SHORT REPORTS

Percutaneous Endoscopic Gastrostomy with Jejunal Extension for an Encapsulating Peritoneal Sclerosis Refractory to Surgical Enterolysis

Surgical enterolysis is the final option for patients with encapsulating peritoneal sclerosis (EPS). However, EPS is sometimes refractory to surgical enterolysis. This is the first report of successful use of percutaneous endoscopic gastrostomy with jejunal extension (PEG-J) in a patient with EPS that was refractory to surgical enterolysis. We propose that sustained drainage of digestive juices by PEG-J, along with central venous nourishment at home, can be a treatment option for patients with EPS that cannot be treated with radical measures.

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KEY WORDS: Encapsulating peritoneal sclerosis; percutaneous endoscopic gastrostomy with jejunal extension; surgical enterolysis.

Encapsulating peritoneal sclerosis (EPS) with bowel obstruction symptoms is a life-threatening complication in peritoneal dialysis (PD) patients (1,2). Surgical treatment is undertaken for an intractable EPS. However, EPS is sometimes refractory to surgical treatment (3).

We are the first to report a patient with EPS in whom sustained drainage of digestive juices through percutaneous endoscopic gastrostomy with jejunal extension (PEG-J) was effective, although the patient was refractory to surgical treatment and drainage of digestive juices through PEG.

CASE REPORT

A 54-year-old man started PD for chronic glomerulonephritis at the age of 36 years. At the age of 50 years, he stopped PD, became hemodialysis (HD)-dependent due to peritonitis, and started home HD (HHD; 2 hours × 6 days/week). After stopping PD, he developed EPS (Figure 1A) and underwent enterolysis (Figure 1B,C) at the age of 51 years. Six months after this, the bowel obstruction symptoms recurred with methicillin-resistant *Staphylococcus aureus* enteritis, an enteric infection originating in the lumen of the gut, and he underwent enterolysis again for complete EPS recurrence with side-to-side anastomosis between the jejunum (40 cm distal to the ligament of Treitz) and the transverse colon (Figure 1D,E). Five months after the second operation, bowel

obstruction symptoms recurred. We gave up enteral nutrition management, constructed a PEG, and started drainage of digestive juices. However, the bowel obstruction symptoms were not relieved, and further radical treatments became very difficult due to the formation of an abdominal abscess (Figure 1F). Therefore, we replaced PEG with PEG-J after percutaneous drainage of the abdominal abscess (Figure 1G) and started sustained drainage of digestive juices from the stomach and the jejunum. Thereafter, the symptoms reduced dramatically, and he depended on total parenteral nutrition through the central venous port and intravenous fat emulsion as well as a volume of physiological saline equivalent to the volume of digestive juices lost during interdialytic interval through the blood circuit in HHD. After PEG-J replacement, bowel movement improved and the intestinal distention disappeared (Figure 1H). A little oral intake has now become possible, and it is no longer necessary to supply physiological saline 4 months after the procedure. Moreover, the serum albumin level recovered from 2.2 mg/dL (at EPS recurrence) to 4.0 mg/dL.

DISCUSSION

Encapsulating peritoneal sclerosis is the most serious complication in PD patients (2). As a result of peritoneal deterioration and the formation of a capsule by accumulated fibrin covers due to bioincompatible PD solutions and peritonitis, EPS develops and leads to bowel obstruction symptoms. Surgical treatment is the final option for patients in whom EPS is resistant to conservative treatment, such as the use of corticosteroids and tamoxifen. We have successfully performed 288 surgical enterolysis procedures in 218 patients (4). In our previous study, the overall survival rate of patients with EPS at 1, 3, 5, and 8 years after diagnosis was 93%, 78%, 71%, and 60%, respectively (3). These outcomes were markedly favorable compared with those of other previous reports (5,6). However, in some cases, EPS can be refractory to surgical enterolysis (3).

Percutaneous endoscopic gastrostomy is a method in which a tube is introduced into the stomach percutaneously, aided by endoscopy, to provide a means of feeding when oral intake is inadequate. When the risk of stomach content aspiration is high, PEG-J, in which a tube is extended into the jejunum through the PEG tube, is applicable. Percutaneous endoscopic gastrostomy and PEG-J have also been used for bowel decompression in malignant and nonmalignant obstructions (7,8). In this case, although EPS was refractory to surgical treatment, the bowel obstruction symptoms

Figure 1 — Computed tomography (CT) image and laparoscopic findings. (A) Intravenous contrast-enhanced CT scan in horizontal view showing adherent bowel loops and bowel dilatation before the first enterolysis. (B), (C) Laparoscopic findings (B) at the first laparotomy, (C) after first complete enterolysis. (D), (E) Laparoscopic findings (D) at the second laparotomy, (E) after second enterolysis of jejunum and bypass between the oral site jejunum and the transverse colon (white arrows). (F) Intravenous contrast-enhanced CT scan in horizontal views showing abdominal abscess (white arrow) after the second enterolysis. (G) CT-guided percutaneous drainage of the abdominal abscess in sagittal view. (H) Intravenous contrast-enhanced CT scan in horizontal view showing disappearance of the bowel dilatation 8 months after percutaneous endoscopic gastrostomy with jejunal extension (PEG-J) replacement.

were reduced by the sustained drainage of digestive juices through PEG-J, along with frequent supplementation of body fluid with saline during HHD. With this treatment, a little

oral intake became possible, and the patient's nutritional status improved.

This is the first report of successful use of PEG-J in a patient with EPS that was refractory to surgical treatment. We propose that sustained drainage of digestive juices by PEG-J, along with central venous nourishment at home, can be a treatment option for patients with EPS that cannot be treated with radical measures.

DISCLOSURES

The authors have no financial conflicts of interest to declare.

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