

## Chapter 25

# Case on Problems with Laparoscopic Adjustable Gastric Band: Erosion and Migration

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**Keywords** Gastric band • Laparoscopy • Morbid obesity • Band erosion • Adjustable gastric band • Band migration

### First Patient

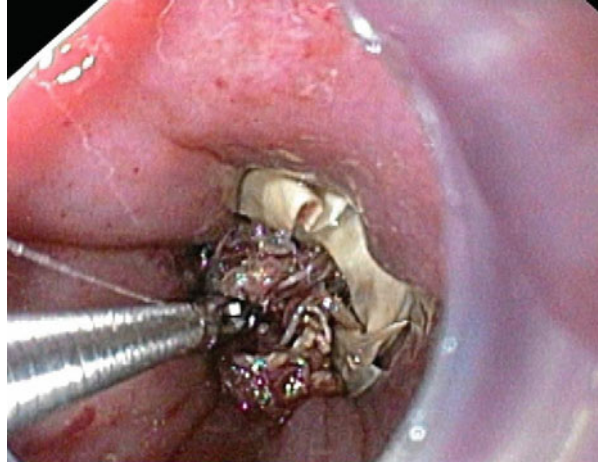
#### *Operation, Identification and Treatment of the Complication*

Three weeks after receiving a laparoscopic adjustable gastric band, a 42-year-old woman returned to the hospital with an infection of the wound where the port connected to the band's tubing was placed. The patient was initially treated with antibiotics; however, after a few days the wound spontaneously opened and a collection of pus leaked out. At the bottom of the wound the port and tubing were visible. The patient was reoperated and the port was removed. The tubing was cut, filled with antibiotics, and pushed back into the abdominal cavity. Three months later the patient had not lost any weight. She could eat normally, but complained of abdominal discomfort. Blood examination demonstrated elevated CRP and leukocytosis. Gastroscopy revealed a band that had eroded into the stomach and was visible for one-third of the circumference. It was suggested to the patient to remove the band laparoscopically but she insisted on being referred to another hospital where the band was removed gastroscopically (Fig. 25.1 and Illustration 25.1a). Three months later a biliopancreatic diversion was done from which she recovered uneventfully. After 1 year she had an excess weight loss of 90 %.

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**Fig. 25.1** Erosion of the band in distal esophagus. Attempt to removal by endoscopy



## Second Patient

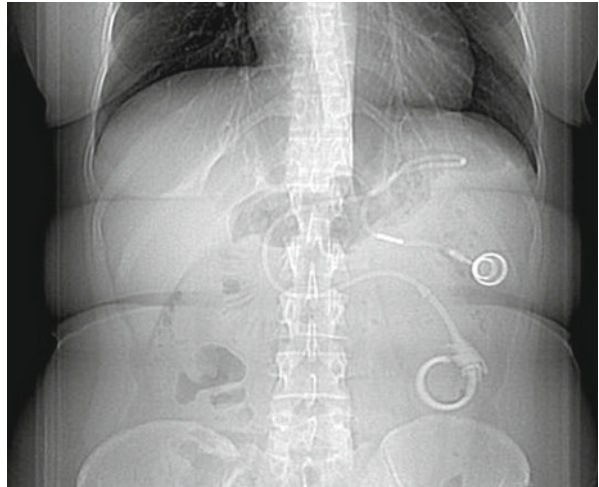
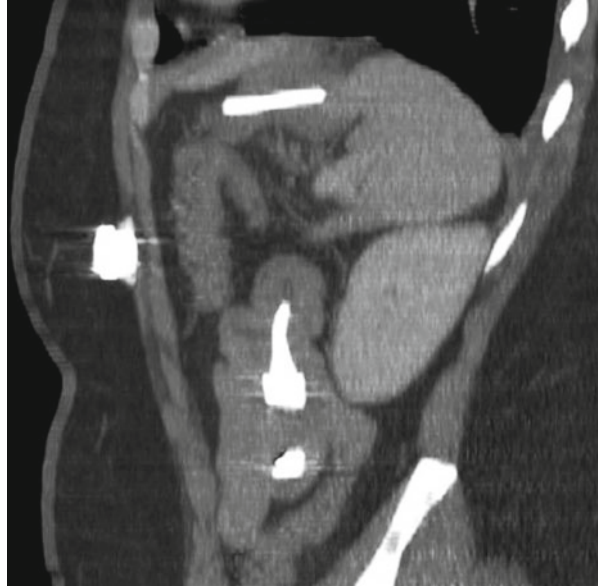
### *Diagnosis and Indication for Surgery*

