CHAPTER 5

Is esophagogastroduodenoscopy prior to Roux-en-Y gastric bypass or sleeve gastrectomy mandatory?

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Abstract:

Background: Roux-en-Y gastric bypass is a frequently used technique in bariatric surgery. Postoperative anatomy is altered by exclusion of the stomach which makes this organ inaccessible for future esophagogastroduodenoscopy (EGD). The value of preoperative assessment of the stomach is unclear. Some institutions choose to investigate the future remnant stomach by EGD. Aim of the present study is to quantify the yield of pre-operative EGD in our institution.

Methods: Patients, planned for primary laparoscopic Roux-Y Gastric Bypass (LRYGB) or laparoscopic sleeve gastrectomy (LSG) from December 2007 until August 2012, were screened by EGD in advance. Results of EGD and patient characteristics were retrospectively analysed and categorized according to a classification system based on intervention needed.

Results: 523 patients (122 male, 401 female, mean age 44.3 years, average BMI 46.6) underwent preoperative EGD. In 257 patients (48.9%) no abnormality was found (group A), 117 patients (17.2%) had abnormalities without treatment consequences (B1), 84 patients (of the 326 tested, 26.8%) were H. Pylori positive (B2), in 75 (14.3%) treatment with proton pump inhibitors was required (B3), 6 (1.1%) required follow up EGD before surgery (C). For one patient (0.2%) the operation was cancelled because preoperative EGD showed Barrett’s oesophagus with carcinoma (D). When all abnormalities were taken into account, baselines did show a significant difference for age, gender and reflux symptoms.

Conclusion: Standard preoperative assessment by EGD in patients who are planned for bariatric surgery is not indicated. The number needed to screen to find clinically significant abnormalities is high.
### Background

Obesity, defined as a Body Mass Index (BMI) of more than 30 kg/m², is an increasing problem in the Western World. In the United States, the prevalence is around 30% in the adult population. The incidence is increasing and predictions of the World Health Organization indicate that by 2015, approximately 2.3 billion adults will be overweight and more than 700 million will be obese. Bariatric surgery offers the only long-lasting treatment with excellent effects on co-morbidity and weight loss for (morbid) obesity (BMI >40 or BMI >35 with comorbidity) [2].

Several types of bariatric surgery are performed, of which laparoscopic gastric banding (purely restriction) and (laparoscopic) Roux-Y Gastric Bypass (LRYGB; combination of restriction and malabsorption) are the most popular worldwide. The LRYGB is currently the ‘gold standard’ weight reduction operation because of superior results in sustained weight loss and the reduction of diabetes and other morbidities. In 2008 nearly 170,000 LRYGB’s have been performed, an increase of 28.2% in the US and 595.1% in Europe in comparison to 2003 [5]. By creation of the small proximal gastric pouch and Roux-Y small bowel reconstruction with a long alimentary limb (75-150 cm), the postoperative anatomy is altered. A remnant stomach is created and left in situ; this part becomes inaccessible for, future postoperative endoscopy. The laparoscopic sleeve gastrectomy (LSG) is becoming increasingly popular, also as ‘stand-alone’ procedure, due to its good results. The remnant stomach is removed after the sleeve is created [6].

Two other procedures are the biliopancreatic diversion and the duodenal switch. These procedures are not carried out in this institution.

The rationale for performing an esophagogastroduodenoscopy (EGD) prior to bariatric surgery is to detect and/or treat lesions (e.g. inflammatory (H. Pylori) processes, ulcers and (pre) malignancies) that might alter treatment strategy: is surgery postponed or cancelled due to findings at preoperative endoscopy? The value of a standard preoperative EGD is unclear and literature is scarce. Preoperative abnormality rates found at EGD vary with the definition used and country of screening and ranges between 10 and 67% [7,8,9,10].

Reported incidence of (pre) malignant findings postoperative is around 0.25%, in patients who were postoperatively subjected to double balloon endoscopy or diagnostic laparoscopy because of gastro-intestinal complaints. Guidelines for preoperative endoscopic screening (6). The rationale for performing an esophagogastroduodenoscopy (EGD) prior to bariatric surgery is to detect and/or treat lesions (e.g. inflammatory (H. Pylori) processes, ulcers and (pre) malignancies) that might alter treatment strategy: is surgery postponed or cancelled due to findings at preoperative endoscopy? The value of a standard preoperative EGD is unclear and literature is scarce. Preoperative abnormality rates found at EGD vary with the definition used and country of screening and ranges between 10 and 67% [7,8,9,10].

