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The cooperation between endoscopists and surgeons in treating complications of bariatric surgery

E.M.H. Mathus-Vliegen, MD, PhD, Gastroenterologist, Professor in Clinical Nutrition *

Academic Medical Centre, University of Amsterdam, Amsterdam, Meibergdreef 9, 1105 AZ Amsterdam, The Netherlands

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A B S T R A C T

The results of lifestyle interventions and pharmacotherapy are disappointing in severe obesity which is characterised by premature death and many obesity-associated co-morbidities. Only surgery may achieve significant and durable weight losses associated with increased life expectancy and improvement of co-morbidities. Bariatric surgery involves the gastrointestinal tract and may therefore increase gastrointestinal complaints. Bariatric surgery may also result in complications which in many cases can be solved by endoscopic interventions. This requires a close cooperation between surgeons and endoscopists. This chapter will concentrate on the most commonly performed operations such as the Roux-en-Y gastric bypass, the adjustable gastric banding and the sleeve gastrectomy, in the majority of cases performed by laparoscopy. Operations such as the vertical banded gastroplasty and the biliopancreatic diversion with or without duodenal switch will not be discussed at length as patients with these operations will not be encountered frequently and their management can be found under the headings of the other operations.

* Tel.: +31 43 4082099; fax: +31 20 6917033.
E-mail address: e.mathus-vliegen@amc.uva.nl.

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Introduction

The world epidemic of overweight (BMI $\geq$ 25 kg/m^2) is estimated to encompass about 2.3 billion adults by the year 2015; more than 700 million people will be obese (BMI $\geq$ 30 kg/m^2) in 2015 as projected by the WHO. To address this epidemic, lifestyle interventions, focused on diet, physical exercise and behavioural changes, should be available and accessible to everyone. Effective medical treatment including pharmacotherapy is urgently needed.

The disappointing results of current approaches to treat obesity and the lack of long-term effectiveness of non-surgical treatments for clinically severe obesity have led to a burgeoning interest in bariatric surgery. A meta-analysis of 11 studies in 796 obese individuals which compared non-surgical multicomponent approach, including pharmacotherapy, with bariatric surgery, clearly showed the benefits of surgery [1]. Individuals allocated to bariatric operations lost 26 kg more body weight, had a higher remission of diabetes of at least 5.3 times and a higher remission rate of the metabolic syndrome of 1.5. There was a greater improvement of QOL and reduction in medicine use. The most common adverse events of bariatric surgery were iron deficiency (15%) and re-operations (8%).

Buchwald showed the exponential increase in the number of bariatric operations from 40,000 in 1998 to 146,301 procedures in 2003 and 220,000 in 2008 in the US and Canada [2]. But also worldwide numbers are increasing. The US and Canada performed the largest number of operations, followed by Brazil, France, Mexico, Australia and New Zealand and the UK in decreasing order [3]. Laparoscopic Roux-en-Y gastric bypass (RYGB), laparoscopic adjustable gastric band (LAGB), sleeve gastrectomy (SG), biliopancreatic diversion (BPD) and biliopancreatic diversion with duodenal switch (BPD-DS) comprise the vast majority of bariatric surgeries. Globally, the most commonly performed operations were RYGB in 46.6%, SG 27.8%, LAGB 17.8%, BPD/DS 2.2%. The global trends from 2003 to 2008 to 2011 showed a decrease in RYGB from 65.1% to 49.0% to 46.6%, an increase followed by a steep decline for LAGB from 24.4% to 42.3% to 17.8%, a marked increase in SG from 0% to 5.3% to 27.9% and a decline in BPD/DS from 6.1% to 4.9% to 2.1% [3]. The number of operations performed as a percentage of the national population varied widely but no country reached 1%. Commensurate with the growth in the number of procedures performed worldwide has been an increased presentation of complex surgical morbidities and post-operative complaints and here the endoscopist may have a role to play.

Surgical procedures have been categorised according to purely malabsorptive procedures such as the jejunoileal bypass, abandoned since 1978 because of an unacceptable incidence of complications; purely restrictive operations such as the vertical banded gastroplasty – abandoned because of lack of efficacy and the availability of effective alternatives – , the gastric band, and the sleeve gastrectomy, and the combined restrictive-malabsorptive procedures [4]. The short-limb or proximal Roux-en-Y gastric bypass and the long-limb gastric bypass are the most restrictive operations in the latter group; the biliopancreatic diversion, the biliopancreatic diversion with duodenal switch and the very-long-limb or distal Roux-en-Y gastric bypass are the most malabsorptive procedures. Today, surgical procedures are categorised according to their presumed mechanism of action into metabolic or non-metabolic surgery.

Finally, the laparoscopic method is used in the majority of cases with numerous advantages such as reduced postoperative pain, shorter hospitalisation, decreased impairment due to pulmonary complications, quicker recovery, diminished parameters of systemic injury, a dramatic reduction in the frequency of wound infections and ventral hernias [5–7]. However, some complications seem to be higher after the laparoscopic route such as postoperative early and late bowel obstruction, GI haemorrhage and stomal stenosis when using the circular stapler, after laparoscopic gastric bypass [6,8].This may change as surgeons are giving more attention to closing the mesenteric defects and oversewing and buttressing the staple lines.

The role of endoscopy

The surgical options with their benefits are evident and adverse effects on digestive symptoms are to be expected [9].

The common indications for endoscopy include the evaluation of symptoms, the management of a complication and the evaluation of failure of weight loss [10]. The endoscopist should discuss the