

Gastrosopic removal of a migrated adjustable gastric band: A case report

Mideye girmiş ayarlanabilir bir bandın gastroskopi ile çıkartılması: Olgu sunumu

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Laparoscopic gastric banding is a popular method for treating morbid obesity. Band migration is a well-known late complication and the treatment is usually reoperation. In this case report, we show that a band penetrating the gastric wall can be treated by gastrosopic operation with the Gastric Band Cutter device without complication. It seems that this technique is simpler than reoperation and is beneficial even when the intraluminal migration is partial.

Key words: Gastric banding, band migration, gastrosopic band removal

Aşırı şişmanlığın tedavisinde laparoskopik olarak mideye bant takılması yaygın bir metottur. Bandın mide içine girmesi iyi bilinen bir geç komplikasyondur ve tedavisi de genellikle yeniden ameliyattır. Bu olguda, duvarı delerek mideye giren bir gastrik bandın, Gastrik Bant Kesici kullanılarak yapılan bir gastroskopik işlemle komplikasyonsuz olarak tedavi edilebileceğini gösterdik. Öyle görünmektedir ki bu teknik, bant mideye kısmen girmiş olsa bile yeniden ameliyata göre çok daha kolay ve faydalı bir yöntemdir.

Anahtar Kelimeler: Gastrik bant, bant migrasyonu, gastroskopi ile bant çıkartma

INTRODUCTION

The laparoscopic implantation of an adjustable gastric band to treat morbid obesity was first introduced by Forsell in 1993 (1). Gastric banding is an effective surgical treatment for morbid obesity and is the most commonly performed bariatric operation in Europe and Australia (2). Studies have reported good results, with an average loss of excess body weight of 50% at two years, and a low complication rate (3). Band migration occurs in 0.6% (4) to 11% (5) within the first two postoperative years. The treatment of the band migration classically has been the surgical removal of the band through a gastrotomy (6), possibly again by laparoscopic means (7). Band removal is mandatory to prevent intraabdominal infection or acute intestinal obstruction. Almost all of these procedures need laparotomy with a considerably higher risk of perioperative complications. A few series have shown that extraction of the eroded band by means of gastrosopy is possible, especially if the band has almost completely migrated within the stomach (8). This is a less invasive treatment than

the abdominal surgical approach. Recently, a new endoscopic technique has been developed with a device designed to cut the band: the Gastric Band Cutter (AMI, Agency for Medical Innovation). This technique seems to be the procedure of choice for band erosion because it allows earlier patient discharge and avoids a surgical operation (9).

We report here an adjustable gastric band that had partially migrated into the stomach, which was successfully removed endoscopically without complication using this technique.

CASE REPORT

A 31-year-old female presented with a two-month history of epigastric pain, fever and epigastric fistula. Three years previously, she had undergone laparoscopic adjustable gastric band implantation for morbid obesity at another hospital. The most recent inflation of the band had been performed 12 months ago. The maximal band filling status had been 6.5 ml. She achieved good weight loss post-

peratively (preoperative body mass index [BMI] 53.35 kg/m², 2 years postoperative BMI 27.43 kg/m²). Six months before, she had been readmitted to the same hospital due to an abscess around the port site, so the port had been surgically extracted under local anesthesia, leaving the tube end retracting into the peritoneal cavity. Over the next three months there were no additional complications; however, she did not lose any further weight.

On admission, BMI was 22.48 kg/m², with no weight loss during the prior months. Laboratory findings showed an anemia of 5.22 g/dl, a slight leukocytosis of 10,150, elevated sedimentation rate of 72 mm/h, and reduced albumin (3.3 g/dl). All other parameters were within the normal range. The culture of the fistula was negative for bacteria. Abdominal ultrasound and computed tomography (CT) determined a subdiaphragmatic collection 10 cm in diameter. CT scan also showed air surrounding the gastric band. Gastroscopy revealed intraluminal migration of the gastric band localized to the lesser curvature.

By means of gastroscopy, the migrated portion of the band was intragastrically identified (Figure 1). The metallic thread of the Gastric Band Cutter device (Figure 2) was introduced into the working port of the endoscope, passed around the band visualized in the stomach (Figure 3), and retracted with a grip to the mouth. Then, the two ends of the metallic thread were introduced into an external narrow metal tube and passed into the tourniquet of the handgrip. The metal tube (containing the metallic threads looped around the intragastric band) was passed through the esophagus to the stomach (Figure 4). By twisting the handle of the Gastric Band Cutter, the band was readily cut under direct vision by strangulation (Figure 5), and was then extracted with gentle traction (Figure 6) with the rest of the catheter through the mouth (Figure 7). Finally, the gastroscope was again introduced to visually check the full integrity of the gastric wall (Figure 8).

