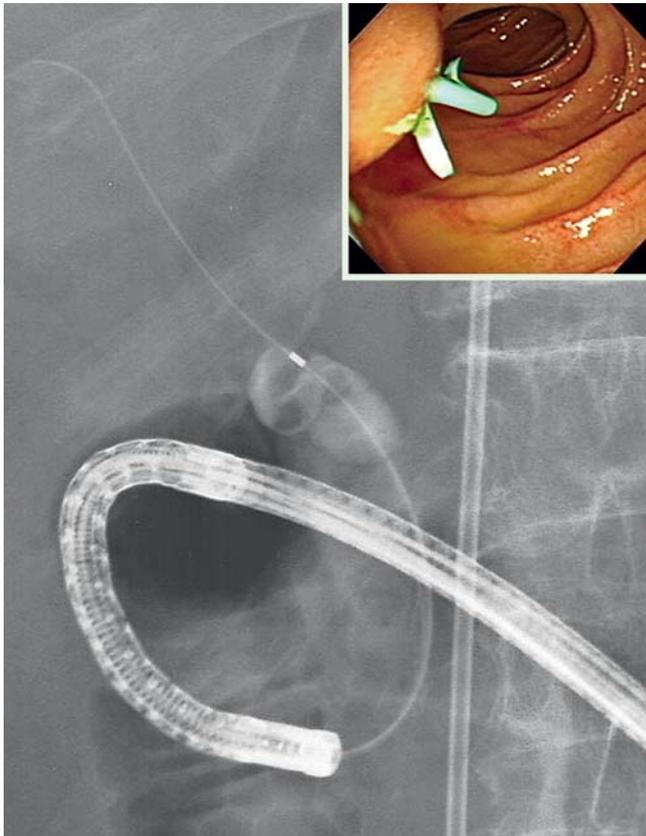


## Stomal dilation of a rigid gastrostomy for endoscopic retrograde cholangiopancreatography (ERCP): novel technique using a standard duodenoscope

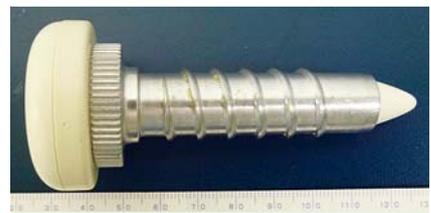


**Fig. 1** Ultraslim endoscopic biliary stenting via a gastrostomy: radiograph showing the ultraslim endoscope in the papilla. Note the scope entering the stomach via the abdominal wall and not via the esophagus. A catheter was advanced into the bile duct, and a cholangiogram showed filling defects because of stones in the bile duct. Finally, a 5-Fr biliary stent was placed (inset).

Therapeutic endoscopic retrograde cholangiopancreatography (ERCP) via a gastrostomy by stomal balloon dilation through a surgical or radiological gastrostomy site has been described in a few cases [1–3]. We report here a novel technique for dilating a rigid percutaneous endoscopic gastrostomy (PEG) stoma for therapeutic ERCP.

A 69-year-old man with bile duct stones was hospitalized for acute cholangitis. A gastrostomy feeding tube had been inserted 9 years ago because of progressive amyotrophic lateral sclerosis. Since peroral standard duodenoscope insertion was impossible, we attempted ERCP via the gastrostomy using a large balloon with a 15-mm diameter; however, this was unsuccessful because of the comparatively rigid stoma. We therefore carried out tentative 5-Fr biliary stenting [4] via the gastrostomy using an ultraslim endoscope (Fig. 1). After 3 days we tried dilat-

ing the gastrostomy stoma again using the following novel technique under transnasal endoscopy guidance. After placing four suture fasteners (Direct Ideal PEG kit, Olympus, Tokyo, Japan) around the existing gastrostomy in the stomach to avoid perforation, we made an incision (approximately 4 mm) in the stoma at the 12 o'clock portion using a cautery knife. The stoma was dilated using a thoracor dilator (Thoracoport trocar, inner stylet diameter 11.5 mm; Auto Suture Company Division, Chesterland, Ohio, USA) (Fig. 2) to allow the passage of a therapeutic duodenoscope (JF-260V, Olympus). The duodenoscope was passed into the second portion of the duodenum through the trocar (Fig. 3). After removal of the biliary stent, we carried out endoscopic sphincterotomy and stone removal using a basket catheter, without any complications (Fig. 4).



**Fig. 2** Gastrostomy stomal dilation using a thoracor dilator (Thoracoport trocar, inner stylet diameter: 11.5 mm).



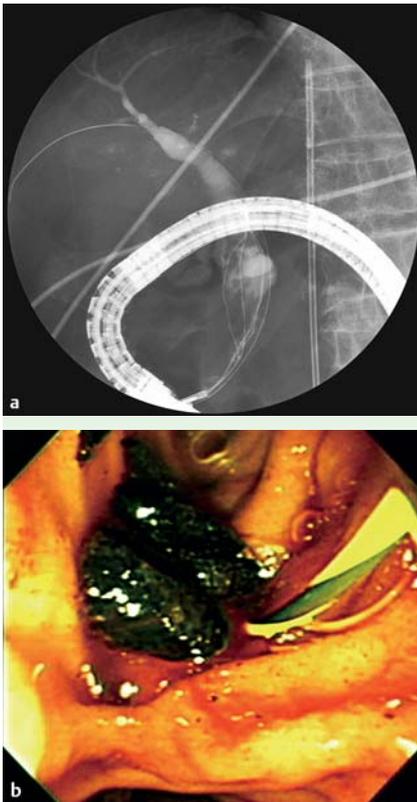
**Fig. 3** **a** Duodenoscope being passed through the trocar. **b** Radiograph showing the duodenoscope reaching the papilla. Note the duodenoscope entering the stomach through the outer sheath of the trocar via the abdominal wall.

To our knowledge, this is the first report of a stomal dilation technique for ERCP via PEG using a standard duodenoscope. We believe this novel technique may allow ERCP to be carried out via the gastrostomy even in patients with a rigid stoma.

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**Fig. 4** **a** After endoscopic sphincterotomy, the stones were removed using a basket catheter. **b** Endoscopic image showing small black stones.

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