A 42-year-old woman had been operated 3 years previously because of obesity, having a BMI of 35. A laparoscopic gastric band was then performed without technical problems. In the course of the following year, the patient had importantly reduced her weight until she gained a BMI of 26. She was happy with the outcome of the operation. Three years later and now 3 months before the referral to us, she began to have extra difficulties with passing food. She felt that something had changed as she had lost an additional four kg. At gastroscopy it was observed that the connection tube has migrated in distal direction. The CT scan showed that the band was fixed in the first loop of jejunum and a kind of fixed triangle was formed between the band, connection tube, and the port (Figs. 25.2 and 25.3).

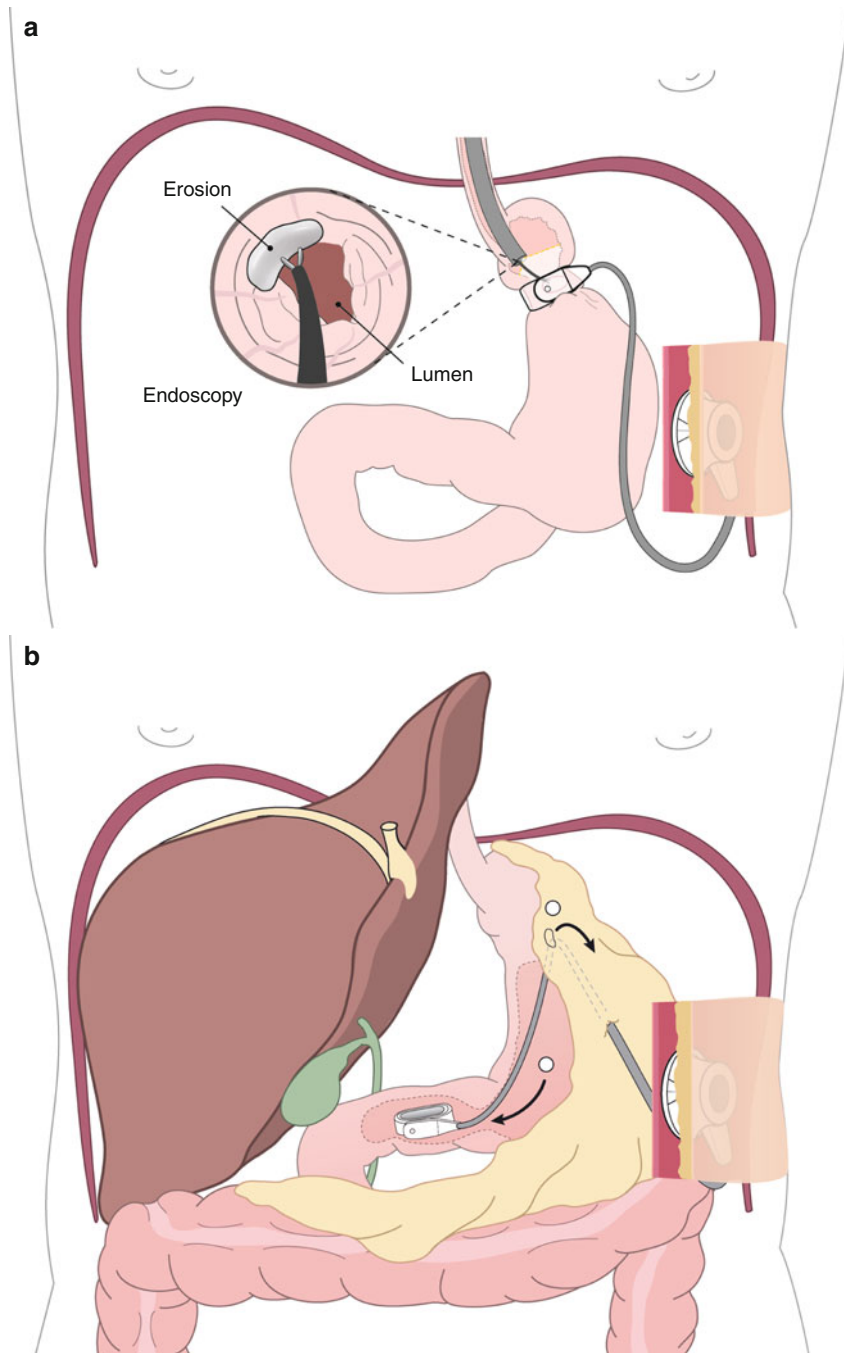
### *Operation*

At operation, after cutting the connection tube first the port was taken out. Then by laparoscopy we could see the tube and the inflammatory reaction around the proximal part of the stomach. The duodenum and proximal part of jejunum were localized, but it was impossible to see in which part of these the band was fixed. Through a small subcostal incision and a pyloroplasty the band that was fixed between duodenum and jejunum could be taken out. After this, pyloroplasty was closed in horizontal direction and the incision closed after leaving a drain (Illustration 25.1b). Postoperative course went uneventful.

