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Inside

REVIEW

Routine Preoperative EGD, UGI, and *H. pylori* Screening: Are They Necessary?

by TONY CHAN, MD; SHEELA PATEL; and AMIR MEHRAN, MD

INTRODUCTION

The prevalence of upper gastrointestinal (GI) symptoms in patients with morbid obesity has been reported to be higher than that of the general population,[1,2] although the exact extent to which this is more prevalent is debatable.[3,4] Bariatric surgery patients have traditionally been subjected to a battery of routine screening tests and studies. Some authors regard this approach as necessary since abnormal findings may not correlate with patient symptoms and may change operative management. Those favoring a more focused approach, however, have questioned the utility of this system. Citing costs, low yields, and clinical irrelevance of the majority of incidental findings, the latter group advocates selective preoperative testing for specific patient histories and symptoms or other clinical indications.

Routine preoperative *Helicobacter pylori* (*H. pylori*) screening, upper gastrointestinal imaging (UGI), and esophagogastroduodenoscopy (EGD) constitute three such controversial topics. In this review, we will examine the current evidence and perspectives on each modality as part of the preoperative workup of a bariatric surgery patient undergoing the Roux en Y gastric bypass (RYGB), vertical sleeve gastrectomy (VSG), or the adjustable gastric band (AGB).

H. PYLORI SCREENING AND ERADICATION: WHY?

The prevalence of *H. pylori* is between 20 and 50 percent in industrialized nations. It has been implicated in the development of gastritis, ulcers, and ultimately gastric cancer.[5]

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REVIEW

CATO SERIES

PSYCHIATRIC MEDICATIONS AND WEIGHT GAIN: A Review

by THOMAS ROSKO, MD

INTRODUCTION

Drugs used to treat psychiatric disorders have numerous potential adverse effects, including weight gain and associated metabolic abnormalities (e.g., glucose intolerance and dyslipidemia). Medication-induced weight gain might also predispose patients to hypertension and cardiovascular disease and make nonadherence with treatment recommendations more likely.

These side effects are especially troublesome for patients with obesity who already suffer from high rates of diabetes and cardiovascular disease. Furthermore, the use of psychiatric medication itself poses particular problems in the population with obesity. Proper medication dosing can be a clinical challenge, especially after bariatric surgery, when medication tablets often must be "crushed and floated" rather than swallowed intact. The bioavailability of crushed medication can differ substantially compared to the same medication swallowed whole, most notably for sustained-release formulations. Crushing a sustained-release tablet can result in very rapid bioavailability of the entire amount of drug in the tablet.

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Routine Preoperative EGD, UGI, and *H. pylori* Screening: Are They Necessary?

by TONY CHAN, MD; SHEELA PATEL; and AMIR MEHRAN, MD

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ABSTRACT

In patients with morbid obesity undergoing bariatric surgery, the prevalence of foregut symptoms as well as the necessity for routine performance of related preoperative screening tests remain controversial topics. In examining the evidence for three such modalities, upper gastrointestinal series imaging and endoscopy may be performed on a selective basis, whereas testing for and eradication of *Helicobacter pylori* can be carried out routinely. The greatest controversy, however, surrounds the role of preoperative endoscopy. Despite a higher rate of endoscopic abnormalities in these patients, the majority of these findings often do not affect the actual operative management. Hence, a selective approach toward preoperative endoscopy can be advocated as well. These recommendations will undoubtedly evolve with further maturation of data.

KEY WORDS

Bariatric surgery, preoperative testing, esophagogastroduodenoscopy, upper gastrointestinal series imaging, endoscopy, *Helicobacter pylori*

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Over the past decade, the European Helicobacter Study Group has published guidelines in the form of the Maastricht Consensus Reports regarding screening, diagnosis, and treatment of *H. pylori*. For the general population, *H. pylori* testing is recommended for all patients under 45 years of age with persistent dyspepsia not attributed to gastroesophageal reflux disease (GERD) or use of nonsteroidal anti-inflammatory drugs (NSAIDs). Testing should also be considered in patients on long-term proton pump inhibitor (PPI) therapy.[6] Diagnosis is accomplished either with urease breath or stool antigen tests, which have an overall accuracy of 96 and 91 percent, respectively.[7,8] Both tests are felt to have greater validity than serum antigen assays, which incidentally were not included in the Maastricht II and III consensus reports. However serology assays are easier to perform and have a reported sensitivity and specificity of greater than 95 percent if used in patients without atrophic gastritis or intestinal metaplasia.[9]

Treatment with oral antibiotics is recommended for all patients testing positive for *H. pylori* and who have peptic ulcer disease, low-grade mucosa-associated lymphoid tissue (MALT) lymphoma, or atrophic gastritis, as well as in those who are first-degree relatives of gastric cancer patients or have been on long-term PPIs for functional dyspepsia.[6,10] The treatment regimen typically involves triple therapy drug combinations, such as lansoprazole plus amoxicillin plus clarithromycin (Prevpac 1 dose BID for 14 days, Takeda Pharmaceuticals of North America, Inc.) or Bismuth subsalicylate plus metronidazole plus tetracycline (Helidac 1 dose QID for 14 days, Prometheus Laboratories Inc.).[11] They are available in prepackaged doses, with each "dose" being one normal-sized pill of each of the elements of the triple therapy.

