

BOMSS POSITION STATEMENT ON MINI GASTRIC BYPASS (LOOP OR SINGLE ANASTOMOSIS GASTRIC BYPASS)

A. Mini Gastric Bypass: Definitions and Procedural Consideration

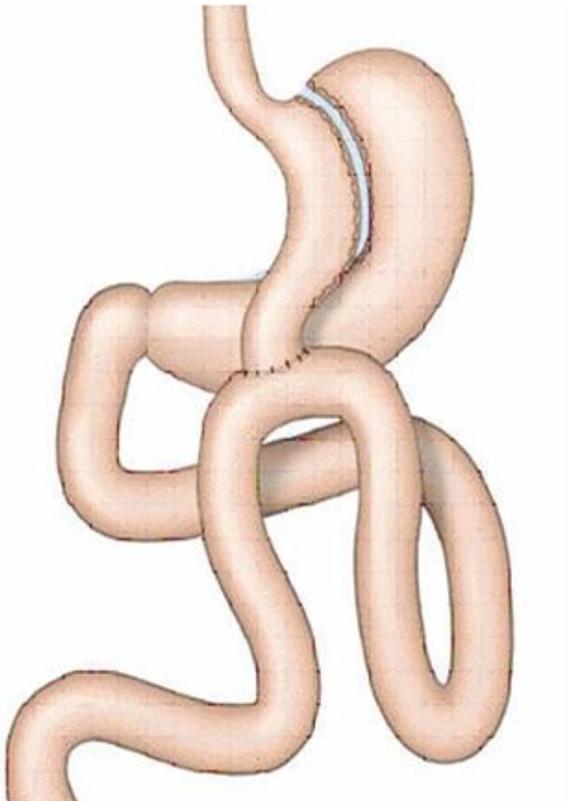
1. Loop Gastric Bypass

Mason and Ito described a loop gastric bypass, in 1967, as a treatment for morbid obesity. A fundus-based gastric pouch was formed by division of the stomach at the junction of the fundus and body. A loop of jejunum was mobilised and anastomosed (joined with a surgical stapling device and sutures) with the gastric pouch. This procedure had the advantage of requiring only a single anastomosis.

2. Mini Gastric Bypass

Derived by modification of Mason's Loop Gastric Bypass, the Mini Gastric Bypass (MGB) was described originally in 1997 by Rutledge. Several variations of this procedure exist. The stomach is divided at the junction of body and antrum to form a long narrow gastric pouch with subsequent anastomosis of that pouch to the jejunal loop, at about 200cm, varying from 150-300cm, from the DJ (duodeno-jejunal) flexure (ligament of Treitz). The narrow tube of gastric pouch affords a restrictive component and the bypassed small bowel contributes the malabsorptive element.

3. Figure 1: Illustration of the Mini Gastric Bypass



B. Advantages of the Mini Gastric Bypass

1. Single Anastomosis

As the MGB requires only a single anastomosis, it confers a degree of technical simplicity and the benefit of potentially fewer sites for anastomotic leaks to occur. Unlike a conventional bypass, in which an anastomotic leak may only contain salivary content and acid from pouch, a leak from a mini-gastric bypass would include enteric juices as well. Published experience with this procedure has however shown it to be at least as safe as the Roux en Y Gastric Bypass and systematic reviews have not documented unusual issues with the management of leaks.

2. Fewer sites for Internal Hernias

Internal hernias are a worrisome complication associated with a gastric bypass procedure, which many surgeons attempt to minimise by closing potential defects. These often present with insidious and non-specific symptoms that may be difficult to assess clinically, in the obese patient. These may necessitate the need for high quality imaging (CT scans) or laparoscopy. Owing to the presence of only a single anastomosis with MGB, the potential sites for internal hernias are reduced to one – Petersen's defect – and a recent systematic review found no published reports of such.

3. Reduced Technical Complexity

The formation of a single anastomosis as opposed to two reduces the technical difficulty of the procedure, and is associated with a shorter learning curve and a shorter operative time. Furthermore, ease of reversal and revision has been described in published reports on this procedure.

4. Demonstrated safety and efficacy

There is now published experience with this procedure of more than 6000 patients, performed over a period of 16 years, by a number of surgeons from different parts of the world. Their results, to date, suggest non-inferiority of MGB compared to the gold standard Roux en Gastric Bypass in terms of mortality, weight loss, comorbidity resolution, and quality of life. However, most series have only short follow up.

C. Disadvantages/Issues associated with the Mini Gastric Bypass

1. Risk of bile reflux

Loop gastro-enterostomy in MGB presents a potential risk of bile reflux. Patients with severe symptomatic reflux may need a correcting Braun's entero-enterostomy or Roux-en-Y gastric bypass. It should however be noted that no formal study has to date demonstrated an association between MGB and symptomatic "bile" reflux.

2. Association between bile reflux and oesophageal carcinoma

Animal studies have demonstrated an association between biliary reflux and oesophageal carcinoma. There is also a theoretical risk of increased gastric irritation and ulceration (particularly intractable margin ulceration). Published human experience with MGB has shown most cases of marginal ulcer to respond to medical management and rates similar to established procedures. Furthermore, a recent systematic review of human studies documented no instances of gastro-oesophageal cancer in the context of MGB. As a caveat, none of these studies described more than 10 years of follow-up.

In an endoscopy study of 28 patients, McCarthy et al demonstrated a greater than ten-fold increase in bile acid levels in the gastric pouch of Loop Gastric Bypass patients, compared to Roux-en-Y gastric bypass patients. It is however important to note that there are dissimilarities between Mason's Loop Gastric Bypass and the MGB (i.e. a gastric pouch formed of the gastric fundus as opposed to the cardia) which may affect pouch clearance.

3. Similarity with Billroth II gastrectomy

MGB does have some similarities with the Billroth II gastrectomy, a procedure used for gastric carcinoma and peptic ulceration, which has its own critics. An association between Billroth II gastrectomy and gastric carcinoma has been demonstrated by multiple studies. Other authors have however failed to confirm this association. All of these studies were carried out prior to the discovery of *Helicobacter pylori*, which may confound these findings, as this too alters cancer risks.

D. BOMSS Recommendations

A. BOMSS recommends that the MGB be introduced into routine bariatric surgical practice within the confines of careful prospective data collection, by surgeons working within the framework described in the BOMSS Professional Standards guidelines 2013. Operative data, in-hospital stay, readmission / reoperation and follow up data should be submitted to the National Bariatric Surgery Registry.

B. Patients should be counselled regarding symptomatic biliary reflux (which may require further surgical treatment), the controversy surrounding the risk of gastric or oesophageal carcinoma and the lack of long-term outcome data.

C. There is currently no evidence to suggest routine surveillance endoscopy is beneficial but long term screening of the oesophagus and gastric pouch should be considered.

D. Patients undergoing MGB require careful long-term follow up that observes nutritional variables as described in the BOMSS Guidelines on perioperative and postoperative biochemical monitoring and micronutrient replacement for patients undergoing bariatric surgery (publication date September 2014).

E. BOMSS recommends that this position statement be reviewed in 2 years, in keeping with its usual policy document review cycles.

E. References

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