

ADVANCES IN ENDOSCOPY

Current Developments in Diagnostic and Therapeutic Endoscopy

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Evolving Techniques for Bariatric Surgery and Endoscopy



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G&H How common is bariatric surgery?

CT Bariatric surgery is common, with more than 200,000 procedures performed every year. Unfortunately, that number barely makes a dent in the number of people who are candidates for the surgery.

G&H What is the reason for that?

CT The reasons are multifactorial. Many patients are wary of bariatric surgery because of potential complications and because the procedure is perceived as being highly invasive. Bariatric surgery seems like such a major procedure that many people do not believe the risk is worth the potential benefit. Furthermore, only a limited number of centers perform the procedure and it is relatively expensive. Therefore, less than 2% of qualifying patients undergo surgery. Additionally, there are severalfold more patients who are obese, yet do not qualify for surgery.

G&H What are the qualifications for bariatric surgery?

CT A candidate for bariatric surgery needs to have a body mass index (BMI) of 35 or greater with a comorbid illness, such as diabetes, or a BMI of at least 40 without a comorbid illness. Several million people are categorized as having class 1 obesity (BMI of 30.0-34.9), and may also have comorbid disease, but still do not qualify for surgery according to the National Institutes of Health consensus statement and

other guidelines. For those people, lifestyle modifications (eg, diet and exercise) are the only options. These measures rarely are effective in the long run. These patients tend to become increasingly obese and more ill until they eventually qualify for surgery.

Most bariatric surgery is performed laparoscopically, with the potential to convert to open surgery in the case of complications. Endoscopic therapies provide an alternative option for patients who do not qualify for bariatric surgery or who prefer less invasive methods.

G&H Which endoscopic weight-loss procedures are currently available?

CT In the United States, the endoscopic devices that are approved by the US Food and Drug Administration are both intragastric balloons, of which there are single- and dual-balloon varieties. Endoscopic gastroplasty is also performed with an available endoscopic suturing device.

The intragastric balloon technique is relatively easy to execute. The endoscopist performs an upper endoscopy and inserts a tube similar to a nasogastric tube through the mouth and down alongside the endoscope. A fluid-filled balloon is then implanted in the stomach, where it remains for 6 months. People lose a substantial amount of weight in that time; studies report that patients are able to maintain the weight loss for a considerable period following removal of the balloon as well.

Endoscopic sleeve gastroplasty employs a suturing device that attaches to the end of an endoscope and is inserted

through the mouth into the stomach. The endoscopist uses the device to fold the stomach back in on itself, decreasing its volume. Because there is no implant, the endoscopist does not need to reverse the procedure.

G&H What are the complications or risks of the intragastric balloon procedure?

CT The balloon procedure is extraordinarily safe. The most common complaints are nausea and vomiting following the procedure. A small percentage of patients may need to have the balloon removed because they cannot tolerate the nausea; however, these side effects can usually be managed with standard medical care.

G&H Has there been any long-term research on the balloon technique?

CT Yes, there are several overseas studies on the balloons, as they have been available outside of the United States for more than a decade with more than 200,000 procedures performed. However, in the United States, studies are typically smaller and report either 6-month or 1-year outcomes.

G&H How much training is required to perform these procedures?

CT Both procedures are pretty straightforward. For experienced gastrointestinal endoscopists, the balloons are extremely easy to place and require minimal training; the learning curve is minimal as well. The suturing procedure requires a higher level of skill, and certainly there is a longer learning curve involved with that.

At my hospital, we train fellows to perform these procedures. Bariatric fellows are required to perform roughly 100 suturing cases, and they are able to implant and explant balloons before leaving the program. We are now trying to better understand how best to train practicing gastroenterologists. Many will attend courses to learn the procedures and experience hands-on training. Others will go to Centers of Excellence to shadow doctors and watch procedures being performed. They will then take those skills back to their centers and start a program. What is very important and should be emphasized is that an entire team is needed for these procedures. The expertise of a single doctor or a doctor and a nurse is not enough; patients need to have nutritionists, food psychologists, exercise physiologists, and, in some cases, endocrinologists involved. These procedures require a full-team approach.

G&H Who is the ideal candidate for one of these procedures? Are there any patients in whom these procedures should be avoided?

CT The ideal patient has a BMI of 30 to 40 and is committed to a lifestyle change. It is easy to eat through any procedure, so patients should be motivated to become active, exercise, and alter their diet. Patients should view these endoscopic procedures as a tool to help them lose weight, not as a silver bullet that ends the problem for them.

On the other hand, patients with prior gastric surgery should not have an intragastric balloon placed because these patients are at high risk for complications. Additionally, it is not clear how patients with BMIs greater than 40 would respond to these therapies; the literature is lacking on that information, and those patients are probably better served with a surgical procedure.

G&H Are these procedures likely to compete with bariatric surgery?

CT There is minimal overlap between patients who undergo endoscopic procedures and those who qualify for bariatric surgery. At the present time, the endoscopic procedures appear to work best in patients who have earlier stages of obesity, meaning a BMI of 30 to 40. Patients with a BMI of 30 to 35, or 35 to 40 without comorbid illness, are not surgical candidates; therefore, endoscopic procedures do not compete with bariatric surgery in these patients.

The question is whether patients who qualify for bariatric surgery (BMI >40) should undergo the surgery, or opt for endoscopic intervention instead. We do not know the answer to that question. Research has shown that bariatric surgery is effective, and these endoscopic interventions are new and less well understood in more advanced obesity. In the short term, patients who qualify for both procedures should still undergo surgery preferentially. What would be beneficial is a comparative study of the use of endoscopic interventions in patients who also qualify for surgery.

G&H How should patients be followed up?

CT The follow-up regimen depends on whether a patient had a balloon or suturing. Regardless, close continuity of care with a team of doctors and nutritionists is important. Some patients may require an exercise physiologist. Communication and meetings with the patients on a weekly basis, at least initially, should be implemented.

G&H Are repeat procedures necessary?

CT In Europe, where these devices have been available for a longer period, repeat balloon procedures as well as repeat suturing procedures are performed for patients who have lost a good amount of weight but need to lose more. Endoscopists may place another balloon after

1 year; some insert a balloon after 6 months when the first one is removed, although it is not approved for this in the United States. Repeat suturing on the stomach is performed on an as-needed basis.

G&H How are endoscopists being reimbursed for performing bariatric procedures?

CT Primary obesity procedures are currently on a fee-for-service basis; there are no specific procedure codes. Third parties are available to provide loans to the patients and then pay the hospital directly. However, no insurance companies are covering the endoscopic obesity procedures at this time, with the exception of revision procedures. Patients who have had a failed gastric bypass, perhaps owing to a dilated outlet or a fistula formation, and regained weight will often be reimbursed by insurance for endoscopic procedures.

G&H What advances in bariatric endoscopy do you foresee?

CT There are several devices that may allow for more aggressive weight loss, and it would be interesting to use those in combination with devices that allow bypass of small bowel. For example, an endoscopist can now perform a restrictive procedure on the stomach, or use a space-occupying device in the stomach and potentially perform a restrictive procedure on top of that. If endoscopists start combining these procedures or using them sequentially, we may be able to achieve weight-loss results

that are similar to those of bariatric surgery. Presently, the impact of endoscopic procedures, though substantial, is not as large as that of bariatric surgery.

Dr Thompson is a consultant for Apollo Endosurgery, Boston Scientific, Covidien, Olympus, USGI Medical, and ValenTx; is on the Scientific Advisory Board for Covidien, Fractyl, USGI, and ValenTx; has received research support from Aspire Bariatrics; and has an ownership interest in GI Windows.

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