

The Holy Grail of Bariatric Surgery: Which Patient Should Get What Procedure?



Robin Blackstone, MD
Scottsdale Bariatric Center,
Scottsdale, AZ

Patients are looking to science to give them their best shot at significantly reducing their excess weight, permanently. Several different procedures are available to an obese patient seeking surgical therapy. Currently, the procedures approved by the American Society for Metabolic and Bariatric Surgery and the American College of Surgeons include: adjustable gastric band (AGB), sleeve gastrectomy (SG), Roux-en-Y gastric bypass (GBP), and biliopancreatic diversion/duodenal switch (BPD/DS). Each procedure has risks and outcomes that have been reported in the peer-reviewed literature,^{1,2} but how does one apply a procedure to an individual patient? What is the burden of informed consent? How does direct-to-consumer advertising or internet advocacy affect patient procedure decisions? What is the role of the internet in educating or misleading patients? Who is choosing the procedure—the patient, the surgeon, or the health care plan? How are referrals handled when the patient goes to a surgeon who only offers one option for treatment? Do psychological factors play any role in selection? What is the measure of “success” in bariatric surgery? These important questions shape the discussion and debate about which patient should have what procedure.

Jane N. Buchwald
Viewpoint Editor

Director of Medical Writing & Publications
Medwrite Medical Communications, LLC

About the Article

The selection of the procedure most likely to aid a patient in his or her quest for long-term weight loss, comorbidity reduction, and improved quality of life is one of bariatric surgery’s greatest challenges. Successfully matching an approved procedure to a patient with his/her distinct medical and psychological characteristics is an art based on scientific outcomes. Numerous papers in the peer literature on this topic have contributed potentially predictive information. Some studies have organized their own findings (Dixon J, 2002; Mittempergher F, 2007) or the collective findings of the field (Buchwald H, 2002; Kelly J, 2009) into decision trees or algorithms that may bring improved clarity to the choice of an appropriate procedure. While each of these decision-making formulae, in turn, requires testing, the strategies of their construction and the outcomes on which they are based may aid surgeons in counseling patients considering surgery. Patient participation in procedure selection is also known to enhance postoperative compliance with the behaviors necessary for success with the chosen procedure.

In this period of rapid evolution of metabolic surgery, there will be novel operations to adjust for within even the most successful patient/procedure selection algorithm. Maximizing outcomes and the ability to predict them by procedure choice requires that the field move toward greater standardization of end points measured and reported. If there is a metabolic surgery Grail, it is likely to take the form of a set of principles that can be superimposed on evolving outcomes, rather than an unwavering picture of a single optimal procedure for a given patient. In this issue of *Viewpoint*, Dr. Robin Blackstone provides an experienced review of issues that are key to the patient–surgeon discussion of the procedure with “best fit” for their metabolic profile, risk tolerance, and individual goals.

Defining success: Those responsible for working with a patient on procedure selection need to have a clear understanding of the framework of success, one that can be individualized for each patient. This framework should encompass: remission or reduction of metabolic disease, anticipated weight loss, patient lifestyle preferences, risks of the procedures, permanence of weight loss, appearance, longevity in relation to quality of life and psychological outlook. A specific discussion of these factors with each patient should be documented in the initial assessment so that both the provider of care and the patient share a common understanding of the patient's expectations and choices.

Using the "Informed Consent" process as an education and selection tool: The surgeon must ensure that proper informed consent for the patient takes place. This means that a fair and accurate assessment of the options for treatment, including medical and behavioral options, should be presented in an unbiased and fair manner, with accurate statistics on risk and outcomes from the peer-reviewed literature. One metabolic "solution" does not fit all patients. A surgeon must know his/her own practice statistics and clearly understand and link them to the procedures he/she offers. Surgeons early in their experience, or who have a new program may not choose to tackle a high body mass index (BMI) or metabolically sick patient. Modern informed consent documents are extensive and specific to each procedure type. Education on the risks and benefits of specific bariatric procedures and documentation of patient participation strengthens the informed consent. For surgeons who perform only one surgical technique, the burden of proper informed consent is for them to present all the options for therapy before recommending a particular therapy to one patient. The lack of a balanced presentation of all options may have medical and legal implications.

In our experience, the initial motivating factors for a patient to request a certain procedure are often faulty. They may see an advertisement on television or converse on the internet with people who have undergone a procedure they are considering, or may have a co-worker or family member who has had a specific procedure, and from this information, may assume that this procedure is ideal for them as well. Currently, "ninja," or attack, techniques are being employed by commercially savvy programs: These tactics include encouraging bariatric patients to advocate for a specific procedure on the internet in "chat rooms." Advocates aggressively bully patients with claims based on their own experience and create unreal expectations. Although the internet has been the source of a tremendous boom in education of patients, it can also become a volatile and influential source of questionable health-care information. A good educational informed consent public seminar can help a patient dispel these myths and form a balanced idea about what elements will be important to them personally during a careful bariatric surgery decision-making process.

Metabolic factors relating to procedure choice: Each patient brings a unique mix of weight, age, and metabolic disease to the discussion of procedure choice. Using evidence-based metabolic outcomes coupled with a patient's individual psychological factors provides a solid framework for matching a patient to an appropriate procedure. In our center, we discuss not only the mortality (currently a rare event) associated with different procedures, but each patient's total metabolic burden, and we help them to understand why we believe this should significantly influence their procedure choice.

We discuss the effect of BMI, advising patients that AGB and SG, as stand-alone procedures, are most effective in BMIs less than 50 kg/m². Some patients have risk factors that predispose them to, or preclude them from, certain procedures: A patient with a history of allergy to plastic would not be advised to receive an AGB; a patient with chronic, genetically driven anemia would probably not be a good GBP patient; a patient with Barrett's esophagus would likely be contraindicated for GBP; and a binge-eating patient would not be advised to opt for AGB. Other risk considerations may relate to age: Younger patients may not wish to risk having a procedure that cannot be reversed easily; a patient with young children may not be best advised to receive SG or GBP.

