The management of bariatric surgery complications

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Abstract

Bariatric surgery is now commonplace in the UK and has been demonstrated to be safe and effective. Complications that present as an emergency are unusual but will be seen more frequently as the number of patients who have undergone weight loss surgery rises. The optimal management encompasses a low threshold of suspicion and early diagnosis of complications coupled with expertise to deal with them. It is therefore important for a general surgeon to have an understanding of the common bariatric procedures (gastric banding, gastric bypass, sleeve gastrectomy and duodenal switch), their known complications and when to refer to a specialist centre. All general surgeons should know how to deflate a gastric band and know to suspect an internal hernia in a patient with abdominal symptoms following bariatric surgery. It is also important to appreciate the significance of finding or suspecting there to be a gallstone in the common bile duct in patients who have had either of the bypass procedures. All bariatric centres in the UK should be able to provide specialist advice at any time. This advice should be sought at an early stage in the patient's care.

Keywords Bariatric surgery; complications; gallstones; gastric banding; internal hernia; obesity; upper GI haemorrhage; weight loss

Introduction

Bariatric (or metabolic) surgery is a relative newcomer to the surgical scene. As such, many general surgeons are unfamiliar with complications that might arise in these patients. Fortunately, emergency complications are rare but this may compound the situation, as it can be difficult for a non-specialist to gain the experience to recognize and manage these conditions. Consequently, such patients are frequently misdiagnosed leading to unnecessary delays in potentially life-saving treatment.

In response to the current obesity epidemic and the wealth of evidence demonstrating the long-term benefits of weight loss surgery, the number of bariatric procedures performed in the UK has risen substantially. Only a small percentage of these patients are likely to present to a general surgery emergency take with complications related to their surgery. However, as the number of procedures performed increases, both long- and short-term complications are likely to occur more frequently. Given the geographical spread of specialist bariatric centres and the fact that many patients choose to travel abroad for their surgery, patients will not necessarily present to their original centre especially as more time passes from the index procedure.

Just as it is important for a surgical trainee to learn about the treatment of acute cholecystitis or the management of an anastomotic leak after colorectal surgery, it is now vital that surgeons should have an understanding of the consequences of the various bariatric operations. This article will focus on the recognition and management of complications that might be expected to present as an emergency during a surgical on-call.

The operations

A full description of the indications for bariatric surgery, the operations available and how they work is beyond the scope of this paper. These details have been comprehensively covered in this journal by Kerrigan et al.[1] However, for reference it is worth describing again the four most common procedures performed in the UK.

Laparoscopic adjustable gastric banding (LAGB) (Figure 1)

This restrictive procedure involves the placement of an adjustable ring around the top of the stomach, leaving a small pouch of stomach above it. In order to maintain a good position, most surgeons will then place some sutures between the fundus and the pouch, creating a 'tunnel' around the band. The band is attached via tubing to an adjustment port positioned on the fascia of the anterior abdominal wall or xiphisternal area. The aperture of the band can be adjusted by injecting saline into the port to achieve sufficient restriction to the passage of food, giving the patient the sensation of fullness after a small amount of food.

Roux-en-Y gastric bypass (RYGB) (Figure 2)

This is the most common operation performed in the UK for morbid obesity. It is usually performed laparoscopically (LRYGB)

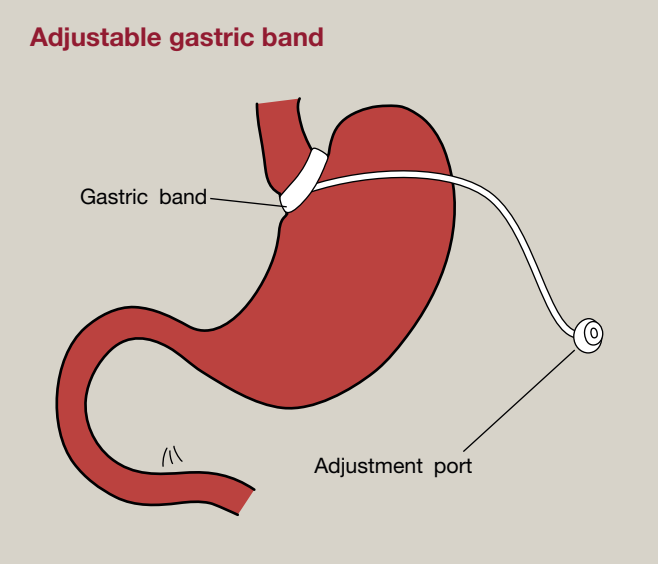

Figure 1

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Please cite this article in press as: Hawkins W, Maheswaran I, The management of bariatric surgery complications, Surgery (2016), http://dx.doi.org/10.1016/j.mpsur.2016.08.008

but occasionally as an open procedure. It involves the creation of a 20-ml proximal gastric pouch using stapling devices to separate it from the rest of the stomach. A 'Roux-en-Y reconstruction' is then performed. This creates an alimentary limb (carrying food from the new pouch), a proximal jejunal limb (carrying biliopancreatic juices) and a common channel where the two are joined. The exact length of these limbs can vary from surgeon to surgeon and patient to patient, but both are generally between 50 and 150 cm in length. There are several techniques to achieve this reconstruction but the most important variation to be aware of is whether the alimentary limb travels retrocolic (through the mesentery of the transverse colon) or antecolic (over the top of the transverse colon).

