Laparoscopic adjustable gastric banding (LAGB) using the Lap-Band (BioEnterics Lap-Band, Inamed Health, Santa Barbara, CA) has been performed in our institution since 1993. Adjustable gastric banding for the surgical treatment of morbid obesity originated with Kuzmak in 1986, and in 1993 was developed for laparoscopic placement. In the past 10 years the procedure has gained widespread acceptance and is now the most frequently performed bariatric procedure in many countries of the world.

Laparoscopic adjustable gastric banding brings many advantages to patient and surgeon. The procedure is completely reversible as it does not require the opening of the gastrointestinal tract or rerouting of the anatomy, and it does not rely on cutting or stapling of the stomach, so the patient does not suffer from the resultant, sometimes serious, complications. Also, LAGB has the distinction of being the only bariatric operation designed to be performed laparoscopically (operation is laparoscopically accomplished in >95% of all cases). The use of the Lap-Band, therefore, allows patients to leave the hospital much earlier than more drastic open bariatric procedures, and they can return to work and normal activity much sooner.

Even though some complications with gastric banding are unavoidable, they can be treated by laparoscopy in most cases and are rarely life threatening if managed appropriately. It is worth noting that as techniques for placement have evolved, complication rates with the Lap-Band have declined. Surgeons and patients should adopt strategies that will help avoid complications and be sensitive to any indications of their emergence.

This chapter reports the long-term outcome of a large group of morbidly obese patients treated with the Lap-Band. We focus on the complications that required revisional surgery and present our methods of diagnosis, prevention, and treatment.

20.5
Laparoscopic Adjustable Gastric Banding: Revisional Surgery
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Revisional Surgery
The Lap-Band operation is not without its complications, but they occur on a smaller scale and have a much lower risk profile compared with other methods currently used in obesity surgery. It is important to note that complications can usually be corrected and that the Lap-Band appears to be the lowest risk operation currently available for the treatment of morbid obesity. Another important aspect of this kind of surgery, even though it requires advanced laparoscopic experience, is that most of the complications can be corrected by laparoscopy. In case of complications our current approach is as follows:

Gastric Perforation
If the perforation is detected at surgery and if it occurs at a location distant from the band, some surgeons have repaired the stomach laparoscopically and placed the band successfully (1). But if the exposure is not satisfactory, it is advisable to postpone the placement of the band, suture the stomach wall, drain the area, and have a nasogastric tube in place. If the perforation is detected postoperatively, and gross contamination has already occurred causing peritonitis and subsequent emergency surgery, the band has to be removed and traditional surgical approaches have to be implemented.

Stomach Slippage
Different options are available for stomach slippage.

Deflation
The band system is deflated via the access port and an upper gastrointestinal (GI) radiographic series is performed. This is the only way to positively establish the
cause of the symptoms and to establish whether any passage for the fluids exists through the band. In most of the cases the pouch returns to normal size and motility. After 1 month the band is gradually inflated with no more than 1.0cc at a time. After deflation, if an upper GI series still shows slippage or the contrast passes with difficulty through the band, band removal or repositioning must be performed. True stomach slippage (as opposed to gastric pouch dilatation) does not respond to the previously mentioned conservative measures and indicates the need for urgent laparoscopic or open exploration of the abdomen, especially in cases of epigastric pain.

Removal

The Lap-Band system can be removed by laparoscopy. To reach the site of the band, which is usually covered by adhesions, it is advisable to follow the connecting tube and pull it. The buckle of the band is easily identified and cut along the side of the buckle, allowing the withdrawal and removal of the device (Fig. 20.5-1). In this case another surgical procedure could be offered to the patient.

Pull-Through Technique

In the case of anterior gastric wall slippage, first the band must be deflated and exposed. At this point it is feasible to reduce the slippage, by carefully pulling the gastric wall through the band (Fig. 20.5-2). Retention sutures are applied. If the stomach above the band has become edematous or hypertrophied to the extent that reduction is not possible, the band needs to be divided and a new band placed above the enlarged gastric pouch. Of course the position of the band on the lesser curvature and the location of the retrogastric tunnel have to be checked. If they are not correct, repositioning has to be done.

Repositioning

Posterior stomach slippage is treated by removal of the band and placement of a new band higher up. The removal of the band requires just enough dissection to give access to the part of the band directly to the left of the buckle. The reference points for dissection have to be identified again to be sure that the retrogastric tunnel will be above the peritoneal reflection of the bursa omentalis. If the usual perigastric technique for dissection and creation of the retrogastric tunnel is not possible due to local adhesions, the pars flaccida technique can be easily used. The pars flaccida pathway has not been previously dissected and is therefore easy to access. In this case dissection begins directly lateral to the equator of the calibration balloon in the avascular space of the pars flaccida. After seeing the caudate lobe of the liver, blunt dissection is continued under direct visualization until the right crus is seen, followed immediately by the left crus over to the angle of His.

Stoma Obstruction

In many cases deflation of the band, a few days of liquid diet, and medical treatment with pump inhibitors can prove salutary. For patients with near-complete or partial obstruction, initial treatment can be conservative, con-