An individual's risk tolerance is a critical factor in procedure choice. We discuss these risks, in addition to the statistics on mortality and surgical complications. For example, we would counsel patients that 25-30% of AGB recipients require an additional procedure, most for weight regain. With respect to SG, 3- and 5-year data are very thin at this time, and we cannot provide an abundance of long-term recommendations for this procedure yet. In considering GBP, long-term osteoporosis from calcium deficiency, anemia from B₁₂ deficit, or iron deficiency are probable, as well as development of hypoglycemia if a patient's behavior reverts to marked carbohydrate consumption. B₆ vitamin deficiency, with associated mentation difficulty and nerve problems, is also a likely outcome of GBP.

One of the most effective advances in technique that decreases risk is the use of the laparoscopic approach. Every patient is evaluated for the use of this type of access and recommended to have a laparoscopic procedure, if possible.

Comorbidities are also critical factors in considering the surgical procedure. Type 2 diabetes (T2DM), for example, is improved or resolved in a high percentage of patients undergoing any bariatric procedure. Achieving postoperative control of hyperglycemia frequently occurs in a cause-and-effect relationship with decrease in weight and percentage of body fat following surgery. Medically treated hyperglycemia, by contrast, does not control high blood glucose or ameliorate the progression of secondary complications of T2DM. Both the AGB and the SG work primarily through decreasing insulin resistance; whereas, it has been suggested that the bypass of the duodenum may change, and possibly cure, the actual disease of

T2DM. While still unproven, the importance of this possibility should be fully explained to any patient with significant T2DM considering a particular surgical procedure.

Psychological effect of procedure choice: Assessing patient psychology is one of the more controversial areas of pre-surgical evaluation. In our practice, we firmly believe in identifying patients who can comply with a course of care and the need for behavioral change to achieve long-term weight control. We perform psychological testing in addition to extensive interviewing all of our patients. As a result, 79% proceed to surgery with minimal psychological recommendations, approximately 21% require further psychological work prior to surgery, and a very few do not proceed to surgery.

Effect of health care plans: At the heart of health care plan “tinkering” with procedure choice is the refusal to see obesity for the disease that it is. Prejudice and discrimination couched in the language of “personal responsibility” continue to allow health plans and insurers to deny treatment of obesity to most of the patients affected by the disease. Insurers often fail to understand that even if there were a “stampede” of obese patients to surgical treatment, we would only be able to offer therapy to less than 1%. Although, some conscientious medical directors and health plans examine the scientific data carefully and design their benefits accordingly even they are unrealistic about the level of care it takes to change deeply ingrained behavior. Often the insurance benefit, if present, does not cover the extended family of providers (i.e., bariatrician, nutrition, psychologist) or the long-term follow-up necessary for continued support of behavioral changes. Examples of this include the lack of payment for AGB fills following the procedure, or DEXA scans after GBP.

Once surgeon and patient have decided on a procedure based on sound principles of preoperative testing, thorough discussion, awareness of outcomes data, and analysis of the personal effect specific procedure choice is likely to entail, defense of that choice should be made vigorously in the insurance pre-authorization letter.

Even achieving an optimal patient–procedure match is no guarantee: Despite a surgeon’s best efforts to match a patient with an optimal procedure, the patient may experience postoperative weight regain and recidivism. The possibility that this may occur must be understood and consented to in advance by the patient in writing. All procedures result in some failures; none can warrant against the changes in life that patients may experience. Having a robust follow-up program that features a “blameless environment” may allow you to impress on your patients that if they experience difficulty in the future they need to come back into the community of care for further treatment. Educating and working closely with the patient’s primary care physician will be helpful in maintaining patient accountability and long-term testing and followup.

Keeping the choice of procedure **patient focused** is the key. The surgeon has the responsibility of offering consultation and advice to the patient regarding his/her combination of characteristics, the risks of the recommended procedure, remission of comorbid disease, and factors that, *to the patient constitute success*. In the future, we may find that new biological and hormonal markers allow us to accurately and specifically choose procedures with a very high efficacy for an individual patient. In the meantime, we must rely on our most current data, surgical experience, and the art of our practice to lead patients toward sound decisions.

1. Buchwald H, Avidor Y, Braunwald E, et al. Bariatric surgery: a systematic review and meta-analysis. JAMA 2004;292:1724-37.

2. Sjöström L, Lindroos A-K, Peltonen M, et al. Lifestyle, diabetes, and cardiovascular risk factors 10 years after bariatric surgery. N Engl J Med 2004;351:2683-93.

About the Author

Robin Blackstone, MD, Surgeon and Director, Scottsdale Bariatric Center

Dr. Blackstone is Director of the Scottsdale Bariatric Center and Medical Director of the Scottsdale Healthcare Bariatric Program, both designated ASMBS Centers of Excellence. Dr. Blackstone leads an experienced multidisciplinary bariatric surgical team that has offered weight-loss surgery to over 4000 patients since 2001. She is an Associate Clinical Professor of Surgery with the University of Arizona School of Medicine-Phoenix, serves as Secretary/Treasurer for the ASMBS, and is a founding Board Member of the Obesity Action Coalition. Dr. Blackstone is a strong advocate of outcome-based medical practice, and is a leader in the movement toward a more standardized approach to bariatric surgery patient selection and complications reduction. In this month's *Viewpoint* column, Dr. Blackstone discusses the goal of bariatric surgery: finding the right procedure to achieve long-term success for each patient, with his or her unique combination of metabolic and personal characteristics.

