EXPERT COMMENTARY

GERD in the School-Age Child

General providers of pediatric care can take care of a great number of children with reflux disease. I recommend a step-up approach employing lifestyle modifications and/or medication prior to specialist referral in most cases. When symptoms become more troublesome or there is no response to therapeutic interventions, consultation with a pediatric gastroenterologist may be appropriate.

BY BENJAMIN D. GOLD, M.D.

Begin with a thorough patient history, which is instrumental to distinguishing gastroesophageal reflux disease (GERD) from other conditions. Family medical and medication history also are important because of compelling evidence demonstrating a family link with GERD.

Advise a school-age child with GERD to eat smaller meals throughout the day and not to eat too close to bedtime. Tomato-containing products, caffeine-containing products, citrus, and—believe it or not—chocolate are commonly implicated as evoking or exacerbating symptoms of GERD. Foods with high-fat content also are associated with the disorder, as they delay the ability of the stomach to empty quickly, thus potentially worsening GERD.

Sleep disturbances may be the sole symptom for a lot of older children with reflux. Microburps or microaspirations that occur when children are supine at night wake some; they do not wake others, so keep in mind that some children might be unaware of their GERD. A good question to ask is how many pillows they sleep on at night; some children already self-manage their symptoms by elevating their upper torso at night without realizing why.

Early morning nausea also can occur after a night of continuous reflux. Therefore, the presentation of a child who says he or she routinely does not want to eat in the morning, particularly if he or she complains of nausea, raises clinical suspicion for GERD. Also, some children can report regurgitating and re-swallowing all day as they sit in class.

In addition to lifestyle changes, a trial of acid-suppressing medication, such as an H_2 blocker or a proton pump inhibitor, can be tried. Limit initial treatment to 6-8 weeks for most children. If a child reports respiratory symptoms associated with GERD, consider a longer course of acid suppression therapy. It is important to discuss the specific GERD-related symptoms you expect the medication to resolve prior to initiation of therapy.

A referral to a pediatric gastroenterologist is warranted after lifestyle modifications and pharmacotherapy fail, or if symptoms return after therapy is discontinued. Sometimes patients do not improve with these interventions or they get better but you cannot get patients off the medication without symptoms returning. Anemia or occult blood in the stool or vomit require a referral.

Frequently, children, particularly those of school age, with GERD complain of stomachache. However, GERD is more of a burning pain versus a cramping pain. Pain that is associated with GERD or due to another "organic" cause tends to be pain that localizes away from the belly button and is more epigastric, versus periumbilical pain, which tends to be more functional. In addition, abdominal pain that awakens children at night tends to be more "organic" in nature. Some children with GERD are misdiagnosed and actually have a functional GI disorder or vice versa—some children labeled as having a functional GI disorder can have GERD. Definitions of pediatric functional GI disorders can aid in the differential diagnosis; these are outlined in Rome III criteria (www.romecriteria.org).

There is no diagnostic test that is 100% accurate for the diagnosis of GERD. Thus, it is important to avoid too much testing or inappropriate treatment.

Physicians can order a pH probe to ascertain the degree of acid exposure to the esophagus. Specialists may perform a newer modality called multichannel intraluminal impedance, which, when combined with the pH probe, can measure both acid reflux and nonacid or weakly acid reflux. ■

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New Barrett's Imaging Leads to Fewer Biopsies

BY JEFF EVANS

White light endoscopic methods for Barrett's esophagus screening and surveillance could soon be overtaken by more accurate endoscopic techniques, the most promising of which appears to be narrow band imaging, based on new research.

Narrow band imaging (NBI) may offer the best combination of accuracy in detecting metaplasia, dysplasia, and cancer while reducing the number of biopsies necessary to detect changes in esophageal tissue.

White light endoscopy typically relies on random biopsy sampling using the four quadrant protocol to detect tissue changes, which endoscopists adhere to poorly, said Dr. Prateek Sharma, professor of medicine at the University of Kansas and the Veterans Affair Medical Center, Kansas City.

Other techniques, such as autofluorescence imaging and confocal endomicroscopy, potentially could serve complementary roles to white light endoscopy or NBI during screening and surveillance, said Dr. Sharma, who has evaluated NBI with his colleagues over the past 5 years.

