

Radiofrequency ablation and complete endoscopic resection equally effective for dysplastic Barrett's esophagus

May 21 2014

According to a new systematic review article, radiofrequency ablation and complete endoscopic resection are equally effective in the short-term treatment of dysplastic Barrett's esophagus, but adverse event rates are higher with complete endoscopic resection. The article comparing the two treatments appears in the May issue of *GIE: Gastrointestinal Endoscopy*, the monthly peer-reviewed scientific journal of the American Society for Gastrointestinal Endoscopy (ASGE).

Barrett's esophagus is a condition in which the lining of the esophagus changes and becomes more like the lining of the small intestine. It is believed that Barrett's esophagus (BE) occurs because of chronic inflammation resulting from long-standing Gastroesophageal Reflux Disease (GERD). Barrett's esophagus is more common in Caucasian males older than the age of 50 who have had GERD for greater than five years. Most patients with Barrett's esophagus will not develop cancer. However, in some patients further precancerous change in the tissue, called dysplasia, will develop. Those patients that develop dysplasia, especially high grade dysplasia, are significantly more likely to develop esophageal cancer.

Esophagectomy (surgery to remove part or all of the esophagus) has previously been the recommended [treatment](#) for BE with high grade dysplasia (HGD) or intramucosal cancer (cancer limited to the most superficial layer of the esophagus), but this surgery is associated with

significant morbidity and mortality. As a result, endoscopic therapies for treatment of HGD or superficial cancers have been developed which minimize treatment-related morbidity. Ideally, endoscopic treatments need to target the entire segment of Barrett's mucosa (lining of the esophagus) in order to maximally reduce the risk of developing [esophageal cancer](#).

To date, two distinct endoscopic approaches have been widely used for this purpose. The first is complete endoscopic mucosal resection (EMR) where the BE mucosa is resected or removed endoscopically. This has the advantage of providing a large histologic specimen, which can then be evaluated for unrecognized, more advanced pathology, and may be curative. The other approach is ablation of the BE mucosa by using a variety of techniques such as photodynamic therapy, argon plasma coagulation (APC), and more recently, [radiofrequency ablation](#) (RFA). RFA uses a focal heat process to destroy the Barrett's tissue. In recent years, RFA has become the ablative treatment of choice in the management of dysplastic BE, with early studies suggesting excellent efficacy and low rates of [adverse events](#).

"Only one trial to date has directly compared complete EMR and RFA in treating dysplastic BE. The aim of this systematic review was to compare the efficacy and safety of these two techniques. This is important because RFA is substantially more expensive than complete EMR and may require multiple procedures over six months or more, making it less acceptable to patients. Therefore, in order to justify the use of RFA in the future it must be convincingly proven to be superior to complete EMR, in terms of both efficacy and risk of adverse events," said study lead author Georgina Chadwick, MRCP, The Royal College of Surgeons of England. "We found that RFA and complete EMR are equally effective in the short-term treatment of dysplastic BE, but adverse event rates are higher with complete EMR."

Methods

This article was a [systematic review](#) of literature to compare the efficacy and safety of complete EMR and radiofrequency ablation in the treatment of dysplastic BE. Patients had a diagnosis of BE with HGD or intramucosal cancer treated with either complete EMR or RFA. Main outcome measurements included complete eradication of dysplasia and intestinal metaplasia at the end of treatment and after more than 12 months' follow-up, as well as short and long-term adverse event rates associated with either treatment.

Results

A total of 22 studies met the inclusion criteria. Only one trial directly compared the two techniques; most studies were observational case series. Dysplasia was effectively eradicated at the end of treatment in 95 percent of patients after complete EMR and 92 percent after RFA. After a median follow-up of 23 months for complete EMR and 21 months for RFA, eradication of dysplasia was maintained in 95 percent of patients treated with complete EMR and 94 percent of patients treated with RFA. Short-term adverse events were seen in 12 percent of patients treated with complete EMR, but in only 2.5 percent of those treated with RFA. Esophageal strictures were long-term adverse events in 38 percent of patients treated with complete EMR, compared with 4 percent of those treated with RFA. Progression to cancer appeared to be rare after either treatment, although follow-up was short.

The authors concluded that both complete EMR and RFA have proven efficacy in eradication of BE with HGD or intramucosal cancer, but both short and long-term adverse events are significantly greater after complete EMR. The results of this review suggest that RFA, with prior resection of any nodules, is the endoscopic treatment of choice for

dysplastic BE. But further research needs to be done to prove the long-term durability of both treatments in order to confirm their superiority over surgery in the management of dysplastic BE. Though low, the risk of recurrence of dysplasia and intestinal metaplasia after treatment reiterates the need for continuing endoscopic surveillance. Further research needs to determine the optimal surveillance regimen after successful eradication.

Provided by American Society for Gastrointestinal Endoscopy

Citation: Radiofrequency ablation and complete endoscopic resection equally effective for dysplastic Barrett's esophagus (2014, May 21) retrieved 27 April 2024 from <https://medicalxpress.com/news/2014-05-radiofrequency-ablation-endoscopic-resection-equally.html>

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