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PROFESSIONAL UPDATE: GASTROENTEROLOGY

In health, the cells that line the tubular esophagus ordinarily are squamous cells. However, prolonged exposure to gastric and duodenal content via pathologic gastroesophageal reflux can cause metaplastic changes in the esophageal epithelium. Barrett's esophagus occurs when there is a metaplastic change from a squamous-lined epithelium to a columnar-lined epithelium with goblet cells, resembling small intestinal mucosa.

Age, Caucasian race, obesity, and longstanding gastroesophageal reflux disease (GERD) are the main risk factors for Barrett's esophagus. Patients who experience GERD symptoms for 10 years or more have a much greater risk of developing the disorder. Those suspected of Barrett's are diagnosed and monitored with endoscopy.

Barrett's esophagus affects about 1 percent of adults in the United States (Barrett's is uncommon in children). Men over age 50 develop Barrett's esophagus twice as often as women, and Caucasian men are affected more frequently than men of other races.

Esophageal cancer is the most rapidly increasing cancer in the U.S. today due to a dramatic increase in acid reflux disease and Barrett's esophagus. About one in 200

Barrett's esophagus

New treatments improve outcomes

By Robert A. Ganz, MD

Barrett's patients will develop adenocarcinoma of the esophagus in their lifetime.

Treatment is usually recommended when Barrett's patients develop dysplasia, a genetic abnormality of the cells that significantly increases the likelihood of esophageal cancer. Depending on the extent of abnormal cells, the affected area eventually may need to be treated, or even removed.

New treatments

There are several new treatments available for Barrett's esophagus, including endoscopic mucosal resection and balloon-based radiofrequency ablation (RF). These endoscopic ablative therapies are highly successful and are now routinely applied to Barrett's patients, who in the past would have been referred for esophagectomy.

Endoscopic mucosal resection. Endoscopic mucosal resection (EMR) is typically used for resecting nodular areas of Barrett's esophagus that contain high-grade dysplasia. The technique involves suctioning areas of Barrett's esophagus into a friction-fit cap that is

attached to the tip of the endoscope. The suctioned tissue is banded at the base, using a standard variceal banding technique and device. Snare cautery is then applied, using a standard polypectomy snare, and the tissue is removed and retrieved.

The advantage of EMR is that an entire bloc of tissue can be removed to the level of the esophageal submucosa, ensuring a large histologic sample, as well as adequate removal of a localized lesion. Endoscopic mucosal resection is not typically applied to nondysplastic areas of Barrett's esophagus because of potential—albeit rare—adverse events, including esophageal perforation and post-EMR bleeding.

Radiofrequency ablation. Balloon-based radiofrequency ablation, or the HALO procedure (patented by Bârxx Medical, Inc.), is a new modality for the treatment of Barrett's esophagus that uses an electrical radiofrequency-generating coil wrapped around a balloon. With the HALO technique, the inner diameter of the esophagus is accurately

sized via a pressure-volume sizing step, and an appropriately sized HALO RF balloon is then introduced into the esophagus and positioned in the region requiring ablation. The HALO ablation balloon is then expanded in the esophagus to tightly press the electrical coil against the area of abnormal esophagus. The injury from the HALO balloon is superficial, penetrating to the level of the muscularis mucosa or, at most, superficial submucosa.

The HALO technique has proven quite successful in ablating Barrett's esophagus. Recent publications document a 90 percent to 98 percent success rate in eliminating Barrett's esophagus with re-epithelialization of normal squamous mucosa. Because the injury is so superficial, the technique is very safe and often painless, and can be applied to nondysplastic as well as dysplastic Barrett's epithelium.

Endoscopic mucosal resection and HALO therapy are often used in conjunction, with EMR applied to nodular areas, followed by HALO treatment of residual flat Barrett's. ❏

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