Communication from the ASGE Standards of Practice Committee

GUIDELINE

Role of endoscopy in the bariatric surgery patient

This is one of a series of statements discussing the utilization of GI endoscopy in common clinical situations. The Standards of Practice Committee of the American Society for Gastrointestinal Endoscopy (ASGE) prepared this text. In preparing this guideline, MEDLINE and PubMed databases were used to search for publications from the last 15 years that are related to endoscopy by using the keyword "endoscopy" and each of the following: "bariatric," "obesity," "gastroplasty," "gastric bypass," "Roux-en-Y," and "weight loss." The search was supplemented by accessing the "related articles" feature of PubMed with articles identified on MEDLINE and PubMed as the references. Pertinent studies published in English were reviewed. Studies or reports that described fewer than 10 patients were excluded from analysis if multiple series with more than 10 patients that addressed the same issue were available. The resultant quality indicators were adequate for analysis. The reported evidence and recommendations based on reviewed studies were graded on the strength of the supporting evidence (Table 1).

Guidelines for appropriate utilization of endoscopy are based on a critical review of the available data and expert consensus. Further controlled clinical studies may be needed to clarify aspects of this statement, and revision may be necessary as new data appear. Clinical consideration may justify a course of action at variance to these recommendations.

BACKGROUND

Obesity in the United States is a major health problem that contributes to increased morbidity and mortality and to a host of disease processes.[1,2] Body mass index (BMI) is calculated as weight/height^2 (kg/m^2) and is commonly used to classify overweight (BMI 25.0-29.9 kg/m^2) and obese (BMI $\geq$ 30.0 kg/m^2) adults. Based on data obtained from the National Health and Nutrition Examination Survey from 2003 to 2004, 61% of adults over the age of 20 years in the United States are overweight or obese, 32.2% are frankly obese, and 4.8% had a BMI $\geq$ 40 kg/m^2.[3] Furthermore, several studies showed that obesity is associated with an increased risk for morbidity and all-cause mortality.[4-7] In recognition of these risks and the evidence for risk reduction associated with weight loss,[8] the National Institutes of Health has recommended weight loss surgery as an appropriate alternative in carefully selected individuals with severe obesity (BMI $\geq$ 40 kg/m^2 or those with a BMI $\geq$ 35 kg/m^2 and with serious comorbid conditions) when dietary, behavioral, and pharmacotherapy interventions failed.[9]

Bariatric surgery results in durable and significant weight loss. The rising prevalence of obesity and the success of surgical interventions led to a marked increase in the number of weight-loss surgeries performed in the United States, from 13,365 in 1998 to 102,794 in 2003.[10] Early bariatric surgical techniques (eg, jejunoileal bypass) are no longer performed because they resulted in clinically significant and serious vitamin deficiencies, steatohepatitis, and even cirrhosis in some patients.[11] Instead, various procedures that cause weight loss through volume restriction, limited malabsorption and maldigestion, behavioral modification, or some combination thereof were developed. The most commonly used bariatric surgeries are laparoscopic or open Roux-en-Y gastrojejunal bypass (RYGB) and laparoscopic adjustable gastric banding (LAGB).[10,12] Other surgeries include vertical banded gastroplasty (VBG), and sleeve gastrectomy alone or with duodenal switch and biliopancreatic diversion (DS/BPD). It is useful to understand the anatomical alterations created by these operations as they pertain to the mechanisms for weight loss (Table 2, Figs. 1-3), expected complications, and considerations for endoscopic evaluation.

EVALUATION OF THE PREOPERATIVE PATIENT

The role of upper endoscopy in the preoperative evaluation of patients undergoing bariatric surgery may be based, in part, on the presence or absence of symptoms. The performance of an upper endoscopy in a patient with reflux symptoms, dysphagia, and/or dyspepsia has been covered in recent guidelines and is equally relevant in the preoperative patient.[13,14] However, because RYGB and DS/BPD render the distal stomach and/or duodenum inaccessible by a standard upper endoscope, the threshold for performing a preoperative endoscopic evaluation of the upper-GI tract is lower than for other surgeries.

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TABLE 1. Grades of recommendation*

Grade of recommendation	Clarity of benefit	Methodologic strength supporting evidence	Implications
1A	Clear	Randomized trials without important limitations	Strong recommendation; can be applied to most clinical settings
1B	Clear	Randomized trials with important limitations (inconsistent results, nonfatal methodologic flaws)	Strong recommendation; likely to apply to most practice settings
1C+	Clear	Overwhelming evidence from observational studies	Strong recommendation; can apply to most practice settings in most situations
1C	Clear	Observational studies	Intermediate-strength recommendation; may change when stronger evidence is available
2A	Unclear	Randomized trials without important limitations	Intermediate-strength recommendation; best action may differ depending on circumstances or patients' or societal values
2B	Unclear	Randomized trials with important limitations (inconsistent results, nonfatal methodologic flaws)	Weak recommendation; alternative approaches may be better under some circumstances
2C	Unclear	Observational studies	Very weak recommendation; alternative approaches likely to be better under some circumstances
3	Unclear	Expert opinion only	Weak recommendation; likely to change as data become available

**Adapted from* Guyatt G, Sinclair J, Cook D, et al. Moving from evidence to action. Grading recommendations: a qualitative approach. In: Guyatt G, Rennie D, editors. Users' guides to the medical literature. Chicago: AMA Press; 2002. p. 599-608.

TABLE 2. Mechanism of weight loss for common obesity surgeries

Procedure	Mechanism
VBG	Restrictive (Fig. 1A)
LAGB	Restrictive (Fig. 1B)
RYGB	Restrictive/maldigestive/behavioral modification (Fig. 1C)
Sleeve gastrectomy	Restrictive (Fig. 2)
DS/BPD	Restrictive/maldigestive (Fig. 3)

The rationale for performing an EGD before bariatric surgery is to detect and/or treat lesions that might potentially affect the type of surgery performed, cause complications in the immediate postoperative period, or result in symptoms after surgery. In particular, a recent meta-analysis showed that obesity was associated with a significantly increased risk of GERD, erosive esophagitis, and esophageal adenocarcinoma.[15] The value of a routine endoscopy before bariatric surgery in the patient without symptoms remains controversial because of limited observational studies in this group. However, the presence of a large hiatal hernia represents a relative contraindication to LAGB because of an increased risk for band slippage.[16] In addition, some surgeons advocate crural tightening in patients with a hiatal hernia when these patients are undergoing any weight loss operation.[17]

Multiple studies have been published that demonstrate that routine endoscopy before LAGB,[18,19] VBG,[20] and Roux-en-Y can identify a variety of pathologies, including hiatal hernia, esophagitis, and gastric ulcers. The majority of patients with pathology in these studies were asymptomatic. Importantly, no malignancies were identified, although, in 2 studies, the endoscopic findings resulted in an alteration of the surgical approach or a delay in surgery.[21,22] Guidelines from outside the United States recommend preoperative upper endoscopy in all patients before bariatric surgery, regardless of the presence or absence of symptoms.[23] Although an upper endoscopy in patients without symptoms can identify lesions that may alter surgical management, there are no studies that evaluated the effect of a preoperative endoscopy on surgical outcome. Contrast studies may be an alternative to an endoscopy and can provide complementary information to an endoscopy.[24]