

ADVANCES IN GERD

Current Developments in the Management of Acid-Related GI Disorders

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Management of Total Obstruction of the Pharynx and Upper Esophagus

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G&H How do patients develop total obstruction of the pharynx and upper esophagus?

HWB The most common cause of this condition is a reaction of the tissues in the pharynx and esophagus during and after chemoradiation treatment for head and neck cancer. Over time, the inflammatory response, which is an expected consequence of chemoradiation, can lead to closure of the lumen and scarring, resulting in a stricture and dysphagia or total obstruction and aphagia (the total inability to swallow food or fluid). Total obstruction can also occur following caustic injection or at anastomotic strictures after esophagectomy.

In addition to commonly developing mucositis or inflammation in the tissues of the pharynx and/or upper esophagus in response to chemoradiation, these patients will often experience pain while swallowing and, thus, will have difficulty swallowing both solids and liquids. Swallowing dysfunction can progress during and after therapy to the point of aphagia. The best indicators of swallowing dysfunction are the patient's inability to ingest an adequate number of calories and weight loss. Currently, most of these patients undergo a percutaneous endoscopic gastrostomy (PEG) either before or immediately following chemoradiation therapy to allow adequate nutrition by an alternative route.

G&H How long do symptoms present before total obstruction occurs?

HWB Since swallowing is often difficult and painful during and immediately after chemoradiation therapy while the pharyngeal and esophageal tissues are inflamed, the patient easily accepts the alternative feeding option via PEG. Unfortunately, the lack of liquid and solid food passing through the inflamed luminal tissue can allow the lumen walls to collapse and become adherent. Once this occurs, the fibrotic process may progress over several weeks or months, resulting in total obstruction and aphagia.

G&H What other effects does total obstruction of the pharynx and esophagus have on patients?

HWB In addition to causing nutritional problems and requiring the use of enteral feeding, total obstruction of the pharynx and/or esophagus produces insomnia and otherwise affects quality of life, particularly the ability to socialize and eat in public. The inability to swallow even saliva is also associated with an increased risk of pneumonia or pulmonary sequelae.

G&H How often does this condition occur, and why has it become more prevalent over the past decade?

HWB Total lumen obstruction of any cause occurs infrequently, most often following chemoradiation to the head and neck region with or without surgery. There are no good data on its prevalence, but increasing severity of dys-

phagia is an indication for complete radiographic and endoscopic evaluation to assess the need for swallowing therapy or early dilation to prevent total occlusion. In my experience, the increased frequency of total obstruction of the pharynx and esophagus over the past decade appears to be related to the use of both chemotherapy and radiation therapy as a standard treatment for head and neck cancer. This combined therapy has resulted in significant improvements in survival and cure, but it has been accompanied by an increased risk of total lumen obstruction.

G&H What is the most effective treatment for total lumen obstruction?

HWB The ideal treatment consists of preventative measures after the development of dysphagia. One such measure involves encouraging the patient to swallow as frequently as possible, as swallowing keeps the surfaces of the pharynx and esophagus separated, decreasing the possibility that they will adhere to each other. In some patients, dilation is the best treatment because it keeps the lumen open during the inflammatory and fibrotic healing phases following chemoradiation therapy, thus preventing total occlusion of the lumen. Swallowing therapy supervised by a speech pathologist/swallowing therapist should be encouraged. Once total obstruction occurs, the only effective treatment is endoscopic lumen restoration (ELR).

G&H How is ELR performed in these patients?

HWB When patients present with aphagia, they are initially evaluated for total obstruction by a speech pathologist and radiologist using a small volume (2.5 mL) of thin barium. The next step is evaluation via upper endoscopy as well as endoscopy from below, through the gastrostomy, in order to examine both sides of the obstructed segment. Once these initial procedures determine the length of the obstructed segment and the feasibility of lumen restoration, ELR is performed in an operating room under general anesthesia. In our practice, an otolaryngologist performs a rigid endoscopy through the mouth and a gastroenterologist performs a flexible endoscopy through the gastrostomy site. Various accessories are used to penetrate the stricture using a C-arm and triplane fluoroscopy to ensure proper axis orientation through the obstructed segment. Once this goal is accomplished, a guidewire or string is passed through the stricture to ensure access through the lumen for dilation. Serial dilations are then performed to open the lumen, first in a retrograde fashion using Tucker dilators and subsequently in an antegrade fashion through the mouth. Typically, dilations are per-

formed over several months to achieve an optimal lumen diameter; the patient must understand that ELR requires a significant time commitment with multiple clinic visits.

Postprocedure, the patient is followed by the gastroenterologist and speech pathologist/swallowing therapist who provides evaluation via modified barium studies and teaches the patient appropriate rehabilitative measures to restore swallowing to an optimal level. In our experience, this team approach—with a gastroenterologist, otolaryngologist, and speech pathologist/swallowing therapist—is most likely to result in optimal success.

G&H What are the outcomes of this procedure?

HWB My colleagues and I have treated over 30 patients with total obstruction of the pharynx and/or esophagus thus far. To date, half of our patients have improved from the inability to swallow anything to the ability to maintain a regular or soft diet, with no dependence on PEG for nutrition. An additional 15–20% of patients are able to swallow foods that are soft or pureed but are unable to ingest sufficient calories; thus, PEG feedings must be continued. Approximately one third of patients are unable to safely ingest sufficient calories by mouth, but they are usually able to swallow saliva and a small volume of clear liquids for oral comfort and hygiene. Their nutrition is permanently maintained via PEG.

G&H Is ELR becoming a standard treatment for patients with total obstruction of the pharynx and esophagus?

HWB The basic technique of ELR is not new and has been used for over 80 years. However, ELR has been performed in relatively few institutions in the United States and reports of this procedure have been published in the literature only sporadically. The largest experience with ELR was recently reported by a surgical group that treated 45 patients. These outcomes, reported by Goguen and associates, are comparable to the outcomes of our patients, with the exception of fewer complications in our group. Other ELR publications from several institutions in the United States consist of confirmed reports that usually involve 1 or 2 patients.

Because this procedure is not yet performed in most institutions, many physicians and patients suffering from aphagia are unaware of it. On average, the patients treated at my institution had been unable to swallow anything by mouth for over 1 year prior to presenting for evaluation. The longest duration of aphagia prior to a successful lumen restoration in our series was 9 years. The duration of the inability to swallow does not predict the likelihood of success for ELR.

Thus, it is important that physicians inform their patients of the availability of this technique, which has proven to be reasonably successful at restoring the ability to swallow and eat and is safe in our experience, as it is associated with relatively few complications and no deaths. Although the procedure involves a long-term commitment from the patient (typically, several months for optimal results) and challenges for travel and expense, all of our patients who have obtained even partial success have been extremely pleased.

Suggested Reading

- Goguen LA, Norris CM, Jaklitsch MT, et al. Combined antegrade and retrograde esophageal dilation for head and neck cancer-related complete esophageal stenosis. *Laryngoscope*. 2010;120:261-266.
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