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in bariatric surgery are indefinite, and based on little evidence \textsuperscript{(11)}. The American Society for Gastro-intestinal Endoscopy (ASGE) advises preoperative screening on H. Pylori because of the high incidence of infection (30-40\%). The ASGE concludes that evaluation of people without symptoms is doubtful \textsuperscript{(12)}. The European Association for Endoscopic Surgery (EAES) bases its recommendation on the systematic review of Sauerland et al. and recommends EGD although ‘based on a compromise’ and provides no evidence to support their recommendation. All guidelines advise to eradicate H. Pylori preoperatively if infection is present \textsuperscript{(13,14)}. In summary, the role of EGD prior to LRYGB is still under debate. Therefore, the aim of the present study is to determine the yield of abnormalities found at preoperative EGD and the location of these abnormalities. Hence, proximal abnormalities up to the anastomosis remain accessible after surgery and do not change bariatric strategy. Furthermore, is it possible to define a (sub) group of patients in which preoperative EGD can prevent adverse long-term diseases?

### Methods

An electronic prospective database of a consecutive series of all patients who were scheduled for bariatric surgery at the department of surgery, Sint Lucas Andreas Hospital Amsterdam the Netherlands, was retrospectively reviewed. Patients included were those scheduled for primary LRYGB or LSG and between 18-65 years of age with morbid obesity according to the IFSO criteria \textsuperscript{(15)}. All included patients underwent full preoperative screening. The screening included physical examination, evaluation of comorbidities, BMI and use of medication. Psychological and dietary examination by a specialized centre for the screening of bariatric patients was performed. All patients underwent screening for obstructive sleep apnoea by the orolaryngeal department. Finally, all patients were submitted to esophagogastroduodenoscopy.

Upper endoscopic evaluation was routinely performed on all patients except when patients refused (then a Helicobacter Pylori antigen stool test was performed) or if already performed in a different centre, less than six months prior to the intake. EGD was carried out by experienced gastroenterologists at our institution or, in some cases, performed in an outpatient facility.

Both LRYGB as well as LSG were performed by three experienced bariatric surgeons or under their direct supervision. In all patients the gastric bypass was conducted laparoscopically.
There were two conversions to open procedure (one RYGB and one SG) because of adhesions that impaired sight. A total of five trocars were used. In patients who underwent LRYGB a pouch of approximately 30 ml was created in the lesser curvature using multiple firings of an endoscopic stapler (mainly 1 horizontal and 3 vertical). The Roux limb was tension free located in an antecolic, antegastric fashion. The gastrojejunostomy (GJ) was stapled with a linear Endo-GIA Universal® stapler (Johnson and Johnson, Sommerville, NY, USA). The anterior aspect of the GJ was closed using uninterrupted VICRYL 2.0 (Ethicon inc. a Johnson and Johnson Company, Sommerville, NY, USA). Subsequently 120-150 cm (depending of the BMI) was measured after which the side to side jejunoo-jejunostomy (JJ) was made with the linear stapler (the anterior side was closed with absorbable suture material). The connecting part was stapled. Pneumatic testing was used to control the GJS.

In patients undergoing LSG three 12 mm trocars and two 5 mm trocars are used. The sleeve was created using multiple firings of the Echelon 60 endoscopic stapler. The remnant stomach was removed through the most lateral 12 mm port after the trocar was removed and the incision enlarged (2-3 cm) and send for immunohistopathologic examination. Active desufflation took place and the skin was closed.

Outcome of the preoperative EGD did not affect the procedure of choice. The type of procedure was only adjusted when it was not possible to create the gastrojejunostomy safely because of severe adhesions or intra-abdominal fat mass during surgery. Then LSG was performed.

Data collection
Results of the EGD, clinical and pathological data were retrieved from patient electronic medical records. Clinical data included comorbidities such as diabetes, hypertension, COPD, hyperlipidaemia and symptoms of gastro-oesophageal-reflux disease (GERD). Usage of medication (prednisolone inhalation corticosteroids and non-steroidal inflammatory drugs, antacida) and intoxications (nicotine and alcohol) were also included in the database.