"These technologies . . . have the ability in the future to dramatically change how we do biopsies in patients with Barrett's esophagus," Dr. Sharma said in an interview.

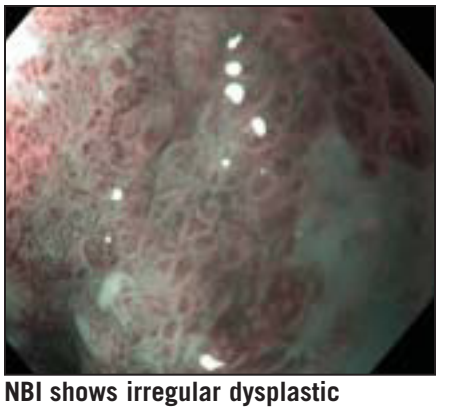
The current standard of care for biopsying patients with Barrett's esophagus (BE)—the four-quadrant protocol—takes a random tissue biopsy every 90 degrees in every 2-cm length of esophagus that contains Barrett's metaplasia.

Dr. Sharma cited several reasons why the four-quadrant protocol is flawed. The random biopsying may miss dysplastic and cancerous segments in the Barrett's tissue because "if you take a biopsy in the 12 o'clock position, you are hoping that the dysplasia or early cancer is also in that position. It could be in the 1 o'clock or 2 o'clock position and you would just miss it."

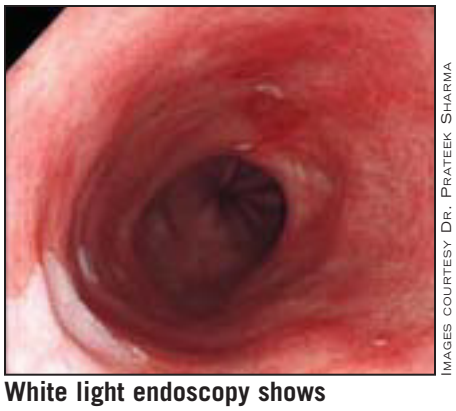
In addition, only about half of patients actually undergo the full biopsy protocol. A recent study of nearly 11,000 patients with BE who were undergoing surveillance biopsying in the Caris Diagnostics pathology database found that only 51% of patients underwent the full biopsy protocol as recommended by the American College of Gastroenterology Guidelines for BE Surveillance.

During esophageal endoscopy with NBI, white light is filtered to pass blue light (and some green light) to shine on esophageal tissue. Because hemoglobin in blood selectively absorbs blue light, clinicians can look for irregularities in the patterns of blood vessels or surface mucosa, which have been correlated with histologic findings of dysplasia or cancer in previous studies.

To determine if targeted biopsies with NBI could detect Barrett's metaplasia and dysplasia or cancer better than does high-definition white light endoscopy (HD-WLE) alone, Dr. Sharma and his colleagues at the VA Medical Center and two other centers (Amsterdam Medical Center and the Medical University of South Carolina, Charleston) conducted a study of 123 patients referred for BE screening or surveillance. They were randomized to an exam with HD-WLE, followed later by NBI, or first NBI and then HD-WLE. In each case, a separate investigator performed the second procedure 6-8 weeks after the first procedure without knowing the results of the first.



NBI shows irregular dysplastic Barrett's, confirmed by biopsy.



White light endoscopy shows nondysplastic Barrett's esophagus.

IMAGES COURTESY DR. PRATEEK SHARMA

During HD-WLE, the investigators took biopsies with the four-quadrant technique in every 2-cm length of BE. The patients had an average age of nearly 60 years and were mostly men and white.

At the annual Digestive Diseases Week, Dr. Sharma reported that the rate of detection of intestinal metaplasia in the patients' biopsies—the study's primary end point—was 85% for each modality. The detection of patients with neoplasia (low- and high-grade dysplasia and/or cancer) lesions found in the patients also was not significantly different between NBI (71%) and HD-WLE (55%).

NBI detected more lesions overall with high-grade dysplasia or cancer than did HD-WLE (19 vs. 13). Lesions with any type of dysplasia (low- and high-grade dysplasia and cancer) also were found with NBI significantly more often than with HD-WLE (81 vs. 67).

Dr. Sharma receives grant and research support from Olympus America, manufacturer of the NBI device used in the study, and from Mauna Kea Technologies. The American Society for Gastrointestinal Endoscopy funded the study. ■