diagnostic imaging modalities is of paramount importance before the management of fistulizing CD.

Several diagnostic modalities are used to diagnose fistula, including radiologic barium studies, CT imaging, and MR enterography. In a surgical report, the sensitivity of barium studies was reported to be between 54% and 75%, and the accuracy rate was moderate compared with surgery results. CT imaging and MR enterography both use large volumes of neutral oral contrast agents to distend the small bowel so that high-resolution images of the wall and lumen of the small bowel can be obtained; these modalities have become accepted tools for evaluating CD activity. Furthermore, because CT imaging and MR enterography can display peri- enteric mesentery and retroperitoneal and abdominal wall musculature, they are more effective than radiologic barium studies for detecting extraenteric complications such as fistulas and abscesses. Previous studies have shown that CT and MR enterography have similar accuracy. Because CD is a chronic and relapsing disorder that primarily affects a young population, repeat imaging examinations are needed to follow the disease status. Considering the radiation exposure, MR enterography is a radiation-free alternative method for evaluating the fistula anatomy.

Current therapeutic options include medical treatment and surgical management. The goal of treatment should be permanent closure of the fistula. Spontaneous healing of fistulas without treatment is rare. Various placebo-controlled clinical trials of medical treatment have shown a fistula self-closure rate of only 6% to 13%. Medical treatment includes administration of corticosteroids, 5-aminosalicylic acids (mesalazine), methotrexate, and tacrolimus although they have not been proven to be effective in fistulous CD. Immunosuppressive agents (azathioprine and 6-mercaptopurine) can be used to treat the intestinal inflammation found in CD. A meta-analysis study showed that fistula closure occurred in 54% of patients who received an immunosuppressant agent and in only 21% of patients who received a placebo. Furthermore, continuing therapy is also critical for the maintenance of fistula healing. Infliximab is a chimeric immunoglobulin G1 monoclonal antibody directed against TNF-α. Two multicenter, randomized, double-blind, placebo-controlled trials proved that infliximab was effective in both induction therapy and maintenance therapy for Crohn’s fistula.
other anti−TNF-α agent adalimumab, a fully human immunoglobulin G1 monoclonal antibody, was superior to placebo for the induction of fistula remission. Medical treatment was more effective for external fistulas than for internal fistulas in patients with CD. For symptomatic internal fistulas (enteroenteric and enterocolic), surgical resection of the affected bowel segments was required. Laparoscopic resection was safe and effective with a low morbidity rate (i.e., 11%). Small fistulas can be occluded with fibrin glue or clipping by endoscopy, whereas in large fistulas, endoscopic therapy with a detached endoloop and hemoclips is an alternative bridging method until final surgical repair.

A review of the English literature showed only sixty-two cases, including our case, reporting CD with coloduodenal fistula. Surgery remains the mainstay of therapy. In cases with minimal duodenal involvement, colectomy with partial duodenectomy and primary duodenal closure of the duodenal defect is adequate. The Whipple procedure was performed in the present case because of simultaneous pancreatic head tumors. High survival rates have also been reported for colectomy combined with the Whipple procedure.

During the last decade, fistula treatment with immunosuppressive agents (azathioprine and 6-mercaptopurine) and anti−TNF-α therapy has been investigated, and anti−TNF-α therapy was recommended for treatment of fistulizing CD. However, very few studies have addressed coloduodenal fistulas, and surgery remains the optimal therapeutic option.

REFERENCES