All EGD reports and pathological data were reviewed to determine the prevalence of clinically significant lesions of the upper gastrointestinal tract. At the start of this study H. Pylori screening was not routinely done; this became standardized later on. Patients tested for the presence of H. Pylori were considered a subgroup and separately analysed. The lesions were classified according to their clinical significance, e.g. the consequences: does bariatric surgery need to be postponed or even cancelled? This classification system is...
not previously described and based on consensus between the gastroenterologists and bariatric surgeons of our institution. Group A were patients in which no abnormality was found. Group B1 included patients were abnormalities were found, but no intervention was required (e.g. sliding hiatal hernia; reflux esophagitis grade A; Schatzki’s ring and fundic gland polyps). Group B2 included patients with H. Pylori infection, these patients received eradication therapy. Group B3 existed of patients who had abnormalities that required proton pump inhibitor treatment, (e.g. different forms of gastritis, esophagitis, bulbitis and Barrett’s oesophagus). Group C consisted of patients, who had an abnormality in which follow-up EGD prior to surgery (e.g. severe esophagitis (grade C), severe erosive gastritis and ulcer disease) was needed, thereby postponing the procedure. The final group was classified as D. This group included patients by whom surgery had to be cancelled because of lesions found at EGD, for example (pre)malignancies that required extensive treatment.

### Table 1: Abnormalities classified

<table>
<thead>
<tr>
<th>Classification in groups (N = 523)</th>
<th>Consequence of endoscopically diagnosed findings</th>
<th>Percentage (%)</th>
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<tr>
<td>A (N = 257)</td>
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<td>H. Pylori eradication</td>
<td>26.4%</td>
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<td>B3 (N = 90)</td>
<td>Abnormalities that can be treated by PPI administration or surveillance</td>
<td>13.6%</td>
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</tr>
<tr>
<td>C (N = 6)</td>
<td>Abnormalities that need the operation to be postponed and required re-EGD2</td>
<td>0.9%</td>
<td>Ventricular ulcer Forrest IC/III, Severe erosive gastritis</td>
</tr>
<tr>
<td>D (N = 1)</td>
<td>Abnormalities that required cancellation of the operation</td>
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<td>Esophageal carcinoma</td>
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1 HD = hernia diafragmatica
2 EGD = esophagogastroduodenscopy

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Statistical Analysis
All data were analysed using SPSS 18.0 for Windows (SPSS Inc. Chicago Illinois, USA). Age, gender, co-morbidities, intoxications (including medication) and initial body mass index were examined as predictors of upper gastro-intestinal lesions. The Independent Students T- and Mann-Whitney U test were used to determine any statistical significance for the continue variables and the Chi-square/Fisher’s exact test for the dichotomous variables. Logistic regression analysis was performed to determine any association between the risk factors. 2-sided P-values of less than 0.05 were considered significant.

Results
EGD was performed on 662 of 720 (91.9%) patients from January 2007 until August 2012. In 58 patients (8.1%) EGD was not performed for various reasons as described in the method section. 481 (72.7%) patients underwent primary LRYGB and 42 (71%) primary LSG. A total of 138 (20.9%) patients underwent various types of revisional bariatric surgery and were therefore left out of further analysis.

Outcome
A total of 523 patients were included. The majority of patients, 400 (76.5%), was female, the mean age was 44.3 years (range 18-66) and the average body mass index (BMI) was 46.5 (range 31.1-77.6), Table 2. Patients were classified as described in the methods section. Some patients had multiple lesions; they were classified according to the lesion that belonged to the highest category. In 257 (49.1%) cases no abnormality was found (group A). 102 (15.4%) patients belonged to group B 1 and had findings that did not have any consequences. 83 (25.7%) of 326 patients that were screened for presence of H. Pylori, needed eradication therapy, belonging to group B2. 74 (14.1%) patients belonged to group B3, needing treatment with PPI. Six patients were categorized as group C (1.1%) needing follow up EGD prior to surgery, which postponed the operation. Reasons for postponing the operation were gastric ulcer in three patients, severe erosive gastritis in one patient, suspected familial adenomatous polyposis that required DNA investigation in one patient (negative results) and severe reflux-esophagitis (Grade C) in one patient. Finally, for one patient the operation was cancelled (group D, 0.2%). In this male patient, the preoperative EGD showed Barrett’s oesophagus with oesophageal carcinoma. He was referred to a tertiary centre for treatment Table 1.

