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## Endoscopic management of a penetrated gastric band

Adjustable gastric banding is an established procedure for the treatment of obesity. Early complications associated with gastric banding included perioperative bleeding, infection, and pneumonia. Late complications relate to the band or to the port system. The former include displacement, with resultant valve or pouch enlargement; gastric perforation; and band penetration.<sup>1</sup> Port-associated complications include infection, disconnection, or migration. These late complications usually are corrected by surgery.

Penetration of a gastric band into the stomach lumen is a rare late complication.<sup>2</sup> In almost all cases, a penetrated band must be removed surgically. To our knowledge, there are only two published case reports of endoscopic management of a penetrated gastric band. In the first, a penetrated Dacron band was vaporized with a Nd:YAG laser; removal was incomplete, and portions of the Dacron band were left behind.<sup>3</sup> In the second reported case, the gastric band was actually a vascular prosthesis, which was



**Figure 1.** Retroverted endoscopic view showing partially penetrated band attached to gastric wall by narrow band of tissue (arrow).

cut with an endoscopic scissors and an electrosurgical device.<sup>4</sup>

The main symptoms that suggest dislocation or penetration of a gastric band are weight gain and epigastric pain. The diagnosis is established by endoscopy or fluoroscopy.<sup>5</sup> Whether a penetrated gastric band can be managed endoscopically depends on the degree of penetration. The risk of gastric perforation after endoscopic management is higher in patients with a small or a partial penetration of the band. Thus, the optimal candidate for endoscopic therapy should have an almost complete penetration of the band.

**Case report.** A 47-year-old woman with morbid obesity (body mass index 52 kg/m<sup>2</sup>) underwent a gastric bypass. She had no prior abdominal surgery, and there was no significant medical condition other than obesity. Two years later, gastric banding was performed because of insufficient weight loss. Pouch enlargement was diagnosed 2 years later. Endoscopy 1 year later (5 years after the initial operation and 3 years after the banding procedure), endoscopy demonstrated penetration of the gastric band into the gastric lumen. The patient was asymptomatic at that time and refused surgery. Treatment was initiated with a proton pump inhibitor. Endoscopy 1 year later revealed almost total penetration of the band; only a small tissue bridge held the device to the gastric wall (Fig. 1). Although the patient was asymptomatic, the gastric band was not functional, and it was decided that it should be removed. With almost complete penetration of the band, an endoscopic approach was felt to be safe and feasible.

The tissue bridge was injected with a dilute solution of epinephrine (1:10,000) and then 3 hemostatic clips were placed on both sides of the bridge. An attempt to cut the tissue with a standard papillotome was unsuccessful because the device could not be positioned optimally. The tissue bridge then was destroyed step by step by using argon plasma coagulation with mixed current (80/80). After severing the tissue bridge, the band remained attached to the port system. Several attempts to separate this

Oral presentation (C.G.) at United European Gastroenterology Week, October 21, 2002, Geneva, Switzerland.

Reprint requests: PD Dr. Ch. Meyenberger, Departement für Innere Medizin, Fachbereich Gastroenterologie, Kantonsspital St. Gallen, Rorschacherstrasse 95, 9007 St. Gallen, Switzerland.

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PII: S0016-5107(04)01736-5



Figure 2. Recovered gastric band.

connection by using a papillotome, an argon-plasma-coagulator, and a forceps were unsuccessful, and the patient was referred for surgery.

The port system was removed with the patient under local anesthesia. The patient was to undergo fluoroscopy and endoscopic removal of the device. However, the band had already entered the small bowel. It passed through the intestinal tract spontaneously without causing obstruction and was recovered from stool 4 days later (Fig. 2). The post-interventional course was uneventful; there were no clinical or endoscopic signs of gastric perforation. One year later, the patient underwent another bariatric procedure. At laparotomy, the serosal surface of the stomach was intact.

**Discussion.** Because the number of bariatric operations, gastric banding, in particular, will increase, endoscopists are likely to encounter more late complications of this form of intervention for morbid obesity. Most of the patients in whom complications develop will require surgery, but, under certain circumstances, endoscopic intervention can be attempted.

Infection and pouch enlargement are not amenable to endoscopic therapy. Partial perforation and slippage of the gastric band have to be managed surgically. Only a small number of patients with a migrated band are candidates for endoscopic management. The optimal situation in which an endoscopic approach might be successful is almost complete penetration of the band. In this group of patients, the risk of an iatrogenic perforation is relatively small. EUS might be helpful in estimating the degree of penetration.

As illustrated by the present case, attempts to cut the band from the port system by using different endoscopic techniques and devices may be frustrating, time consuming, and most likely unsuccessful. In our opinion, the Port-a-Cath System should be removed surgically with the patient under local anesthesia. If possible, the band should be removed endoscopically via the mouth to preclude the possibility of obstruction during the passage through the small bowel or the ileocecal valve.<sup>6</sup> In our patient, the band had already entered the small bowel at the time of follow-up endoscopy, but passage through the GI tract was uneventful. To prevent the band from entering the small bowel,

endoscopic removal should be performed as soon as possible after release from the port system. As demonstrated by the present case, endoscopic management of a penetrated gastric band is feasible under certain circumstances, specifically nearly complete penetration of the band into the stomach.

Christa Meyenberger, MD  
 Christoph Gubler, MD  
 Peter M. Hengstler, MD, FACP  
 Department of Internal Medicine  
 Division of Gastroenterology  
 Kantonsspital St. Gallen  
 St. Gallen, Switzerland

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## Quinidine-induced gastric ulcer

The majority of gastric ulcers are caused by *Helicobacter pylori* infection or use of non-steroidal anti-inflammatory drugs (NSAID). There are few reports of gastric injury caused by medications other than NSAIDs. Nevertheless, pill-induced gastric ulcer should be considered when evaluating patients with gastric ulcer, because failure to stop the offending agent may lead to treatment failure. A case of gastric ulceration caused by quinidine gluconate is presented. To our knowledge, this is the first case reported of gastric injury caused by this medication.

**Case report.** A 72-year-old man presented with a 2-week history of severe burning epigastric pain that typically occurred 10 minutes after eating and lasted 1 hour before resolving spontaneously. Minimal relief was afforded by over-the-counter cimetidine. The patient

Reprint requests: John Rinard, DO, Madigan Army Medical Center, Department of Medicine, Tacoma, WA 98431.

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PII: S0016-5107(04)01716-X