**Fig. 25.2** CT scan, migration after erosion of the gastric band up to the first part of jejunum



**Fig. 25.3** Plain X-ray showing the migration



**Illustration 25.1** (a) Adjustable gastric band showing erosion on the proximal stomach. Gastric band was removed by gastroscopy using a gastric band cutter. (b) Adjustable gastric band showing first erosion through gastric wall and then migrating until the duodeno-jejunal junction. Removed by pyloroplasty

## Discussion

**Band erosion**—Band erosion is an uncommon complication of LAGB. The band gradually erodes through the stomach wall into the gastric lumen. The reported incidence is around 1 %, with an estimated prevalence varying from 0 to 11 % [1, 2]. Band erosion may be the result of gastric-wall injury during band placement or tight anterior fixation.

A high index of suspicion is required for diagnosis of band erosion as most patients are asymptomatic. When symptomatic, complaints related to erosion include loss of restriction, nonspecific epigastric pain, gastrointestinal bleeding, intra-abdominal abscesses, or port-site infection. The diagnosis is often made at the time of gastroscopy.

The recommended treatment is complete removal of the eroded gastric band, gastroscopically and laparoscopically or via laparotomy. Removing a band that has eroded into the stomach can be difficult owing to the extensive inflammatory response around the proximal stomach and left lobe of the liver. This is the rationale for a gastroscopic approach: With the scope a thin metal wire is positioned around the band. The two ends of the wire are brought through a thin flexible shaft which is gently brought down through the esophagus to the band. The wires are pulled with force against the flexible shaft thus cutting through the silicone band. From the outside, the port must be surgically removed and the tubing cut. After this, the band can be removed orally, most of the times. This procedure can only be performed when the band is well visible within the stomach [1–3].

Because of the difficult direct laparoscopic approach, transgastric techniques have been proposed to facilitate band removal. Using distal transgastric ports, the band can be removed with a combined laparoscopic/endoscopic approach. It is surgically easier to operate and close a gastrotomy in normal gastric tissue than near an eroded band. In the case of acute gastric perforation, laparotomy with wide drainage is necessary.

**Port-site infection**—Port-site infections can be classified as early and late. Early infections will manifest with the cardinal signs of erythema, swelling, and pain. These infections typically occur in the immediate postoperative period. These infections with cellulitis alone may be treated with oral antibiotics. If the response is inadequate, then intravenous antibiotic use is warranted. When the infection does not respond to intravenous antibiotics and is limited to the port, the port can be removed and the tubing knotted and left inside the abdomen. A new port may be placed when all signs of infection are gone. The tubing can be connected with laparoscopic guidance.

Late port site infections are often caused by band erosion with ascending infection. This usually manifests several months after surgery and can be associated with loss of restriction. Gastroscopy must be done to confirm the diagnosis of band erosion. In each case of erosion, removal of the band is necessary.

**Tube breakage**—Breakage or damage of the tube typically refers to leakage of the tubing leading into the port or a place where there is a metal connector. To prevent leakage from the port, the use of a standard coring needle is strongly

discouraged, and only Huber (noncoring) needles should be used to access the port. If port access is difficult or if the tubing connected to the port is at risk of perforation, then band adjustment under fluoroscopy is advised. Tube breakage usually manifests as a slow leak with the loss of the injected fluid volume on aspiration and the absence of restriction. It can be difficult to identify the leak site, but local exploration of the port site can confirm the diagnosis.

Leakage from the intra-abdominal tubing is more difficult to diagnose. Injection of dilute nonionic iodinated contrast into the port under fluoroscopy can help to identify the site of the leak. Another approach is to inject diluted methylene blue into the port under direct laparoscopic visualization of the tubing and the band. Port, tubing, or band replacement is usually necessary depending on the site of the leakage and type of band used [1].

## References

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