H. pylori has been reported to have a higher prevalence in the population with obesity and is implicated in the development of marginal ulceration after laparoscopic RYGB.[12] Atrophic gastritis from untreated *H. pylori* leads to increased risk of gastric cancer, even in patients who have had lesions removed endoscopically. This risk diminishes with eradication.[13] The stomach remnant following a gastric bypass, however, would no longer be conveniently accessible, potentially leading to the development of undetectable gastric cancer. Therefore, routine *H. pylori* screening has been recommended by many authors, with some payers even requiring it before bariatric surgery.[14]

Other studies, however, have found that the prevalence of *H. pylori* in patients with obesity is comparable to that found in the general population. A retrospective review of patients undergoing laparoscopic RYGB identified 259 patients in whom 22 percent tested positive for *H. pylori*. This study also found no statistical difference in postoperative endoscopy findings between patients who had tested positive for *H. pylori* and those who tested negative. According to the investigators, although a larger sample size might have found a statistically significant difference, the sample size would have had to be in the thousands and would not have yielded a difference large enough to be clinically significant. They concluded that routine preoperative screening for *H. pylori* is unnecessary.[14] In addition, even though marginal ulcer rates following gastric bypass are higher in patients with *H. pylori*, this higher risk may still exist even if the pathogen is eradicated, leading one to question whether there is any utility in testing patients preoperatively, at least as far as marginal ulcers are concerned.[12]

Nevertheless, the practice of routine preoperative *H. pylori* screening, even for asymptomatic patients, can be recommended. Testing and treatment are relatively inexpensive and noninvasive and have been economically modeled and validated.[15–18] Successful treatment can lead to improved dyspepsia symptoms[19,20] and has been linked to regression of atrophic gastritis and, therefore, a lower risk of gastric cancer.[21–26] In addition, the gastric remnant is no longer easily accessible to EGD after RYGB, making postoperative diagnosis and surveillance of *H. pylori*-related ulcer disease and gastritis more difficult. Finally, since each treatment dose consists of three separate tablets, eradication of *H. pylori* may be more readily and conveniently accomplished prior to the operation.

ROUTINE UGI SERIES: WORTH THE RADIATION?

The incidence of abnormal radiographic findings in the population with morbid obesity has been reported to be higher than in nonobese patients.[27] The benefit of preoperative anatomical information was underscored by a study of UGI series in 174 bariatric surgery patients. The authors reported 74 (42.5%) hiatal hernias, two (1.1%) cases of esophageal dysmotility, and one (0.6%) case of partial gastric malrotation.[28] As esophageal dysmotility and hiatal hernias are both independently associated with an increased need for reoperation following AGB placement, the argument could be made for routine preoperative UGIs for better patient selection and counseling.[29]

Others, however, reserve UGIs for symptomatic patients or those with history of prior gastric surgery. Even though patients with morbid obesity may have more abnormal preoperative UGIs, these findings do not usually lead to actual changes in the patients' operative management.[30] Contrary to the prior study, improvements in GERD have been reported following AGB placement, conceivably making preoperative UGIs irrelevant even in that population.[31] A retrospective

study of 156 such patients found that only eight (5.1%) had abnormal findings that either changed the operative approach or delayed surgery. These findings included, among others, esophageal dysmotility, ulcers, and large hiatal hernias. Seventy patients (44.9%) had abnormal findings on UGI that did not have an impact on subsequent management. Most importantly, no patients were found to have absolute contraindications to surgery.[4] Another retrospective study of 657 patients undergoing gastric bypass and who had preoperative UGIs found similar results. In this group, 393 (59.8%) had normal studies. The remaining had a variety of abnormalities, such as hiatal hernias (41.7%), esophageal reflux (10.5%), Schatzki's rings (4.8%), and gastric ulcers (0.2%). The incidence of Barrett's esophagus (BE) in this group is unknown because information about any follow-up endoscopy was not mentioned. However, none of the abnormalities found on these UGIs resulted in any cancellations or delays in surgery. The authors further observed improvements in reflux and ulcer disease after gastric bypass.

In general, the current literature supports the omission of routine UGI studies prior to uncomplicated AGB or RYGB operations.[32] Whether or not the same holds true in the setting of vertical sleeve gastrectomy remains to be seen, as no relevant studies were available at the time of this review.

PREOPERATIVE ENDOSCOPY: PROACTIVE MEASURE OR CUMBERSOME BURDEN?