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Four (0.8%) of the 523 patients were considered to have a gastric tumour at EGD; immunohistopathological assessment showed large fundic gland polyps in two patients; lipoma in one patient, and severe chronic *H. Pylori* inflammation in one patient. The immunohistopathological assessment outcome revealed no lesions for which the operation had to be postponed or cancelled.

All lesions were separately scored. The total percentage per lesion combined is therefore higher than 100% (Table 3+4).

Group C and D were considered clinical relevant findings with respect to the preoperative EGD. Since group C and D combined was 1.3% of the whole group, it was impossible to perform reliable uni-and multivariate statistical analysis and predict risk factors for this particular subgroup.
Table 3: Abnormalities found at pre-operative EGD

<table>
<thead>
<tr>
<th>Abnormality</th>
<th>Number</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total patients</td>
<td>523</td>
<td>100</td>
</tr>
<tr>
<td>Total of patients with an abnormality</td>
<td>266</td>
<td>50.9</td>
</tr>
<tr>
<td>Total abnormalities(^1)</td>
<td>489</td>
<td>-</td>
</tr>
<tr>
<td>Barrett’s esophagus</td>
<td>7</td>
<td>1.3</td>
</tr>
<tr>
<td>Bulbitis</td>
<td>23</td>
<td>4.4</td>
</tr>
<tr>
<td>Esophagitis</td>
<td>87</td>
<td>16.6</td>
</tr>
<tr>
<td>Gastric tumor</td>
<td>4</td>
<td>0.8</td>
</tr>
<tr>
<td>Gastric ulcer</td>
<td>5</td>
<td>1.0</td>
</tr>
<tr>
<td>Gastritis</td>
<td>127</td>
<td>24.3</td>
</tr>
<tr>
<td>HP positive (326 patients)</td>
<td>84</td>
<td>25.8</td>
</tr>
<tr>
<td>Other pathologies</td>
<td>27</td>
<td>5.2</td>
</tr>
<tr>
<td>Schatzki’s ring</td>
<td>11</td>
<td>2.1</td>
</tr>
<tr>
<td>Sliding Hernia diafragmatica</td>
<td>114</td>
<td>21.8</td>
</tr>
</tbody>
</table>

\(^1\) Some patients experienced more than one abnormality, total percentage more than 100.

Table 4: Consequences of pre EGD findings

<table>
<thead>
<tr>
<th>Abnormality</th>
<th>No consequences</th>
<th>HP(^1) eradication</th>
<th>PPI(^2) alone</th>
<th>Postponing operation</th>
<th>Cancel operation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N = 456</td>
<td>N = 109</td>
<td>N = 90</td>
<td>N = 6</td>
<td>N = 1</td>
</tr>
<tr>
<td>Barrett’s esophagus</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Bulbitis</td>
<td>5</td>
<td>11</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Gastric tumor</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Gastric ulcer</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Gastritis</td>
<td>65</td>
<td>35</td>
<td>23</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>HP positive</td>
<td>0</td>
<td>80</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Esophagitis</td>
<td>17</td>
<td>11</td>
<td>57</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Other pathologies</td>
<td>18</td>
<td>4</td>
<td>2</td>
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<td>0</td>
</tr>
<tr>
<td>Sliding Hernia diafragmatica</td>
<td>57</td>
<td>10</td>
<td>44</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

\(^1\) HP = Helicobacter Pylori
\(^2\) PPI = Proton Pump Inhibitor

Patient characteristics

Statistical analysis was therefore performed on the whole group with abnormalities (group B,C,D) compared to those without (A). Table 2 summarizes the clinical data of patients showing statistical significance for age and reflux symptoms (GERD). Patients who were older (mean of four years) and patients who experience GERD were more prone to abnormalities at preoperative EGD.
H. Pylori
A total of 326 patients were tested for H. Pylori, 84 (25.8%) tested positive. There was no association between H. Pylori infection and abnormalities at preoperative EGD except for bulbitis Table 5. No relation between infection with H. Pylori and consequences regarding surgical protocol was found. All patients were categorized as group B2 and received H. Pylori eradication therapy prior to surgery.

