BARIATRIC SOLUTIONS

The advantages of MGB, Diverted-MGB and banded-MGB

The popularity of mini gastric bypass (MGB) has increased in recent years as a simpler, yet safe and effective alternative to roux en y gastric bypass (RYGB). Bariatric News talked to Dr Rui Ribeiro from the Centro Hospitalar de Lisboa Central, Portugal, about the benefits of MGB, Diverted-MGB and banded-MGB…

RUI Ribeiro performed his first MGB in 2010 when several of his patients who had previously had a RYGB began re-gaining weight, as well as presenting with hypoglycaemia, despite most of the patients following post-surgical protocols. After performing several dozen MGB, he readily adopted MGB as his procedure of choice. According to Ribeiro, MGB not only results in better long-term weight loss but has several other procedural advantages over RYGB.

"In our experience, not only does MGB offer better and sustained weight loss over a longer period of time compared with RYGB, but the procedure is easy to perform – it is relatively straight forward and safe," he explained. "This is coupled with reduced morbidity, almost no leaks, no stenosis, very few instances of dumping. In the long-term, we have also seen fewer complications and importantly a reduction in the numbers of internal hernias."

He adds that the procedure offers a good 'exit strategy' as it is also reversible and easy to revise. So for example, if a patient has lost too much weight it is possible to reduce the length of the biliopancreatic limb. Conversely, if a patient has gained weight the limb can be elongated.

"For the patient's viewpoint, the MGB is less restrictive than RYGB so they can eat different foods including small portions of meat and bread. Furthermore, our patients report that they are very satisfied with MGB and we have very few complaints in the post-operative period - no pain, no vomiting, no obstipation, no . Now, I will only perform a RYGB if I have concerns regarding GERD, Barrett's Oesphoghaus or hiatal hernia as RYBG offers more remedies. But I perform less than ten RYGB cases a year.

He explains that a very important characteristic of the operation is the extra-long pouch the MGB has on the fill volume as the pouch is crucial to the restrictive element of the MGB procedure, specifically if the pouch is made long and thin it will not dilate in the future preventing regain weight. "In addition, if the pouch is made long and thin, it prevents bile going up through the limb into the oesophagus."

In his experience, MGB does lead to accelerated pouch emptying but he added that he was not aware of any studies in the literature that have demonstrated this and said studies need to confirm this.

"Of course, some MGB patients present with weight regain, but much fewer MGB patients than compared with RYGB patients," he added.

With regards to cost, Ribeiro said that the direct costs are similar to RYGB, however, if one includes the indirect costs associated with increased morbidity following RYGB, then in his experience MGB is very cost-competitive with reduced hospital stay and fewer complications.

Of course, another key element of any bariatric/metabolic procedure is the resolution of comorbidities and he said that there is sufficient evidence in the literature that demonstrate that MGB is equal to, if not better than both RYGB and sleeve gastrectomy.

"My centre has not studied this in great detail, but in our experiences there is little difference between RYGB, MGB, sleeve and Diverted-MGB. A 2011 study by Professor Wei J Lee (Gastric bypass vs sleeve gastrectomy for type 2 diabetes mellitus: a randomized controlled trial, Archives of Surgery, 2011) showed that MGB out performed both sleeve and RYGB with regards to T2DM resolution reporting 93% resolution, compared to 47% and 44%, respectively."

In addition, he cited seven year (Jan 2007 to Mar 2014) data from Dr Gurvinder S Jammu who audited 1,107 cases, comparing SG, RYGB and MGB, at the Jammu Hospital, Jalandhar, India. Their study included 473 MGBs, 339 LSGs, and 295 RYGBs. The study, 'A 7-Year Clinical Audit of 1107 Cases Comparing Sleeve Gastrectomy, Roux-En-Y Gastric Bypass, and Mini-Gastric Bypass, to Determine an Effective and Safe Bariatric and Metabolic Procedure', published in *Obesity Surgery*, reported that the resolution of type 2 diabetes, dyslipidemia and hypertension was highest in the MGB group. Importantly, in resolving diabetes, 94.4% of patients in the MGB group stopped diabetic medications within a few weeks after their procedure, compared with 76.2% of patients in the RYGB group and 59.4% of patients in the LSG group.