Laparoscopic sleeve gastrectomy (LSG)

This relatively new procedure has rapidly gained popularity due to its apparent ease of performance and is now the most common procedure performed worldwide. It involves mobilizing the greater curvature from the omentum and then excising a majority of the stomach by stapling beside a 30–40 Fr bougie placed along the lesser curvature. This removes most of the body and fundus of the stomach. Some surgeons will then reattach the omentum to the staple line.

A variation on this is gastric plication. This entails a similar mobilization of the greater curvature then imbricating (folding in) the free edge two or three times with sutures. A bougie is used to judge the size of the gastric lumen, with the intention of creating a similar result to a sleeve gastrectomy without the expense of using stapling devices.

Duodenal switch (Figure 3)

Whereas the operations above rely primarily on restriction and hormonal changes to bring about weight loss, the duodenal switch also causes malabsorption. This procedure is usually performed laparoscopically and begins with a loose sleeve gastrectomy (either at the same time or prior to the rest of the procedure). A reversed bypass is then performed, such that the alimentary limb is attached to a transected duodenum and the common channel starts much further along the small bowel (about 100 cm from the ileocaecal valve). This complex procedure carries an increased morbidity risk at the time of surgery and a significant long-term risk of malnutrition if not properly monitored. However, it does offer more dramatic and guaranteed weight loss as well as tighter diabetic control than the other procedures.

Complications from bariatric surgery

These can be classified into early (during the immediate postoperative period) or delayed (usually beyond 30 days postoperatively).

Early complications

In most specialist units immediate complications are rare following bariatric surgery. However, they can be tricky to detect as signs (such as distension and guarding) are often difficult to elicit in the morbidly obese patient. Frequently the signs of an impending intra-abdominal catastrophe can be determined from patient observations. Persistent tachycardia should be taken as a serious warning sign until proved otherwise. Other signs include spikes of fever, abdominal heaviness, hiccups and failure to progress. Many experienced bariatric surgeons will choose to relaparoscope any patient who is 'not quite right' after their operation as radiological imaging of these patients can be difficult to undertake and inconclusive.

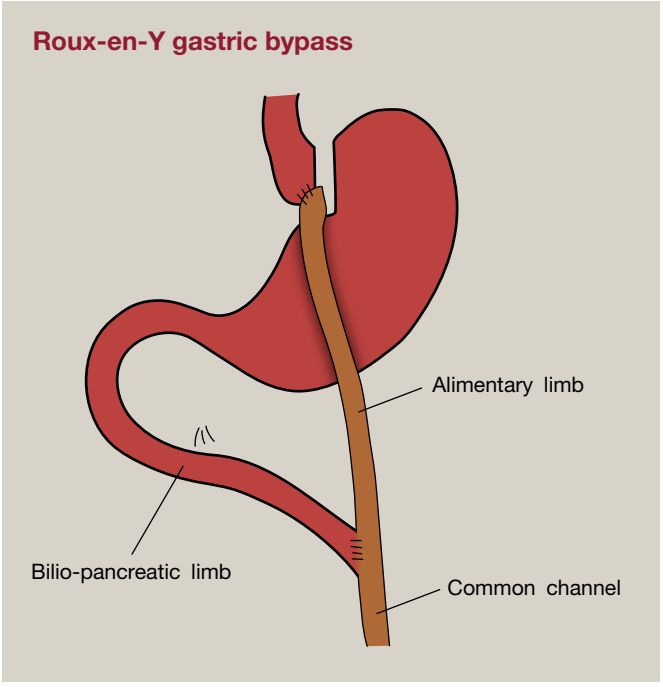

Figure 2

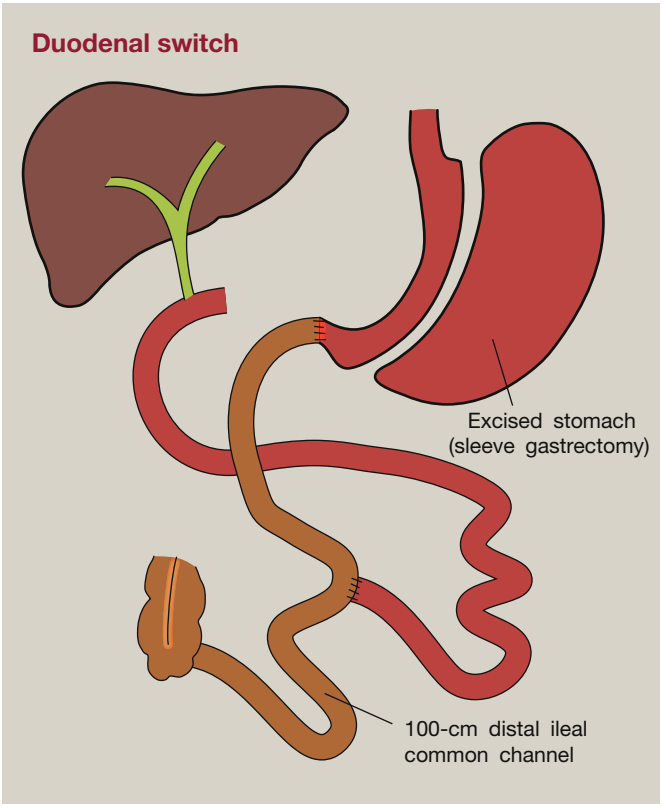

Figure 3

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