Remnant stomach
For bariatric surgery, lesions located in the remnant stomach are relevant since this part is inaccessible after LRYGB. Hence, proximal abnormalities up to the anastomosis remain accessible after surgery. 140 patients had an abnormality in the future remnant stomach, this is 26.8 percent of the total population. Patients only infected with H. Pylori without other abnormalities were not included in this number. No statistical significant relation could be identified Table 5.

Yield of screening and costs
In the current study a number of 2.0 (523/266) EGDs were necessary to find any abnormality in 2012 the costs of a single EGD without anaesthesia in day-care admission was around €300 ($401). The costs of routine EGD in all patients scheduled for primary bariatric surgery is €22,414 ($30,420) per clinically relevant lesion and €156,900 ($212,945) for the one major lesion that required cancellation of surgery.

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Discussion

Obesity in the Western World is evolving into epidemic proportion. This results in an increase in bariatric surgery for morbidly obese patients (5). With the gold standard currently being a LRYGB, the preoperative screening of the upper gastro-intestinal tract is considered of great importance since the remnant stomach is left in situ (6). The guidelines of preoperative screening include preoperative EGD (12,13). With the growing number of LRYGB surgery in the near future this will imply numerous EGDs that need to be performed and high associated costs (5). The burden for patients undergoing this invasive screening procedure should not be underestimated.

In the last decade, several research groups worldwide focused on the question about the necessity of the routine EGD. A wide range of endoscopic findings is discussed in these studies, not all of these findings are of clinical importance with respect to gastric bypass surgery and postoperative pathology of the remnant stomach. Clinically the most relevant question remains: is it possible to define a (sub) group of patients in which preoperative EGD can prevent adverse peri- and/or postoperative events? And: is it possible to identify lesions that are a contraindication regarding bariatric surgery? Is preoperative screening by means of EGD necessary?

In more than half of the patient population presented an abnormality was found. This is high for a diagnostic test, but no studies could be identified that described upper endoscopic screening in the normal population. However, the yield regarding alteration in operative management was low. Because of this low yield, the identification of patients who would benefit of the screening was difficult. Taking all abnormalities into account without regarding clinical consequences, age did show a clinical significant difference. This is consistent with the results of Munoz et al., but with a difference of four years no clinical consequence can be linked to this finding (11). In addition, reflux complaints were significant correlated to abnormalities in general but since the postoperative management already includes PPI treatment and the LRYGB is a good anti-reflux operation, this finding is of no clinical importance either (10).

The focus of the present study is especially on the future remnant stomach and duodenum since these areas are much more difficult to access after surgery. The regions proximal to the gastrojejunostomy (GJS) remain easily accessible, thereby causing no problems for the diagnosis and follow up of this segment (such as Barrett’s oesophagus). In 26.8 percent of
EGD prior to surgery
this population the abnormality was in the future remnant stomach, e.g. gastritis, bulbitis, gastric tumour and gastric ulcer. Infection with H. Pylori was not included because of the lack of screening in the early stage of this patient cohort. Moreover, EGD is not necessary to detect H. Pylori. In the present study, a single case of oesophagus carcinoma was detected at the preoperative EGD. However, the oesophagus is not part of the future remnant stomach and therefore stays accessible for postoperative EGD.

A positive correlation between patient factors and group C and D was absent. The low incidence of these findings made it impossible to perform statistical analysis. Group D existed of one patient (0.2% of the total population). Comparing other studies, a large variation in the reported clinical relevant findings was found ranging from 10 to 57 percent (8,15). Part of this variation could be explained by the lack of consensus between the different research groups about clinical relevant lesions. The study of Munoz et al. suggested screening every patient. However, lesions above the gastro-oesophageal junction (Barrett’s e.g.) were taken into account too (9). Only one small study suggests a significant correlation between symptoms and a clinically relevant outcome of the preoperative EGD (9). In this study only 15 patients (10%) had clinical relevant findings while 18 reported gastro-oesophageal symptoms. All other studies do not find such a correlation (8,9,17). Despite lack of evidence for symptoms as selection criteria, some surgical centres perform EGD or upper gastro intestinal radiography only in the symptomatic patients (10).

