# ADVANCES IN GERD

Current Developments in the Management of Acid-Related GI Disorders

Section Editor: Prateek Sharma, MD

## Management of Refractory Benign Esophageal Strictures

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### G&H What are the most common causes of esophageal strictures?

**PS** A variety of disorders can cause esophageal strictures, including both malignant and benign etiologies. Strictures can be a consequence of surgery, caustic ingestions, and radiation therapy. Stricture formation can also result from extended endoscopic mucosal resection and endoscopic submucosal dissection. Eosinophilic esophagitis is a newer etiology that can lead to esophageal strictures. Peptic strictures are caused by gastroesophageal reflux disease, but are nowadays less common due to the increased use of proton pump inhibitors. Schatzki rings appear to be related to reflux as well, and in some patients, they can also cause symptoms of dysphagia.

### G&H What defines a refractory benign esophageal stricture?

**PS** According to the definition that was published in 2005 in *Gastrointestinal Endoscopy*, refractory benign esophageal strictures are strictures that are unable to be successfully remediated to a diameter of 14 mm over 5 sessions performed in 2-week intervals. However, my practice adjusts the definition from 2-week intervals to twice-weekly intervals. It is important to note that the spectrum of strictures has changed over the last 10 to 15 years. In addition to refractory strictures, there are also recurrent strictures, which are the result of an inability to maintain a satisfactory luminal diameter for 4 weeks once the target diameter of 14 mm has been achieved. Recurrent strictures are more common than refractory strictures, but both exist on the same spectrum.

### G&H What therapeutic options are available to treat refractory benign esophageal strictures?

**PS** Several therapeutic modalities are available to treat refractory benign esophageal strictures. Dilation is the basis of stricture treatment, and can be combined with corticosteroids in order to prevent recurrent stricture formation and ease the continued use of dilation. Corticosteroids can be injected in the 4 quadrants of the stricture in doses ranging from 40 to 80 mg per session. However, this method has only been shown to be effective for peptic strictures. In anastomotic strictures, or strictures that develop following surgery, it is possible to perform incisional therapy. During this procedure, a needle knife is used to incise the stricture in different quadrants, thus opening the stricture. Stent placement can also be performed to keep the stricture open for a long time. Additionally, it is possible to teach some patients to self-dilate once or twice daily. The ultimate treatment is surgery; however, in my practice, my colleagues and I have only rarely had to resort to this method in the past 10 to 15 years, as we have mostly been able to manage esophageal strictures endoscopically, sometimes after an extended period of treatments.

### G&H How should the appropriate treatment be selected?

**PS** Currently, no guidelines exist regarding the management of refractory benign esophageal strictures. However, my colleagues and I have proposed an algorithm to follow for proper treatment (Figure). The first step is to perform at least 5 sessions of dilation with a

