



## SPECIAL NEWSLETTER

Barrett's Esophagus

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# Emerging Approaches in the Endoscopic Management of Barrett's Esophagus and Esophageal Cancer

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Barrett's esophagus is estimated to be at present in approximately 1-2% of Americans and is the precursor to esophageal adenocarcinoma. Barrett's is characterized by changes that can be seen on both endoscopy and pathology. On standard endoscopy, Barrett's is characterized by a pinkish-orange ("salmon-colored") lining that extends above the junction separating the esophagus and stomach (the "gastroesophageal junction"). On a microscopic level, Barrett's esophagus is characterized by replacement of the normal squamous epithelium by a specialized lining that resembles the small intestine. This epithelium, known as "intestinal metaplasia" progresses to cancer through an intermediate stage known as dysplasia. Dysplasia is characterized by a variety of microscopic changes that can be graded by a pathologist to better characterize an individual's risk of progressing to cancer. When dysplasia is severe, it can be treated through an endoscope by a gastroenterologist specializing in the management of Barrett's esophagus. In fact, both dysplasia *and early cancers* can be treated using an endoscope, preventing the onset of invasive cancer and sparing the patient major surgery. Most of these procedures are done in the outpatient setting and without general anesthesia. Patients are typically discharged home on a soft or liquid diet (milkshakes, pudding) and, in most cases, with minimal, if any, discomfort.

## Emerging Treatments for Barrett's Esophagus and Early Esophageal Cancer

Emerging procedures for the treatment of severe (or "high grade" dysplasia) and early cancer include **endoscopic mucosal resection, radiofrequency ablation, and cryoablation**. Endoscopic mucosal resection (EMR) involved the targeted removal of the superficial layers of the esophagus by a technique of lifting and cutting, similar to polypectomy in the colon, but with use of a cap for elevating the flat (non-polypoid) lining of the esophagus. Focal areas of dysplasia or cancer can be removed and multiple resections performed adjacent to one another to remove a more extensive 'swath' of the esophagus. The technique was pioneered in Japan but is being practiced in several specialized centers in the United States. Reported results have been excellent with low morbidity and mortality and excellent long-term survival, particularly when the technology is used in conjunction with ablative modalities that remove any residual Barrett's lining.

For ablation of Barrett's with dysplasia (high grade dysplasia and certain cases of low grade dysplasia), radiofrequency ablation (RFA) is becoming a safe and effective option. Indeed, a large study published in the *New England Journal of Medicine* in 2009 showed an 81% and 90.5% eradication rate for high and low grade dysplasia, respectively ([Supporting paper](#)). A more recent ablative modality is endoscopic cryoablation. Although the technology is not as well studied as RFA, cryoablation has shown promise in the treatment of both dysplasia (precancer) in Barrett's esophagus as well as early cancer.

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### Advanced Imaging: Early Detection is the Key to Minimally Invasive Therapy

To be able to use endoscopic therapy such as EMR, gastroenterologists need to identify precancerous changes (dysplasia) or cancer when confined to the superficial layers of the esophageal wall. If cancer has penetrated into the deep layers, endoscopic therapy is ineffective and unfeasible. Dramatic advances in endoscopic imaging are now giving gastrointestinal endoscopists the ability to detect dysplasia and cancer at a microscopic level. Confocal microendoscopy is a revolutionary imaging technology that provides 1100x magnified images of the esophageal lining in real time. The image seen by the gastroenterologist in real-time is at a subcellular level and resembles that seen by a pathologist. The difference in confocal microendoscopy is that this “pathology-like” image is obtained without removing a piece of tissue. An example of a confocal microendoscopic image is shown in Figure 1. Confocal microendoscopy can potentially be used to facilitate early detection of cancer (especially when combined with fluorescent stains that specifically target cancer). In addition, confocal and other microendoscopic technologies can be used to facilitate immediate treatment by providing a real-time diagnosis.

The attached case reports show the potential of these endoscopic therapies when combined with high-resolution imaging modalities ([Case Report 1](#) , [Case Report 2](#)). Although esophageal cancer rates continue to rise worldwide, these exciting advances provide much cause for optimism.

#### Additional Supporting Articles

- [Computer-Assisted Brush-Biopsy Analysis for the Detection of Dysplasia in a High-Risk Barrett’s Esophagus Surveillance Population](#)
- [Optical molecular imaging for detection of Barrett’s-associated neoplasia](#)

## Other Articles of Interest

### GOT GERD?

Many of us suffer from heartburn and acid reflux, and many people are taking medications to treat the symptoms of these conditions. But could treating those symptoms be masking a more serious problem? Dr. Randy Martin met with Dr. Cliff Cranford, a surgeon at Piedmont Newnan Hospital, who specializes in this problem. [click here](#) to watch this informative video.

### UNC researcher to help lead new esophageal cancer network

Dr. Nicholas Shaheen, professor in the UNC School of Medicine, adjunct professor in the UNC Gillings School of Global Public Health and director of the UNC Center for Esophageal Diseases and Swallowing, will co-direct Barrett’s Esophagus Translational Research Network projects. [Click here](#) to read more about this project.

## Memorial Sloan-Kettering Cancer Center Announces Connections

MSKCC announces [CONNECTIONS](#) an on-line community designed for patients and caregivers to exchange support information and inspiration. The community is open to all patients and caregivers whether you have been treated at MSKCC or not. ECEF has created a group within this site specifically for esophageal cancer patients and caregivers.

Bart Frazzitta, ECEF's President and co-founder, will be the moderator of the esophageal cancer group on this site. Come join us and register which is totally secure and exchange your thoughts and comments in an on-line environment.

To join the group, go to the Connections sign-up page at <http://www.mskcc.net/> and create yourself an account. You will need to reference the unique key phrase **mskcc123** when registering. Once you have an account setup, you can join the Esophageal Cancer group by clicking on the Select a Group drop-down under Groups on the right-hand side of your home page. From here, you can click the Join Group button to join the group.



## Support Group Conference Calls

Our Support Group Conference Call Meeting for patients and caregivers is growing in size as we now have 27 people who have signed up for these meetings. The meeting has attracted people from all over the United States and each meeting is held for about an hour. The first 15 minutes is used by a presenter who speaks on a topic that is of interest to patients and caregivers. The remaining 45 minutes of the meeting is used by participants in the conference call to make comments about their journey and to see what advice can be given by patients who have experienced the issues being discussed. The next support group call is scheduled for October 19<sup>th</sup> at 8:00 p.m. EST. If you would like more information about this unique group meeting please contact [bart@fightec.org](mailto:bart@fightec.org).



Our conference call support group for people who have lost a loved one to this dreaded disease continues to develop. We have a social worker involved in these calls and her direction has been excellent per the people involved in the call. The next call for this group is scheduled for November 7th at 8:00 p.m. EST.