Gastrojejunocolic fistula as a cause of hypoalbuminemia and bilateral leg edema

Fig. 1 Colonoscopy reveals two openings of a gastrojejunocolic fistula. The two arrowheads indicate the fistula openings (J, jejunum; GJS, gastrojejunostomy site); TC, transverse colon (arrow).

Fig. 2 Upper gastrointestinal series shows leakage of barium into the transverse colon from the stomach. S, stomach; J, jejunum; TC, transverse colon.

A 49-year-old Korean man was admitted to our hospital on 15 November 2013 because of diarrhea, a body weight loss of 10 kg over 2 months, and a 1-month history of edema in both legs. He had undergone gastrectomy for gastric perforation after drinking agricultural chemicals in 2001, and in 2008 had also received a bypass gastrojejunostomy to treat pyloric obstruction resulting from recurrent gastric ulcers. Since then, annual upper endoscopy examinations conducted at

this hospital had revealed recurrent marginal ulcers.

At presentation, the patient had a chronically ill appearance. Examination revealed pitting edema in both legs. The patient was taking no medications and had no known allergies to medications. He had a history of smoking (15 pack-years) and did not use illicit drugs. There was no family history of cancer or other disease. The patient's total protein and albumin levels were 4.3 g/dL and 2.2 g/dL, respec-

tively. Hemoglobin was 10.3 g/dL, but plasma levels of electrolytes, coagulation tests, and kidney and liver function were all normal. Doppler ultrasonography of both legs revealed no evidence of deep vein thrombosis. Upper endoscopic examination revealed reflux esophagitis and the previous gastrostomy site low in the posterior wall of the body, with marginal ulcers and jejunal ulcers. Rapid urease test was positive. Colonoscopic examination revealed edematous mucosal change in the ascending and descending colon, and two openings suggestive of fistula in the transverse colon (● **Fig. 1**). Barium upper gastrointestinal series revealed a fistula between the jejunum and the transverse colon (● **Fig. 2**). Abdominal computed tomography (CT) visualized the fistula more clearly (● **Fig. 3**).

The patient was diagnosed as having a gastrojejunocolic fistula that was causing hypoalbuminemia and edema in both legs. He underwent segmental resection of the transverse colon and reconstruction of the gastrojejunostomy. After the operation, the edema in both legs and hypoalbuminemia gradually improved, the diarrhea stopped, and body weight increased. Two weeks after discharge the patient attended the outpatient clinic of this hospital; his edema was gone and his albumin level was 3.7 g/dL.

Gastrojejunocolic fistula is a rare complication of gastrojejunostomy [1]. The fistula results from perforation of marginal ulcers into the transverse colon [2]. Symptoms include diarrhea, weight loss, belching of fecal odors, vomiting, anorexia, and edema [3]. Anemia, leukocytosis, electrolyte imbalance, and hypoalbuminemia are common laboratory findings [3,4]. However, it is difficult to diagnose gastrojejunocolic fistula on the basis of these symptoms and laboratory findings, because there are many differential diagnoses. The most commonly used diagnostic tools are the barium upper gastrointestinal series and endoscopic examination. Abdominal CT is also used to identify the fistula and to exclude extra-abdominal disease. The treatment of choice of gastrojejunocolic fistula is surgery.

In our patient, the cause of the gastrojejunocolic fistula is thought to have been recurrent marginal ulcers resulting from persistent smoking or recurrent *Helicobacter pylori* infection after gastrojejunostomy. In patients with gastrojejunocolic fistula, the ingested food cannot pass in the physiologic order (stomach-jejunum-ileum-colon), but can pass in a

Fig. 3 Abdominal computed tomographic findings show a fistulous tract between jejunum and transverse colon: **a** 3D image, **b** 2D image. S, stomach; J, jejunum; TC, transverse colon.

pathologic order (stomach–gastrojejunostomy site–transverse colon). This abnormal passage results in malabsorption and, eventually, progressive hypoalbuminemia, weight loss, diarrhea, and edema in both legs. In our patient, the gastrojejunocolic fistula caused all of these symptoms.

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Competing interests: None

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Bibliography

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