H. Pylori is associated with gastroduodenal ulcers and, untreated may cause perforation, bleeding or develop into malignancy (10). These possible postoperative complications of H. Pylori might justify preoperative H. Pylori screening (20). Seropositivity is not necessarily assessed by; infection can also be diagnosed with stool antigen or breathing test (21). This type of investigation is less invasive and less expensive. Prevalence of H. Pylori infection in patients undergoing bariatric surgery varies from 10-67% (12,22,23).

Considering malignancies, fundic gland polyps are seldom associated with degeneration and therefore considered a too low risk to justify resection (24). Literature proves that even though the prevalence of gastric carcinoma is low, it affects more men than women and it occurs at a higher age (>65 years). In general, obesity is a risk factor for malignancies

EGD prior to surgery
this population the abnormality was in the future remnant stomach, e.g. gastritis, bulbitis, gastric tumour and gastric ulcer. Infection with H. Pylori was not included because of the lack of screening in the early stage of this patient cohort. Moreover, EGD is not necessary to detect H. Pylori. In the present study, a single case of oesophagus carcinoma was detected at the preoperative EGD. However, the oesophagus is not part of the future remnant stomach and therefore stays accessible for postoperative EGD.

A positive correlation between patient factors and group C and D was absent. The low incidence of these findings made it impossible to perform statistical analysis. Group D existed of one patient (0.2% of the total population). Comparing other studies, a large variation in the reported clinical relevant findings was found ranging from 10 to 57 percent (8,15). Part of this variation could be explained by the lack of consensus between the different research groups about clinical relevant lesions. The study of Munoz et al. suggested screening every patient. However, lesions above the gastro-oesophageal junction (Barrett’s e.g.) were taken into account too (9). Only one small study suggests a significant correlation between symptoms and a clinically relevant outcome of the preoperative EGD (9). In this study only 15 patients (10%) had clinical relevant findings while 18 reported gastro-oesophageal symptoms. All other studies do not find such a correlation (8,9,17). Despite lack of evidence for symptoms as selection criteria, some surgical centres perform EGD or upper gastro intestinal radiography only in the symptomatic patients (10).

H. Pylori is associated with gastroduodenal ulcers and, untreated may cause perforation, bleeding or develop into malignancy (10). These possible postoperative complications of H. Pylori might justify preoperative H. Pylori screening (20). Seropositivity is not necessarily assessed by; infection can also be diagnosed with stool antigen or breathing test (21). This type of investigation is less invasive and less expensive. Prevalence of H. Pylori infection in patients undergoing bariatric surgery varies from 10-67% (12,22,23).

Considering malignancies, fundic gland polyps are seldom associated with degeneration and therefore considered a too low risk to justify resection (24). Literature proves that even though the prevalence of gastric carcinoma is low, it affects more men than women and it occurs at a higher age (>65 years). In general, obesity is a risk factor for malignancies
Morbid obesity is associated with inflammatory activity in the upper gastro-intestinal tract and (sliding) hiatal hernia. Esophagitis and gastritis can be treated with PPI without diagnostic EGD. All patients receive a six months course of PPI’s immediately after RYGB surgery because it seems to protect against the development of ulceration at the gastrojejunostomy (27,28). Considering the anti-reflux mechanism, RYGB seems an excellent anti-reflux treatment, making Nissen fundoplication not necessary (29).

Inoue et al. demonstrated in an experimental model of dietary induced carcinogenesis that RYGB reduces the risk of gastric cancer. Lack of direct contact with carcinogens, lower bile reflux and a lower bacteria concentration in the remnant stomach gastric content were possible explanations for this phenomenon (30).

The current study is a retrospective review of a consecutive database. The aim of this study was to assess the yield of preoperative EGD in patients selected for bariatric surgery and the consequences for surgery after abnormalities were found. The present study gives an overview of the results of 523 consecutive patients, screened at our institution and scheduled for primary LRYGB or LSG. The yield of clinically relevant pathology in EGD prior to scheduled bariatric surgery is very low with only 1 major finding in all patients. No subgroups could be identified and as a consequence the costs are high from bariatric point of view (7). With respect to the burden on patients, health care resources and logistics, the place of EGD in preoperative assessment for patients undergoing gastric bypass surgery is at least questionable.

To identify subgroups that would benefit from the screening, a larger patient population is needed.
References


