

Bariatric Surgery

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Bariatric surgery has evolved since its introduction in the 1950s. The original surgical procedure designed specifically to address morbid obesity was the jejunio-ileal bypass (JIB). Although associated with excellent and sustained weight loss, the JIB was eventually abandoned by all surgeons (and removed from the American College of Surgeons procedure list) due to a high incidence of complications and an unacceptable mortality rate. In 1967, Dr Edward Mason at the University of Iowa developed the gastric bypass after observing that females who had undergone gastric resections for peptic ulcer disease tended to lose weight that was difficult to regain after surgery.¹ The gastric bypass has since become the preferred bariatric surgical procedure in the United States. Since Mason's original description, several important technical modifications have been made, and results are well described.^{2,3} In general, morbidly obese patients may expect to lose about 60%-70% of their excess weight. In most cases, this is more than 100 pounds. This weight loss has also proven to be durable, with more than 10 years follow-up in some series.⁴ In 1994, Wittgrove and colleagues first introduced the laparoscopic approach to gastric bypass.⁵ Results of contemporary se-

ries demonstrate weight loss comparable to that of open gastric bypass, and acceptable complication rates.⁶

Roux-en-Y Gastric Bypass

The functional anatomy of a Roux-en-Y gastric bypass is the same, whether done open or laparoscopically (Figure 1). The proximal stomach is divided leaving an isolated 20-30 mL gastric pouch. The limited capacity of this pouch leads to a dramatic decrease in caloric intake, accounting for most of the weight loss after this procedure. This gastric pouch is connected to a piece of small intestine called the Roux-imb. There are no biliopancreatic secretions in the Roux-imb leading to the nutrient malabsorption encountered after this procedure. The Roux-en-Y gastric bypass is therefore both a restrictive and a malabsorptive weight loss procedure.

Outcomes of Gastric Bypass

The advantages of laparoscopic gastric bypass over open gastric bypass primarily relate to decreased wound complications and a quicker recovery. After laparoscopic gastric bypass, most patients are discharged on post-operative day 2. The average duration of in-hospital recovery after open gastric bypass is closer to 4 days. Studies have also demonstrated that quality of life is better during the initial 6 months after laparoscopic gastric bypass when compared to open gastric bypass.⁷ After 6 months, quality of life is improved to a similar degree for each approach.

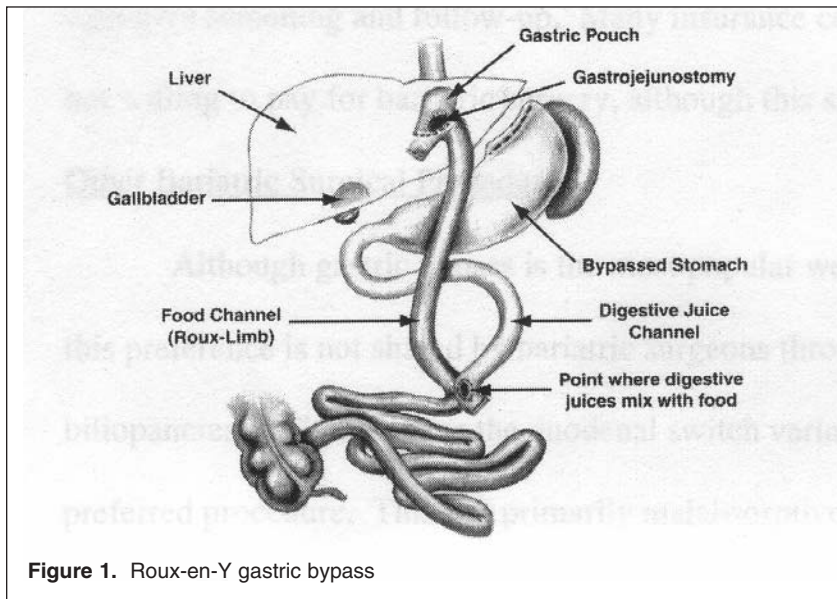
After open gastric bypass, incisional hernias (up to 25%) and wound infections (up to 15%) are common. The incidence of both of these complications is dramatically decreased after laparoscopic gastric bypass (less than 1% each). Other complications like intestinal leak (1%-2%), pulmonary embolism (<1%), bleeding (<1%), and death (0.5%) are similar for each surgical approach (in patients with comparable body mass index and co-morbid health conditions).⁸

The cost of the procedure is approximately \$20,000 to \$30,000, including preoperative screening and follow-up. Many insurance companies (especially HMOs) are not willing to pay for bariatric surgery, although this situation is improving.

Other Bariatric Surgical Procedures

Although gastric bypass is the most popular weight loss surgery in the United States, this preference is not shared by bariatric surgeons throughout the world. In Europe, the biliopancreatic diversion (or the duodenal switch variant of this procedure) is the preferred procedure. This is a primarily malabsorptive procedure performed by only a handful of US surgeons. The adjustable gastric band (which may be placed laparoscopically) has been popular in Europe and Australia for more than 10 years. This is a purely restrictive procedure that is slowly gaining popularity in the United States. The Food and Drug

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Administration approved this device in July 2001. When compared to the gastric bypass, the adjustable gastric band (also called the Lap Band) is likely associated with fewer serious life-threatening complications but may be associated with inferior weight loss. Well-designed comparative trials with the appropriate follow-up have not been conducted in order to make a definitive conclusion about which bariatric procedure is associated with the lowest risk to benefit ratio.

An experienced surgical team with a comprehensive, multi-disciplinary program may be more im-

portant than the specific bariatric procedure selected in terms of complications, results, and long-term outcomes after surgery. Patients need to be appropriately selected (surgeon, dietician, psychiatrist), properly educated (surgeon, dietician, nurse educator), and followed long-term (surgeon, dietician, nurse educator, primary care physician) to ensure excellent and durable results with few complications.

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