Gastrointestinal consequences of bariatric surgery
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GASTROINTESTINAL CONSEQUENCES OF BARIATRIC SURGERY

The Roux-en-Y gastric bypass unveiled

Thomas Boerlage

UITNODIGING

voor het bijwonen van de openbare verdediging van het proefschrift

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Na afloop is er een receptie ter plaatse

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GASTROINTESTINAL CONSEQUENCES OF BARIATRIC SURGERY

The Roux-en-Y gastric bypass unveiled

THOMAS BOERLAGE

Als ik later groot ben, word ik ook expert opinion
Gastrointestinal consequences of bariatric surgery: The Roux-en-Y gastric bypass unveiled

Academic thesis, University of Amsterdam
Thomas C.C. Boerlage

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The Roux-en-Y gastric bypass unveiled

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aan de Universiteit van Amsterdam
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Faculteit der Geneeskunde
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OUTLINE OF THIS THESIS
Bariatric surgery is the generic term for all types of surgery for the treatment of morbid obesity (ancient Greek: “βάρος” - weight and “ιατρός” - doctor). The most commonly performed bariatric procedure is the Roux-en-Y gastric bypass (RYGB), the primary topic of this thesis. In Chapter 1, we give a general overview of bariatric surgery, its effects and its complications. In the following chapters the main emphasis is on the postoperative gastrointestinal consequences.

In Chapter 2 we study the gastrointestinal symptoms and food intolerance of patients who underwent RYGB two years before. Patients with morbid obesity have more gastrointestinal complaints than normal-weight controls. Therefore, it might be hypothesized that the weight loss after RYGB also leads to a decrease in gastrointestinal symptoms. On the other hand, RYGB is known to sometimes aggravate certain symptoms, for example dysphagia. RYGB also has a strong impact on food tolerance, with many patients developing food intolerance after surgery. Studies with follow-up extending beyond the first year after surgery are scarce, even though it is only in the second year postoperative that the weight loss and eating behavior stabilizes. Therefore, this study was designed to determine the gastrointestinal symptoms and food intolerance in patients two years after RYGB and compare these to an obese control group.

The majority of the patients in this control group eventually underwent RYGB as well. In Chapter 3 we study the gastrointestinal complaints of these patients two years after surgery as well. Because of the longitudinal design of this study, we are also able to study the course of gastrointestinal symptoms in time. We can also determine whether patient characteristics, such as preoperative symptoms and prolonged use of medication with abdominal effects such as proton pump inhibitors, can be predictive of the severity of postoperative gastrointestinal symptoms.

Considering the routine use of a proton pump inhibitor after RYGB, we study the prevalence of hypomagnesaemia in Chapter 4. Hypomagnesaemia is a rare but sometimes severe complication of proton pump inhibitors. We will determine the prevalence of hypomagnesaemia in the first year of RYGB in a large group of patients, who were routinely prescribed a proton pump inhibitor in the first year after surgery.

When a bariatric patient presents with gastrointestinal complaints, it is often difficult for the clinician to distinguish between symptoms indicative of pathology, and functional complaints that need no further evaluation. In Chapter 5 we study three commonly used faecal tests in patients who underwent RYGB. Because RYGB causes
alterations in gastrointestinal anatomy and function, we hypothesize that the levels of these faecal markers might also change. The faecal calprotectin level can be used for the diagnosis or follow-up of inflammatory bowel disease; faecal elastase gives an indication of pancreatic exocrine function; and faecal alpha-1-antitrypsin is a marker for intestinal leakage of protein.

In **Chapter 6** we study the diagnostic yield of upper endoscopy in patients who underwent RYGB and present with abdominal complaints. An upper endoscopy is frequently performed after RYGB, but often no abnormalities are found. We determine the prevalence of relevant findings at upper endoscopy, such as marginal ulcer and stomal stenosis, in our centre. Next, we aim to identify variables associated with a relevant finding at EGD, and create a prediction model.

In **Chapter 7** we study endoscopic stent placement in patients with staple line leakage after RYGB or sleeve gastrectomy. Staple line leakage is a severe adverse event of bariatric surgery for which revisional surgery is often necessary. In selected cases, endoscopic placement of a self-expandable stent can be an alternative to surgery. However, stents often migrate, hampering successful treatment or even leading to serious complications. The design of the “Beta stent” is thought to prevent migration; in this chapter we evaluate the success percentage and complication rate of this specific stent.

Another complication of bariatric surgery is symptomatic gallstone disease. The rapid weight loss after surgery greatly increases the chance of developing gallstones. However, routine concurrent cholecystectomy was found not to be effective when it comes to costs and comorbidity. Ursodeoxycholic acid was shown to be effective in the prevention of gallstone development, but no studies have been performed with symptomatic gallstone disease as an endpoint. In **Chapter 8** we describe the protocol for the UPGRADE, a randomized controlled trial that is currently underway.

Finally, in the **Summary & General Discussion** we will discuss the results of the previous chapters and share our thoughts on their implications and on the future developments in bariatric surgery.