One often cited complication from MGB is increased reflux and/or ulcerations, however, Ribeiro believes this is probably due to the patient's lifestyle rather than a direct consequences of the procedure itself. And maybe because if that GE reflux seems to be less common in Southern European countries.

"In over 600 MGB cases, I have experienced perhaps 5-6 cases of ulcerations, so ulcerations are a rare occurrence following the MGB procedure. I do know of colleagues from other centres and countries who have reported a higher occurrence of ulcerations so I would expect that the reason is more to do with medications, diet, Helicobacter pilori, smoking etc than the operation itself.

Diverted-MGB (dMGB)

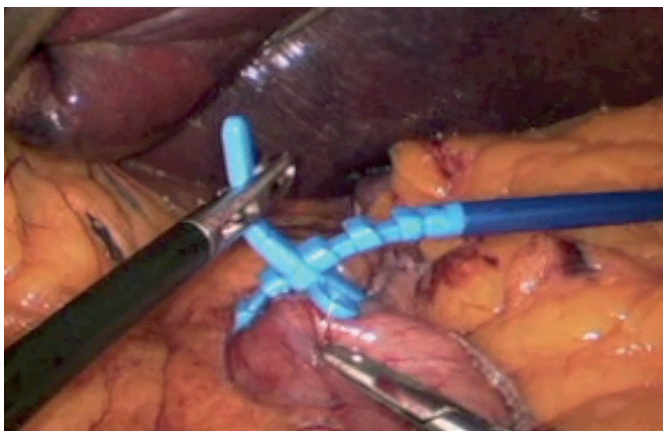
He explained that biliary reflux is a somehow frequent and disturbing problem that requires re-operation, mainly in patients undergoing band revisions although he has had some primary cases who have had an MGB with short pouches who also present with biliary reflux. In such cases or in cases where there is a risk of GERD (patients with esophagitis, hiatal hernia, Barrett's or previous sleeves), they now perform a variation the call perform a Diverted-MGB (dMGB).

In the dMGB, the pouch is usually >18cm, the biliopancreatic (BP) limb is 200cm, Roux-Y alimentary limb is 80cm, and the common limb has a length of at least 300cm. The mesenteric and Peterson spaces are closed. They add 50cm to the BP limb in diabetic and super-obese patients. However, in patients older than 50 years, they make the BP limb 180cm reducing the risk of malnutrition (Figure 1). There are two differences compared with MGB: less diarrhoea and some cases of non-relevant dumping. He added that weight loss is the same, with fatty stools.

"So far we have performed about 250 dMGB cases with two-year follow-up and have good outcomes, no cases of reflux and the same weight loss as MGB. As a result, we now perform half of our cases as dMGB and half as MGB."

Banded-MGB

In some MGB patients, Ribeiro endorses the use of a ring (or banding), to prevent weight regain in the long run. He said that the banded-MGB is really a mixture of procedures that adds the benefit of restricting pouch dilatation, as well as adding an element of controlling how the patient eats (chewing and not overeating).



Inserting the MiniMizer Ring (Courtesy of Dr Rui Ribiero)

Rui Ribeiro

"In my practice most of the patients don't receive a ring and we only use it when the psychological evaluation defines the patient as very compulsive, or probably not compliant with the rules. I have been using rings for more than seven years with no complications and rings can be utilised in all types of bariatric surgery – RYGB, MGB or sleeve gastrectomy to increase the restrictive element of the procedure."

He said that there are several rings (GaBP ring, AMI ring, IOC bypass band ring) available on the market with different measurements. His personal preference is the MiniMizer Ring (Bariatric Solutions) because it is the 'complete option' - it is flexible, easy to control, as well as thin and elastic enough to slow down food progression without stopping completely. The MiniMizer is also easy to close and reopen, in cases of stenosis if necessary, and has the advantage of four different closure positions - from 8.0cm length (approx. 26mm internal diameter) to 7.5cm length (approx. 24mm internal diameter) 7.0cm length (approx. 22mm internal diameter) and 6.5cm length (approx. 20mm internal diameter). In addition, it enters a 5mm trocar and its special silicone covered introduction needle is easily placed retro-gastrically during the procedure and easily removed if required.

