

ADVANCES IN ENDOSCOPY

Current Developments in Diagnostic and Therapeutic Endoscopy

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Endoscopic Sleeve Gastroplasty for Obesity Management



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G&H Which endoscopic interventions are available to help manage obesity?

RS Several endoscopic interventions have been approved by the US Food and Drug Administration (FDA) to manage patients with obesity. In fact, 2 devices received FDA approval this past April. Plenity (Gelesis), a hydrogel capsule containing a cellulose and citric acid matrix, is taken with water. The capsule disintegrates in the stomach, allowing the matrix to fill the stomach and intestines and create a delay in food absorption. Thus, patients feel full and eat less. In the randomized, sham-controlled trial that led to its FDA approval, the capsule had superiority over the sham group. The second device is the TransPyloric Shuttle (BAROnova), which has a shuttle part attached to a gastric balloon that essentially causes intermittent gastric outlet obstruction. This device also showed superiority over the sham group in a randomized, sham-controlled trial, with patients experiencing more than 10% total body weight loss.

Endoscopic balloons are also available, with the most common being the Orbera Intra-gastric Balloon System (Apollo Endosurgery) and the Obalon Balloon System (Obalon Therapeutics). The Orbera balloon is both placed and removed endoscopically, whereas the Obalon balloon is placed via swallowing and then removed endoscopically. Results from a randomized, controlled trial show that an adjustable balloon (Spatz3 Adjustable

Balloon, Spatz Medical) demonstrated superiority over its sham counterpart. A fourth balloon device (Elipse, Allurion) is currently undergoing a randomized, sham-

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controlled trial. The device is swallowed, and, after 4 months, the valve disintegrates, the balloon deflates, and the device passes through the gastrointestinal system.

The AspireAssist (Aspire Bariatrics) is an aspiration device that is similar to a feeding tube, except the food contents are aspirated after each meal. The device has demonstrated durability for over 4 years if patients continue to aspirate. Finally, endoscopic sleeve gastroplasty (or the accordion procedure, as it is becoming known colloquially) is a procedure that can be performed using several suturing devices. Of note, the suturing devices were approved by the FDA for

tissue apposition but have seen use in the gastroplasty procedure.

G&H How is endoscopic sleeve gastroplasty performed?

RS Endoscopic sleeve gastroplasty is a 1-day procedure that is performed with an endoscope that has a suturing device attached or mounted onto it. An endoscopist makes a series of plications from the lower part of the stomach to the gastroesophageal junction (in a fashion similar to an accordion), reducing the volume of the stomach. This leads to restriction, decreased eating, and weight loss.

G&H What training is needed, and how significant is the learning curve?

RS Training is necessary for both the procedure itself as well as for managing obesity as a disease. Clinicians can learn to manage obesity by completing obesity boards or by being part of an obesity center that manages weight loss in collaboration with both surgeons and obesity-certified physicians. As for the learning curve, the procedure involves endoscopic suturing, which requires skill with the endoscope. Approximately 35 cases are necessary in order to be able to complete the procedure in under an hour.

G&H Who is the ideal candidate to undergo endoscopic sleeve gastroplasty?

RS The ideal candidate is someone who has a body mass index of 30 to 40 who has failed conservative obesity measures, or someone who has a body mass index greater than 40 who does not want to undergo surgery.

G&H How effective is this procedure in achieving sustained weight loss?

RS My colleagues and I presented our 5-year data at the Digestive Disease Week meeting in May. We demonstrated that endoscopic sleeve gastroplasty appears to be very effective at achieving sustained weight loss of greater than 15% at 5 years.

G&H What are the predictors of weight response?

RS We currently do not know the individual factors that will predict a response preprocedure. However, based on our research, if at 3 months postprocedure a patient has not achieved 10% or more of total body weight loss,

then it is unlikely that he or she will achieve adequate weight loss.

G&H How should patients who fail to achieve adequate weight loss with endoscopic sleeve gastroplasty be treated?

RS These patients can be treated several ways. One is with a multidisciplinary weight-loss program that includes nutritional counseling. Patients may wish to consult a bariatric surgeon to consider weight loss surgery, if necessary. Finally, there are several FDA-approved medications that can help aid or augment weight loss. These medications include single agents or combinations of metformin, phentermine, topiramate, and liraglutide, among others.

G&H What are the advantages and disadvantages of endoscopic sleeve gastroplasty compared with other endoscopic approaches for obesity management?

RS No head-to-head trials have been conducted comparing endoscopic sleeve gastroplasty to other endoscopic procedures or devices. Endoscopic sleeve gastroplasty does appear to be superior to balloons in sustaining weight loss at 5 years, is a single procedure, and is appealing to a lot of people. However, the procedure is technically not reversible like we used to think. Therefore, other nonstomach-altering devices such as balloons may be appealing.

G&H What adverse events are associated with endoscopic sleeve gastroplasty?

RS Based on more than 2000 cases worldwide, the risk of serious adverse events is less than 2%. Reported serious adverse events include bleeding, perforation, and fluid collecting in the perisplenic area that responds to interventional radiology drainage. Approximately 10% to 15% of patients experience nausea and some abdominal pain (eg, cramping), which are mild events that can be resolved with medications.

G&H What are the effects of endoscopic sleeve gastroplasty on obesity-related comorbidities?

RS My colleagues and I have previously demonstrated that endoscopic sleeve gastroplasty can lead to an improvement in high blood pressure, A1C levels in patients with diabetes and prediabetes, and waist circumference as a surrogate for metabolic syndrome. In

addition, alanine aminotransferase and aspartate aminotransferase levels are improved.

G&H Have any studies evaluated the length of stay associated with this procedure?

RS My colleagues and I assessed the length of stay associated with endoscopic sleeve gastroplasty and compared it to that of lap-band surgery and laparoscopic sleeve gastrectomy. Endoscopic sleeve gastroplasty has a length of stay of less than 1 day compared to 2 to 4 days for the surgical options, which is statistically significant.

G&H What are the long-term outcomes of endoscopic sleeve gastroplasty?

RS This is a topic that is still being studied. The 5-year data we recently reported show that weight loss of greater than 15% is sustained at 5 years, with improvement in comorbidities.

G&H How should patients be followed up?

RS Patients should be followed up as part of a multidisciplinary weight-loss program involving their primary care physician, an endocrinologist or an obesity specialist, and a gastroenterologist at regular intervals throughout the year. More importantly, patients should consult with a nutritionist, as several studies have shown that weight loss is improved when more nutritional context is provided.

G&H What research is needed in this field?

RS Mechanistically, we are still not completely sure how these endoscopic devices work, especially long term. Once we are able to predict who will respond, we can determine how to utilize these devices in the most effective way and offer procedures to different types of patients who present in the clinic.

Dr Sharaiha has no relevant conflicts of interest to disclose.

Suggested Reading

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