

ADVANCES IN GERD

Current Developments in the Management of Acid-Related GI Disorders

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Surgical Options for the Treatment of Gastroesophageal Reflux Disease



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G&H What surgical options are currently available for the treatment of gastroesophageal reflux disease?

TD Patients with severe gastroesophageal reflux disease (GERD) have several surgical options to manage their reflux burden. Nissen fundoplication, which prevents transient lower esophageal sphincter relaxations, involves a 360-degree wrap around the lower esophageal sphincter, whereas a Toupet fundoplication involves a 180-degree wrap. Both procedures have associated side effects, mainly persistent dysphagia (approximately 2% incidence), postprandial bloating (35%-40% incidence), and the inability to belch or vomit. Efforts to augment the function or competency of a failing sphincter easily and without side effects or the need for extensive alteration of the anatomy have led to the development of several sphincter augmentation devices. Transoral incisionless fundoplication with the EsophyX device (EndoGastric Solutions) is an approach to reconstructing a gastroesophageal valve using traditional anatomic principles of Nissen fundoplication. The main advantage of transoral incisionless fundoplication with EsophyX is that it is not an open laparoscopic operation. However, because it is performed endoscopically, there is considerable variability in the outcome. The LINX procedure (Torax Medical) prevents effacement of the sphincter, which occurs with gastric distension or nonpressurized gastric dilation, with minimal side effects and a persistent dysphagia rate of less than 1%. A lower esophageal

sphincter stimulator the size of a pacemaker (EndoStim, EndoStim BV) stimulates the sphincter electronically to increase its resistance to opening and is currently undergoing a clinical trial for the US Food and Drug Administration. The Stretta device (Mederi Therapeutics), which causes intramural fibrosis of the lower esophageal sphincter using radiofrequency energy in an attempt to reduce its compliance, appears to have some benefit, although controlled studies lack statistical difference compared to Nissen fundoplication.

G&H What goes into determining when to perform a procedure?

TD Determining which procedure to perform depends on how advanced the disease is and how well the symptoms are controlled by medical therapy. It is important to evaluate the status of the sphincter, as proton pump inhibitor therapy is likely to be more effective in patients with an adequate or near adequate lower esophageal sphincter. If a patient is not experiencing complete relief from medication, performing a sphincter augmentation procedure such as LINX can remove the need for medication or reduce the dose to a single tablet daily or every other day. If the lower esophageal sphincter is severely damaged, a Nissen procedure is usually required. Patients who desire to no longer take medication due to complications or concerns about side effects are ideal candidates for a sphincter augmentation procedure even if they are early in the course of their disease. Further,

sphincter augmentation procedures allow clinicians to treat a patient before he or she develops complications of GERD. An important sign that the sphincter may be failing is when the patient no longer responds to medication, and changes in dose or type of proton pump inhibitor provide minimal benefit in symptom relief.

G&H In which patients is surgery indicated for the treatment of GERD?

TD Patients who fail to respond or respond poorly to acid suppression therapy should consider surgery. Importantly, if a patient does not experience full relief of symptoms with medication early in the disease, the clinician should consider recommending a simplified procedure, such as sphincter augmentation, as opposed to repetitively increasing the drug dose. As experience with sphincter augmentation procedures increases, patients who have indications or a risk of progressive disease should be considered as surgical candidates early in the course of their disease. Surgery is contraindicated in a patient who has too great of an anesthetic risk due to pulmonary or cardiac function, or owing to another cause of concern.

G&H How effective is antireflux surgery?

TD Nissen fundoplication has a respectable outcome but should be performed by an experienced foregut surgeon whose major interest and practice focus on esophageal surgery. The operation does have side effects that the patient needs to be aware of; however, in most situations, the disease is so advanced that the discomfort of side effects is less of a concern than the severity of reflux symptoms. Presently, the LINX device has 5-year results with 2 methods of performing the operation: a focused dissection, in which there is very little to no alteration of the anatomy without a fundoplication, and a full dissection, which is similar to a Nissen operation but also does not utilize a fundoplication. The outcomes of these methods are similar, most likely due to the lack of a need for fundoplication. Both focused dissection and full dissection have a 72% to 74% normalization of pH and minimal side effects. In comparison, a Nissen fundoplication has a pH normalization rate of approximately 80%, although side effects are in the range of 40%.

G&H Have any cost-effectiveness analyses been performed for the LINX device?

TD The number of LINX procedures that have been performed is too low to conduct a cost-effectiveness analysis. However, the cost of the device is a factor that enters into the decision-making process. Although the device adds an additional cost to the operation, the cost may be recoverable if the device is used early in the course of the disease and the use of medication is reduced or eliminated. For example, placing the LINX device early in a patient who has mild structural failure of the sphincter could eliminate the cost of subsequent complications and offset the need for continued medication.

G&H What are the priorities of research?

TD It is necessary to start focusing on the 2 main components of GERD (ie, the sphincter function and the nature of the refluxed gastric juice) and how to characterize them simply and inexpensively. The role of bile is extremely important in the development of complications of GERD. Research is needed to investigate in greater detail what the consequences of bile reflux are when the pH of the refluxate is altered by acid suppression. This will require developing a simple method of measuring simultaneously the esophageal exposure to acid as well as bile. Similarly, a need exists to refocus on the sphincter in GERD therapy, as it is the major determinant of disease severity. To ignore the sphincter in an era of newly developed sphincter augmentation procedures is to miss opportunities to treat GERD more effectively with the potential of preventing complications.

Dr DeMeester is a paid consultant to Torax Medical and EndoStim BV.

Suggested Reading

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