The 2008 guidelines set forth by the American Society of Gastroenterology (ASGE), recommend screening EGD in bariatric patients who have symptoms of GERD or dyspepsia.[33] In addition to its favorable safety profile, the evidence for a higher incidence of previously described symptoms, as well as esophagitis, dysmotility, and other abnormal endoscopies, have led many authors to advocate routine preoperative screening EGD in all bariatric surgery patients regardless of symptoms.[35–42]

A discussion of screening EGD, however, would be incomplete without considering its costs. The cost of an EGD in the United States may average around $2,000 per procedure,[34] and annually well over 200,000 bariatric operations are performed.[35] This expense would be justified if endoscopic findings frequently changed or improved operative management of bariatric patients. Recent evidence suggests that it may not be as often as previously thought. A retrospective study of 448 patients undergoing screening for EGD found that 141 (31%) had abnormal findings. However, in only 18 and 0.4 percent did these findings change the medical or surgical management, respectively.[36] The study documenting the safety of EGD and advocating its routine preoperative use did acknowledge that the majority of the abnormal findings reported did not affect the proposed operative management.[37]

Another retrospective report of 536 bariatric patients undergoing preoperative EGD found that endoscopic findings changed the operative plan in only 26 (4.9%) patients; these changes mostly consisted of adding a gastrostomy, a crural repair, concomitantly at the time of bariatric surgery.[46] One patient underwent an esophagectomy for Barrett's esophagitis, which, arguably, might have been found anyway if the EGD had been performed only for symptomatic patients.

This foreshadowed results from a 2006 study of 145 patients undergoing the laparoscopic AGB procedure. EGD found abnormalities in only 15 (10%) patients; four (2.8%) had esophagitis and eight (5.5%) had hiatal hernias. None of these findings altered the operative plan. More notably, it was found that 18 (12%) patients had gastroesophageal symptoms prior to endoscopy, and these symptomatic patients had a statistically significant increased risk of having abnormal endoscopic findings.[47]

And finally, in a recent Swiss retrospective report of 319 patients, only three percent of patients underwent a change in surgical management as a result of their endoscopic findings: seven patients (2.2%) were delayed because of peptic ulcer disease and two (0.6%) had prophylactic gastrectomies for polyposis. The authors subsequently stopped routine endoscopy on asymptomatic preoperative gastric bypass patients, electing instead to reserve EGD for symptomatic patients. Asymptomatic patients would be managed with postoperative PPIs for four weeks along with routine preoperative *H. pylori* testing and/or eradication, reasoning that this would treat all clinically relevant lesions normally found with endoscopy.[38]

Therefore, based on our review of current literature, routine preoperative EGD prior to uncomplicated AGB or RYGB may not be necessary. Even though patients with morbid obesity might have a higher rate of endoscopic abnormalities, the majority of these findings often do not affect the actual operative management. These recommendations may undoubtedly evolve with further maturation of data.

BARRETT'S ESOPHAGITIS: A UNIQUE SCENARIO

Barrett's esophagitis (BE) deserves special consideration as it constitutes a significant endoscopic finding. Its incidence in the population with morbid obesity has been reported to be as high as 5.8 percent.[39] Gastric bypass is known to improve GERD symptoms in the obese population and preferred by many over fundoplication.[40,41] Regression of Barrett's esophagus following gastric bypass, furthermore, has been described in the surgical literature.[42] In 557 RYGBs, BE was identified in 12 (2.1%) of the subjects on routine preoperative endoscopy. Postoperative endoscopy showed regression of metaplasia in 42 percent of these patients.[43] Since these outcomes are not uniform, screening endoscopies must continue after RYGB to ascertain progression to high-grade dysplasia and its associated risk of adenocarcinoma.[44] Should that occur in a patient who has already undergone RYGB, the remnant stomach would still be in place for use as an esophageal conduit. Remnant availability, however, is not the case following VSG. In addition, the natural course of BE after VSG, where GERD symptoms may continue, remains unknown.[45] Therefore, in patients with known BE, VSG may be contraindicated or should only be performed after extensive discussions of risks. In the latter case, routine preoperative and postoperative EGDs are mandatory.

CONCLUSIONS

In patients with morbid obesity undergoing bariatric surgery, the prevalence of foregut symptoms as well as the necessity for routine performance of related preoperative screening tests remain controversial topics. Upper gastrointestinal radiographic imaging may be performed on a selective basis, whereas testing for and eradication of *H. pylori* can be carried out routinely. Although patients with morbid obesity may have a higher rate of endoscopic abnormalities, routine preoperative EGD prior to adjustable banding or gastric bypass surgery may not be necessary as the majority of these findings often do not affect the actual operative management. The role of screening endoscopy prior to vertical sleeve gastrectomy has not been elucidated.

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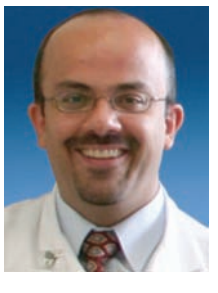

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