No peri- or postoperative complication was observed. The patient was mobilized immediately after the intervention and recovered quickly. On postoperative day 2, a liquid contrast swallow revealed an undisturbed esophagogastric transit without signs of free gastric perforation. The connection between the gastric mucosa and the scarred tunnel that surrounded the tube did not correspond to a gastric perforation and healed within a few days

without clinical symptoms. Solid food was gradually started after the radiography. Epigastric fistula resolved on the third day and no fever was observed. Endoscopy performed on the fifth day disclosed healed mucosa without stricture formation. On the seventh day, abdominal ultrasound showed a 50% reduction of the subdiaphragmatic collection. The patient was discharged on postoperative day 10. She began to gain weight postoperatively, and BMI was 26.67 kg/m² after eight months.



Figure 1. Endoscopic view of intragastric migration of the band.



Figure 2. (1) Handgrip with a tourniquet and partial threads. (2). Metallic thread passed around and (3) through the metallic tube.

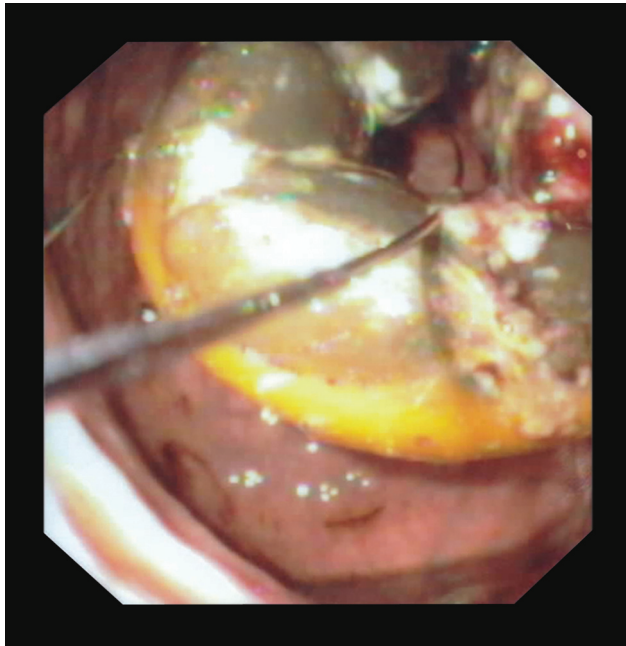


Figure 3. Endoscopic view of metallic thread, passed around the band.

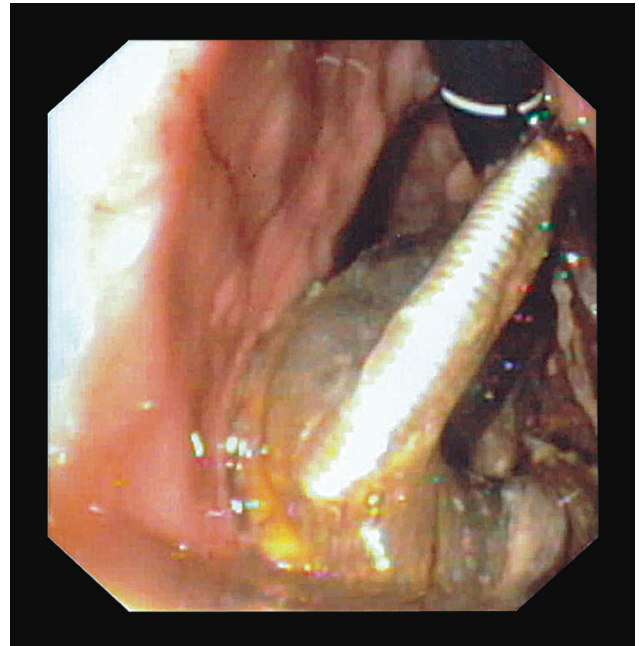


Figure 4. Endoscopic view of the intragastric part of the metallic tube.



Figure 5. Endoscopic view of the intragastric cut band before extraction.

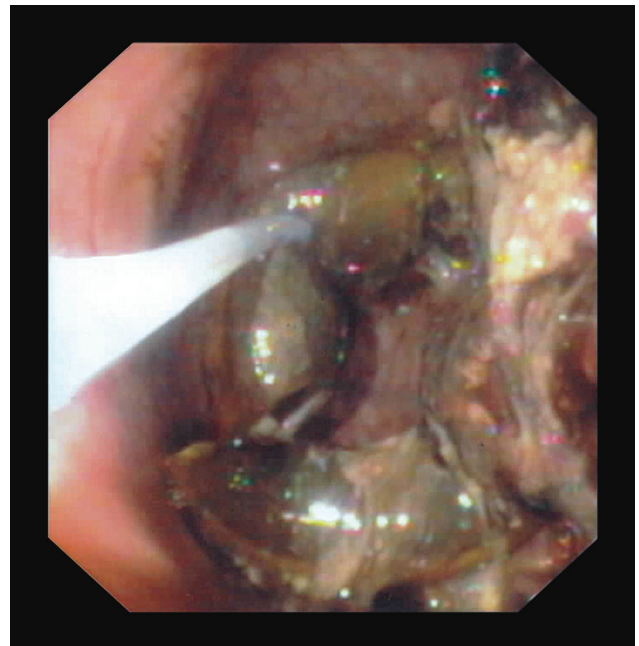


Figure 6. Gastric band extraction with snare.

