

Endoscopic mucosal resection before radiofrequency ablation is equally effective compared with RFA alone

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A new study shows that endoscopic mucosal resection (EMR) before radiofrequency ablation (RFA) is a safe and effective treatment option for patients with nodular Barrett's esophagus (BE) and advanced neoplasia. The performance of EMR before RFA was not associated with a diminished likelihood of success of therapy or an increased rate of stricture compared with those with advanced neoplasia undergoing RFA alone. The study appears in the October issue of *GIE: Gastrointestinal Endoscopy*, the monthly peer-reviewed scientific journal of the American Society for Gastrointestinal Endoscopy (ASGE).

Barrett's esophagus is a [precancerous condition](#) associated with cancer of the esophagus, a condition with a marked increase in incidence over the past four decades. BE with high-grade dysplasia (HGD, [abnormal cells](#)) may progress to cancer in as many as 20 percent of [patients](#) per year. Similarly, BE with intramucosal [carcinoma](#) (IMC) is a high-risk lesion in the absence of disease altering therapy. Radiofrequency [ablation](#) is a safe and [effective therapy](#) for the eradication of nonnodular dysplastic BE. However, many patients with HGD or IMC have nodularity (a small mass of tissue in the form of a knot, swelling or protuberance, either normal or pathological) in their BE segment. EMR is commonly performed to remove these nodular areas before treatment with RFA. Although RFA and EMR are frequently performed, their safety and efficacy are poorly understood.

"The aims of this study were to compare the safety and efficacy of combined EMR/RFA treatment for nodular BE with that of treatment with RFA alone for nonnodular BE. We assessed whether preceding EMR leads to either a higher [complication rate](#) or decreased efficacy in comparison with patients requiring RFA alone," said study lead author Nicholas Shaheen, MD, MPH, University of North Carolina, Chapel Hill. "In patients treated with EMR before RFA for nodular BE with HGD or IMC, no differences in efficacy and safety outcomes were observed compared with RFA alone for nonnodular BE with HGD or IMC. EMR followed by RFA is safe and effective for patients with nodular BE and advanced neoplasia. To our knowledge, this study represents the largest published cohort of patients with BE and advanced neoplasia treated with EMR before RFA for nodular BE."

About EMR and RFA

EMR is a technique in which superficial abnormal tissue is resected (removed) endoscopically from the deeper tissue layers. The abnormal tissue can then be sent to a pathologist for evaluation. Mucosal ablative techniques are methods of destroying the superficial lining, or "mucosa," of the gastrointestinal tract. This is usually done when there are precancerous changes which need to be treated. Once the superficial, diseased mucosal layer is destroyed, a new, healthy layer regenerates. A newer method of ablation is called radiofrequency ablation. One radiofrequency device has been developed specifically for ablation of Barrett's esophagus. This is a cylinder shaped balloon passed over a guidewire. Once in position, the balloon is inflated, bringing its wall into contact with the precancerous Barrett's mucosa. The physician presses a foot pedal and radiofrequency energy is delivered over the entire surface area of the balloon. The delivery of the energy takes about one second and results in a very superficial burn of the esophageal lining. Once the Barrett's tissue sloughs off, a new, healthy esophagus lining grows back.

Methods

The study objective was to determine the efficacy and safety of EMR before RFA for nodular BE with advanced neoplasia (high-grade dysplasia or intramucosal carcinoma). It was a retrospective study conducted at the University of North Carolina Hospitals from 2006 to 2011. A total of 169 patients with BE with advanced neoplasia were included in the study: 65 patients treated with EMR and RFA for nodular disease and 104 patients treated with RFA alone for nonnodular disease. The main outcome measurements were efficacy (complete eradication of dysplasia, complete eradication of intestinal metaplasia, total treatment sessions, and RFA treatment sessions), and safety (stricture formation, bleeding, and hospitalization).

Results

EMR followed by RFA achieved complete eradication of dysplasia and complete eradication of intestinal metaplasia in 94 percent and 88 percent of patients, respectively, compared with 82.7 percent and 77.6 percent of patients, respectively, in the RFA-only group. The complication rates between the two groups were similar: 7.7 percent vs 9.6 percent. Strictures occurred in 4.6 percent of patients in the EMR-before-RFA group compared with 7.7 percent of patients in the RFA-only group.

The researchers concluded that RFA after EMR is a safe and effective [treatment option](#) for patients with nodular BE and advanced neoplasia. In this cohort, the performance of EMR before RFA was not associated with a diminished likelihood of success of therapy or an increased rate of stricture compared with those with advanced neoplasia undergoing RFA alone. The researchers noted that further studies are necessary to determine the effects of EMR before RFA on the durability of RFA

treatment and to determine the effects of multiple EMR sessions on RFA outcomes.

In an accompanying editorial, David E. Fleischer, MD, Division of Gastroenterology, Mayo Clinic in Arizona, Scottsdale, stated "...this well-designed and well-executed study provides information for safety and efficacy and that allows us to continue to follow these now accepted treatment strategies with more comfort that one is doing the right thing."

Provided by American Society for Gastrointestinal Endoscopy

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