

# ADVANCES IN GERD

Current Developments in the Management of Acid-Related GI Disorders

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## Barrett Esophagus: Disease Management and Patient Perceptions

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**G&H** Could you describe the development of Barrett esophagus and how it relates to gastroesophageal reflux disease?

**NS** In patients who present with Barrett esophagus (Figure 1), we presume that chronic inflammation from reflux causes irritation and inflammation of the distal esophagus. Some catastrophic event occurs, most likely an episode of erosive esophagitis (EE), after which the covering of the esophagus, which is typically composed of squamous epithelium like the skin on your hand, turns into columnar epithelium, which is similar to the lining of the small intestine. Many patients experience reflux with irritation of the distal esophagus, but a relatively smaller number develop Barrett. Clearly, there are some host factors, which are not understood, that help to determine why one patient would develop severe EE but never get Barrett, whereas another presents with few symptoms but does harbor Barrett. Centers throughout the country are examining the genetics of the disease in order to understand this better.

In any case, that is the model under which clinicians have worked. It was assumed in the past that the vast majority of Barrett occurred in people with reflux symptoms. However, recent studies have shown that a substantial proportion of the asymptomatic population seems to have Barrett as well. Whether these patients are getting reflux and damage and not feeling it or the Barrett is developing through another mechanism is unclear to us. Several studies have shown that fairly substantial numbers, somewhere between 2% and 8% of patients in



**Figure 1.** Endoscopic view of a patient with Barrett esophagus.

the general population who are asymptomatic or rarely symptomatic, have Barrett.

**G&H** Are there treatments to reverse Barrett esophagus in affected patients?

**NS** There are multiple endoscopic techniques, known as ablative therapies, that are in use or under investigation to reverse Barrett. These techniques allow the endoscopist to insert a device into the esophagus at the site of the Barrett and burn it off. Afterward, the patient receives high-dose acid suppression and what grows back at the site of the burn is often normal squamous epithelium instead of Barrett. We generally reserve ablative therapies for patients with higher grades of dysplasia because the therapies have some side effects and may be expensive as well. There are multiple modalities that are US Food and Drug Administration–approved and used in clinical practice. Among the most popular right now is photodynamic therapy (Figure 2).



**Figure 2.** Endoscopic view of a Barrett patient, post-photodynamic ablative therapy.

**G&H** How does the development of Barrett esophagus affect a patient's chance of developing esophageal adenocarcinoma?

**NS** We know that some small proportion of patients with Barrett, approximately 0.5% per year, go on to develop cancer. The vast majority, greater than 90% of patients who develop Barrett, will never develop cancer.

**G&H** Can the early treatment of gastroesophageal reflux prevent the development of Barrett and cancer?

**NS** It is tempting to assume that early treatment of gastroesophageal reflux disease (GERD) would stop the development of Barrett. Unfortunately, evidence for this is lacking. There are a few relatively weak retrospective studies that suggest that patients on proton pump inhibitor (PPI) therapy may be less likely to develop dysplasia in their Barrett than those not on PPI therapy. However, I would characterize those data as weak and say that right now we do not have a good understanding of the effect of therapy on the likelihood of getting cancer.

**G&H** Is there a generally accepted protocol for screening and surveillance for cancer in Barrett patients?

**NS** First, I should point out that neither screening nor surveillance has been shown in prospective studies to decrease the chance of death from cancer. We follow these

procedures because we believe in them, not because there is evidence for them. Having said that, which patients to screen and which to survey are not clearly defined.

Patients with a characteristic history of chronic substernal chest burning that is suggestive of reflux are often recommended for screening via upper endoscopy. The endoscopist examines the esophagus for any area that looks like potential Barrett and takes biopsies accordingly. The biopsy is the size of a grain of rice and the risk and discomfort to the patient is minimal. The risk from the endoscopic procedure is also small. Between 1/1,000 and 1/10,000 patients will suffer a major complication from an endoscopy. The costs of endoscopy, however, are not inconsequential, ranging anywhere from \$500 to \$1,500.