DISCUSSION

Band migration is a slow process and its causes are not yet known, but several hypotheses have been suggested. The suggested primary etiologic factor is pressure applied to the gastric wall. External pressure is applied either through chronic overfilling of the band (8) or the inclusion of too

much gastric wall during the operation (10). Internal pressure is applied as a result of ingestion of excessively large food boluses early after operation (11). Another suggested factor is a rejection reaction against the silicon gastric band with subsequent circumferential fibrous contraction (12). Chronic inflammation at the tissue area covered by the



Figure 7. Gastric band removed through the mouth.

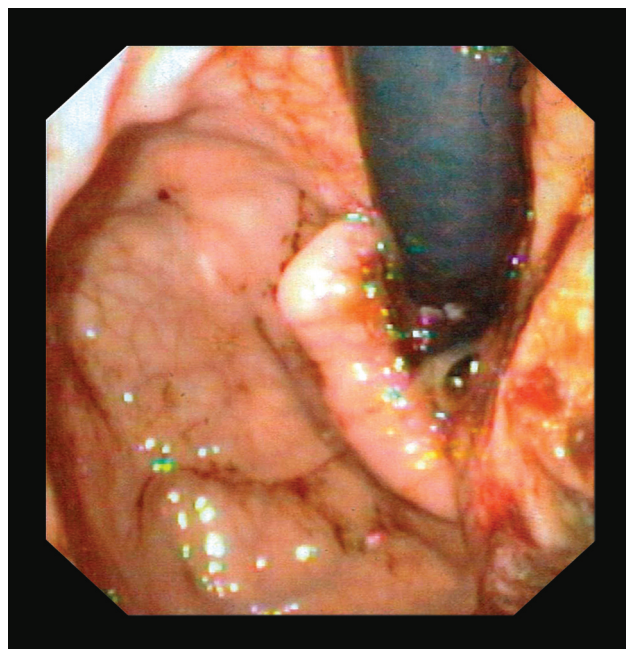


Figure 8. Endoscopic view of gastric wall after removal of the band.

band could be a further reason for erosion development (13). Band migration generally occurs by 30-86 months postoperatively (14). Interestingly, the erosion rate has increased through long-term follow-up (15). In the literature, port infection has been reported to be the first symptom of erosion (16), as seen in our patient.

The cause of band erosion in our patient is possibly an infection of the implanted device. Overfilling the chamber can not be a reason because of the low maximal band filling status of 6.5 ml. The average band filling status was 8.2 ml in a study including 454 patients, and in that study, chronic overfilling of the band was defined as an increased filling volume of 10-12 ml (8).

Generally, laparotomy has been necessary in cases of band migration to remove the displaced band (4, 6). The disadvantage of this reoperation is primarily caused by the laparotomy itself, which potentially carries a higher risk for surgical complications. For band removal, two operative techniques were discussed: 1) Intragastric replacement of the band with the need to perform a gastrotomy; or 2) opening the scar capsule around the tube to remove the band transabdominally. In both open techniques, the two gastric penetration sites are opened and a connection with the abdominal cavity is created, which is difficult to manage accurately (especially the perforation on the posterior gastric wall).

An infected system (port/band) would further strengthen the argument to prevent gastric fistula.

The technique applied in our case provided a method for gastroscopic removal of intragastric migrated bands without laparotomy. According to recent studies (9), endoscopic removal is being used as the most frequent therapy, with the least possibility of complications and a lower cost in relation to other surgical procedures. When a gastroscopy shows a band penetration of less than 50% of the circumference, greater migration may be awaited to facilitate endoscopic division using the Gastric Band Cutter (9). If it is not possible to use the Gastric Band Cutter because of inadequate intraluminal migration, the gastric mucosa that covers the band can be opened by endoscopy, using a needle-knife (17).

Before the endoscopic removal of the adjustable gastric band, through a cutaneous exploration at the port-site, the port and maximum length of the catheter tubing must be surgically extracted, leaving the tube end retracting into the peritoneal cavity. In our patient, the port had been extracted six months ago because of port infection.

This operation was minimally invasive and well tolerated by our patient. No morbidity or mortality occurred in our case. No gastric perforation was noted or suspected endoscopically or clinically.

cally. The Gastric Band Cutter offers a low-risk procedure with a better chance for further laparoscopic approaches.

In conclusion, the risk of an intragastric band migration remains low in the literature but could increase due to the longer follow-up of patients. The retrieval of the band is the gold standard and must be planned promptly or according to symp-

toms. Endoscopic or laparoscopic retrieval of the band can be proposed according to the stage of migration into the gastric lumen. Endoscopic removal of a gastric band that has undergone an intraluminal migration using the Gastric Band Cutter is a simple and feasible technique with a low morbidity, and it can also be used for incomplete migrations.

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