"I know in Brazil they were using a ring with 5.0-5.5cm but these rings were too tight, so in my experience I do not place a ring that is less than 6.5cm, that is the limit, and if the patient follows the dietitian's rules they will not feel a lot the ring. However, if they do not adhere to the dietician's guidelines the ring will restrain the high pouch emptying in case of food bolus volume, quick ingestion pace and badly chewed food ingestion. Our anastomosis in the MGB is large, about 3cm diameter, so it is dilated from the very beginning. The ring is placed under the oesophago-gastric junction (3cm down) and helps to avoid gastric tube and bowel dilation. The smaller internal diameter of the MiniMizer Ring is 20mm, so for me 6.5cm is the magical number. This prevents overtightening of the pouch and it prevents dysphagia and erosion."

His centre was part of the Banded Versus Conventional Laparoscopic Roux-en-Y (GABY) study and, although his centre's data was not included in the published results, they followed their patients prospectively. The results show that the patients who received a ring lost more weight and their weight loss has been maintained, compared to non-banded RYGB patients.

"We know that the ring helps to avoid a rapid filling and consequently prevents pouch dilation. In addition, there is some evidence that it may have a barrier effect against oesophageal reflux. In my personal series the ring not only prevents weight regain, but improves %BMI loss by 6% and I have had no instances of perforation or migration using the MiniMizer ring. I am an advocate of banded-MGB, but we need evidence to support our practice, and therefore require some prospective, randomised, matched studies comparing banded-MGB and banded-RYGB. We are ready to begin such a study in the early 2016."

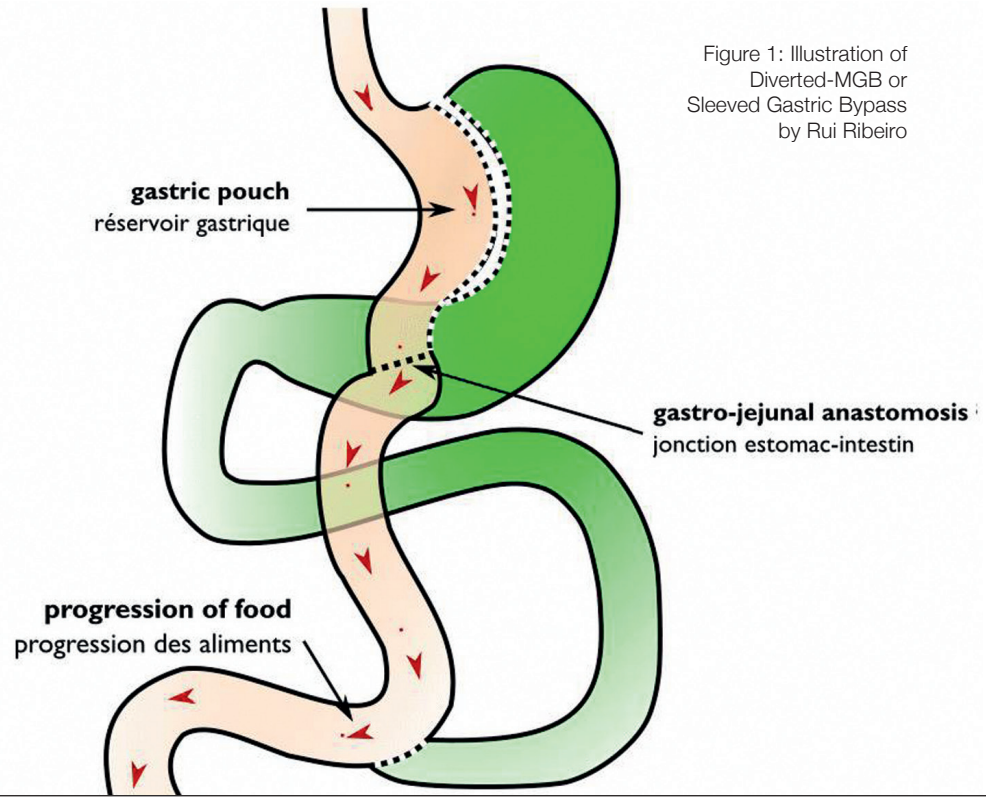


Figure 1: Illustration of Diverted-MGB or Sleeved Gastric Bypass by Rui Ribeiro