Surveillance is composed of intermittently checking patients with known Barrett to make sure they do not have cancer in their Barrett, again, through endoscopy and random biopsy. Frequency of surveillance depends on what changes are found in the patient's Barrett. Some patients have garden-variety nondysplastic Barrett and we believe that their chance of progressing to cancer is very small. We survey nondysplastic Barrett every 3 years. Others, who have Barrett with dysplasia, are obviously at higher risk. If a patient has low-grade dysplasia, we perform endoscopy yearly. If they have high-grade dysplasia, then we usually treat it with surgery or ablative therapy, or perform very intensive endoscopic surveillance at regular 3-month intervals.

**G&H** Are there disadvantages to this system of screening?

**NS** Approximately 40% of the adult population in the United States has heartburn symptoms but only 8,000–9,000 develop esophageal adenocarcinoma per year. There are 300,000,000 people in the United States. Is it feasible to endoscopically examine 40% of adults to detect a cancer that is only going to affect less than one tenth of 1% of those with reflux? When a very safe test is applied to patients with a very low risk of cancer, you may still realize more complications from the test than cancers averted. Cost is another issue. Are we willing as a society to spend this amount of money in order to stop these relatively few cancers? Finally, as stated above, there are no prospective data showing that surveillance and screening reduce progression to cancer.

The crux of the problem lies in inadequate risk stratification. At this time we have no way of knowing who, from among this huge mass of people with reflux, is going to develop cancer. The effort currently going into more-or-less randomly examining patients with chronic heartburn symptoms needs to be put into finding better markers for the disease.

**G&H** What is the general patient perception of cancer risk associated with Barrett esophagus and how does it affect the decision to screen and survey?

**NS** Americans have a cancer phobia. When they are told that they have a precancerous condition of the esophagus, for many, it is the last thing that they hear. Our job as clinicians is to emphasize what the risks truly are and make patients understand.

Our group conducted a study where we took some of our patients as well as some patients at the Durham, NC, Veterans Administration (VA) Hospital, and asked, after they had been diagnosed with Barrett, what they considered their risk of cancer to be. Assuming the actual likelihood of developing cancer after a Barrett diagnosis to be about 0.5% per year, the UNC patients overestimated the risk by 20 times, or about 10% per year. The Durham VA patients thought they had about a 25% chance per year, or 50 times their actual risk. It is clear from this study that patients poorly understand these risks.

Another aspect of the study demonstrated that perceived cancer risk affects patient utilization of healthcare. We found that patients who thought their risk was the highest were the most likely to seek care and to get an endoscopy. Poor patient understanding of this risk may lead to unnecessary expenses.

**G&H** What steps can be taken in clinical practice to help mitigate anxiety while providing a realistic level of care and cancer screening in Barrett patients?

**NS** Initially, I have a long discussion with my patients to go over the risks and the statistics. After hearing these facts, some patients feel that the risks are nominal and, when weighed against the equally small risks of the procedures, not worth pursuing. These patients we don't screen.

Other patients remain concerned regarding the likelihood of cancer and want screening. These patients will receive endoscopy. I think, until we have a better method of risk stratification, that this method is appropriate. The decision should be shared between the patient and physician.

Patients should also understand that there are other cancers that are much more common, for which we do not screen. For example, we do not recommend CAT scans for all smokers, despite the fact that lung cancer is much more common than esophageal cancer, because it has never been proven to be beneficial and there is radiation involved. Patients need to understand both the true level of cancer risk from Barrett and also that there is no proven benefit from screening for it.

Another issue that I discuss with patients is the matter of insurance premiums. Our group did a study where we looked at life insurance premiums for a 38-year-old man, soliciting quotes at insurance companies in North Carolina and in California. We asked for premium rates for the same subject first without and then with a diagnosis of Barrett. The yearly premium went from \$1,200 to \$2,700, despite the fact that there is persuasive data showing that Barrett esophagus does not decrease life expectancy.

**Suggested Reading**

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