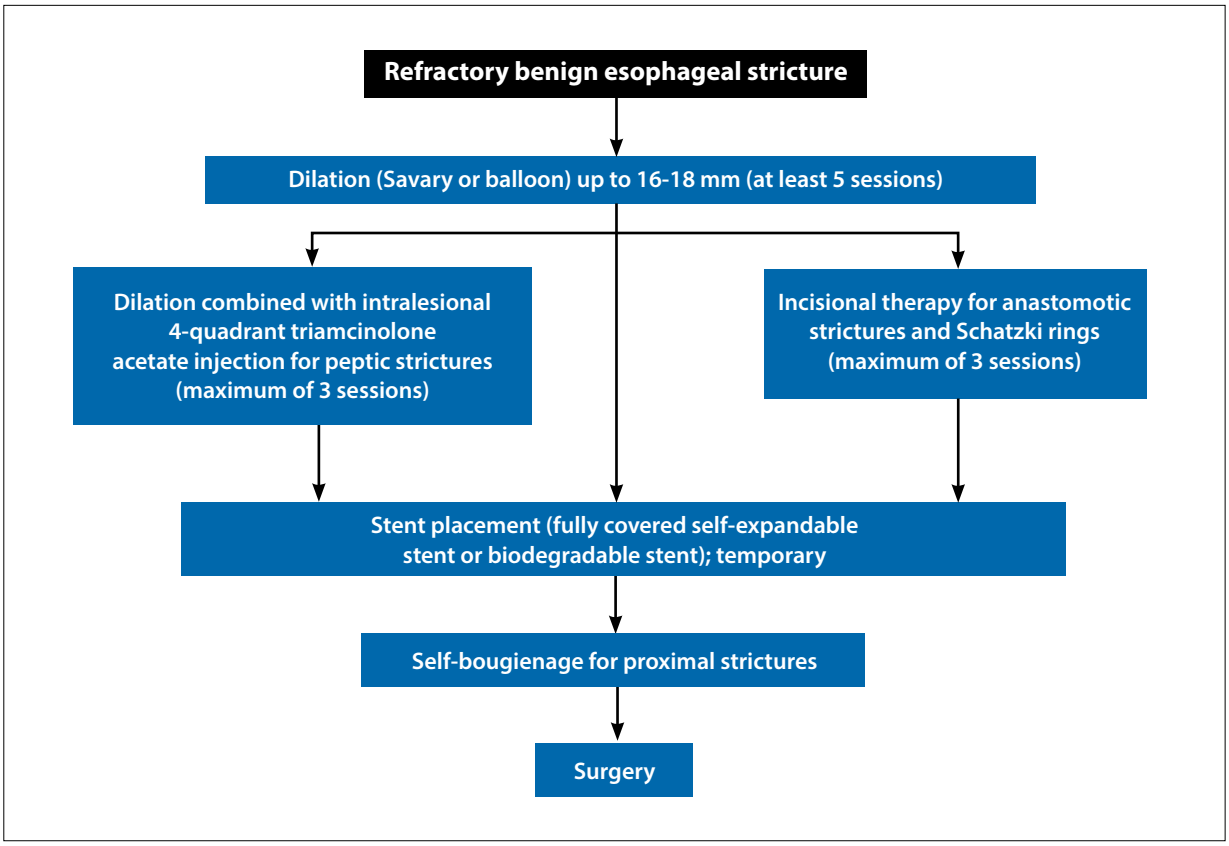


**Figure.** A treatment algorithm proposes the appropriate management of refractory benign esophageal strictures.

Savary (Cook Medical) or balloon dilator. If that is not effective, dilation can be combined with corticosteroid injections (for peptic strictures only; maximum of 3 sessions) or incisional therapy (for anastomotic strictures and Schatzki rings; maximum of 3 sessions). If those sessions are unsuccessful, there is a role for temporary stent placement with fully covered self-expandable stents or biodegradable stents, followed by self-dilation and surgery. However, some changes may be on the horizon. My colleagues and I will soon publish results of a study (already published in abstract form) demonstrating that using stents at an earlier stage increases the quality of life of patients as a result of fewer hospital visits needed as compared to visits needed for regular dilation.

### G&H How effective are dilation and stents for resolving dysphagia?

**PS** Dilation has been shown to be effective in at least 90% of patients, especially for those with simple strictures. Stents are effective in approximately 40% to 50% of patients with refractory benign esophageal strictures; the duration of the stent placement plays a role in the effectiveness of the treatment.

### G&H What approach should be taken to manage achalasia?

**PS** Studies have shown that both pneumatic dilation and Heller myotomy are equally effective modalities for managing achalasia. Pneumatic dilation is beneficial in patients who are older, are frail, and/or have a lot of comorbidities, whereas Heller myotomy has the potential to provide better long-term effects, thus making it ideal for younger patients. An alternative approach that is increasingly considered in patients of all ages is peroral endoscopic myotomy (POEM). However, comparative, randomized, controlled trials are needed to determine whether POEM is more effective than pneumatic dilation or Heller myotomy.

### G&H What do the data show regarding long-term results of refractory benign esophageal stricture management?

**PS** Study data report that 90% to 95% of patients achieve stricture resolution with appropriate management, although some patients will require dilation, including self-dilation, for years. Additionally, patients with caustic strictures, which usually have extended and complicated configurations, may require operation if endoscopic treatment is not sufficient.

### **G&H** What are the most common adverse events encountered when managing refractory benign esophageal strictures?

**PS** The adverse events differ according to which management approach is used. Dilation carries risks of perforation, bleeding, and bacteremia. The rate of perforation varies between 0.1% and 0.4%, and occurs more frequently in complex strictures. In general, it is accepted that the risk of perforation is minimal when the rule of three is applied, which states that no more than 3 bougie dilators of sequentially larger sizes should be passed in a single session once the dilator is met with resistance. However, some studies now suggest that in selected patients, clinicians can decide to dilate further and still have safe outcomes. It is important to note that in patients with malignant strictures, the risk of perforation is increased; therefore, the rule of three should be followed. Combining corticosteroids with dilation increases the risk of developing *Candida* esophagitis in the esophagus. Complications of incisional therapy include perforation (<1%) and bleeding. The most common complication with stent placement is pain, followed by stent migration from the esophagus to the stomach and hyperplastic tissue growth resulting from pressure on the wall of the esophagus by a stent.

### **G&H** What other treatment options are available to treat refractory benign esophageal strictures?

**PS** Over-the-scope clips and sewing can be used to adjust stents in the esophagus in order to reduce the risk of migration. Local treatment has the potential to improve the oxygenation of the tissue in strictures, which could lessen inflammation, thereby reducing the stricture formation; however, no treatment is yet available. In patients who have strictures formed after extensive mucosectomy, corticosteroids can be injected at the site of resection or used systemically, or polyglycolic acid sheets can be applied, to cover the defects in an effort to reduce the risk of stricture formation. In patients with short strictures (eg, anastomotic strictures), lumen-apposing metal stents have been used successfully.

### **G&H** What research is needed in this field?

**PS** It would be beneficial to have more data comparing Savary bougie dilation to balloon dilation. So far, there does not seem to be a noticeable difference between the 2 dilation techniques; however, the published trials have been limited or affected by bias. Comparison studies are also needed between ongoing dilation and stent placement. Additionally, more evidence is needed to determine the optimal type and length of stent, as well as whether stent placement during an earlier stage in the treatment algorithm is effective. Furthermore, a prospective, randomized study is needed to challenge the rule of three; it may be that clinicians are too conservative in dilating a stricture, and a study could help determine whether clinicians should be a little more aggressive. Lastly, new stent devices are needed; for example, different types of covered biodegradable stents would be very helpful.

*Dr Siersema has received research support from EndoStim, ELLA-CS, Yakult, Pentax, Norgine, OncoDNA, and W. L. Gore, and has served as a consultant for EndoStim.*

## Suggested Reading

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