A 57-year-old man, who had undergone a Billroth I partial gastrectomy for a duodenal ulcer 1 year previously, was hospitalized for continual epigastric pain over the past 1 month. Laboratory testing revealed anemia (hemoglobin 9.4 g/dL; normal range 13.5–16.9) and an elevated C-reactive protein level (2.22 mg/dL; normal <0.02). Liver function tests and the serum gastrin level were within normal limits. Abdominal ultrasound revealed fluid and air bubbles in the liver (Fig. 1a), moving between the liver and stomach through a fistula (Fig. 1b). Computed tomography (CT) verified the ultrasound findings (Fig. 2). Endoscopy revealed a large ulcer in the duodenum near the anastomosis (Fig. 3). An endoscopic biopsy of the ulcer was negative for malignancy. The patient was diagnosed as having a stomal ulcer that had penetrated the liver, and he was subsequently treated with an H2 blocker and intravenous antibiotics. The ulcer healed after 1 month of treatment (Fig. 4). After discharge, the patient continued to take proton pump inhibitors (PPIs), and there has been no recurrence of the ulcer during the 7-year follow-up period.

The most common site of penetration by duodenal ulcers is the pancreas (52.6%), followed by the biliary tract (18.4%), gastrohepatic omentum (10.7%), liver (6.2%), and colon (1.5%) [1]. Most cases of hepatic penetration have been diagnosed intraoperatively and/or by endoscopic biopsy [1,2]. However, in our patient, the ultrasound clearly demonstrated detailed findings sufficient for diagnosis. Most cases of ulcers penetrating the liver have been treated by surgical procedures [1,2]. In addition to the present report, there have been two other recent case reports that have demonstrated the effectiveness of medical treatments such as H2 blockers and PPIs [3,4].

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Fig. 3 Endoscopic findings. a An ulcer (arrow) is seen in the duodenum near the suture. b Close-up view of the large, deep ulcer.

Fig. 4 Repeat endoscopy on day 35 showed the healed ulcer.