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Best BIOPSY PRACTICES

By Judie Bizzozero

One of the most-effective and advanced methods for diagnosing and treating gastrointestinal diseases is endoscopy, which allows for ulcers, cancers, polyps and sites of internal bleeding to be diagnosed relatively easily on an outpatient basis performed under mild sedation. Through endoscopy, biopsies may be obtained, areas of blockage can be opened, and active bleeding can be stopped.

The following is a review of patient safety and efficiency, biopsy practices, choosing the proper removal method, and new products and research in the area of endoscopy.

Patient Safety and Efficiency

According to American Society for Gastrointestinal Endoscopy (ASGE), endoscopy is extremely safe, with very low rates of complications, when performed by a properly trained endoscopist. However, it is essential to follow best biopsy practices to ensure patient comfort and accurate diagnosis.

Obviously, patient safety needs to be the top priority during every medical procedure. Experts agree that a complete patient history be taken prior to any endoscopic procedure in order to identify co-morbid conditions that may increase risk.

“This would include the identification of patients on anticoagulation or antiplatelet therapy who would require specific instruction on modifying their drug therapy to permit safe polypectomy,” said Howard Abrams, MD, a gastroenterology specialist. “Polypectomy should not be undertaken in patients with uncorrected bleeding disorders.”

He also said the key to an efficient procedure is excellent communication with the endoscopy technician with clear instruction such as “open snare/close snare,” “needle out/back.”

Biopsy Practices

Colon cancer screening has become one of the most common reasons for endoscopy, especially in light of guidelines that recommend screening begin at age 50, and even earlier for people who are predisposed to colorectal-related illness. This means endoscopy suites and physician’s practices will be seeing increased numbers of patients looking for regular screening. However, they should be vigilant about equally addressing upper and lower GI symptoms.

Jen Veasey, product manager for US Endoscopy, said ASGE guidelines state that multiple biopsy specimens should be obtained from all suspicious lesions, and polypoid lesions should be removed.

The two most common types of polyps are hyperplastic polyp and adenoma. The hyperplastic polyp is not at risk for cancer, while the adenoma is thought to be the precursor for almost all colon cancers. A biopsy is the only way to differentiate between hyperplastic and adenomatous polyps.

“Biopsies can be taken in the esophagus, stomach, small intestine and colon,” Veasey said. “ASGE states that histopathologic evaluation is helpful to differentiate malignant, inflammatory and infectious processes. Therefore, biopsies should be taken of any suspect tissue or as a follow-up to an earlier endoscopic procedure to evaluate prior therapy.”

Christopher Lawrence, MD, spokesperson for the ASGE, reiterated that statement and said anything that looks abnormal should be biopsied. However, there are a number of other reasons to take biopsies during a colonoscopy.

“For example, even if the lining of the colon looks normal, we will biopsy it on a patient who has diarrhea to rule out microscopic colitis,” he said. “Many times, a diagnosis only can be made microscopically. A biopsy must be taken

to diagnose *Helicobacter pylori*, and a biopsy of the duodenum is needed to diagnose and evaluate Celiac disease.”

Upper endoscopy biopsies often are taken if someone has proven or suspected Barrett’s Esophagus or has long-standing gastroesophageal reflux disease (GERD).

“Many of the GI societies recommend a once-in-a-lifetime screening for Barrett’s Esophagus,” Lawrence said. “If we see something that resembles it, it requires a biopsy to diagnosis it.”

Biopsy and polyp removal go hand in hand with an upper or lower endoscopy; however, it is important to note there are times when a biopsy should not be taken.

“You never want to biopsy a blood vessel or if there is a concern there is a varicose vein on the lining,” Lawrence said.

Abrams also emphasized that large polyps greater than one-third the luminal circumference or cross two haustral folds should be referred for surgery.

Should All Polyps be Removed?

As mentioned, current ASGE guidelines suggest removing all polyps because only pathology can distinguish a true adenoma from a hyperplastic polyp.

While there are tools such as magnifying scopes and different stains that can be applied to the lining of the bowel to help visualize a mass or polyp, the only sure-fire way to make a diagnosis or non-diagnosis is removal.

“We are really at an era in endoscopy where there is a lot of research going into making a non-biopsy diagnosis,” Lawrence said. “In the future, we might be able to arrive at a diagnosis of what type of a polyp a polyp is without taking a biopsy. There is a lot of buzz around endoscopic psychology, which is a way to look beneath the surface to find distinguishing characteristics between hyperplastic polyps versus true polyp adenomas. It’s similar to what a pathologist does with a microscope.”

Abrams noted that diminutive polyps seen during insertion should be removed at that time, as they may not be seen again on withdrawal. However, large polyps can be removed on withdrawal.

He also said studies show poor correlation between macroscopic appearance at endoscopy and nature at histology. For example, severe dysplasia sometimes can be found in small polyps that otherwise appear benign at endoscopy; therefore, it is preferable to remove a polyp in its entirety for accurate classification.

“Studies show that polyp removal results in 75-percent to 90-percent reduction in cancer incidence,” he said. “Polyps found in close proximity to a colorectal cancer should be documented but not removed as they will most likely be included in the resected segment at surgery.”

Removal Methods

According to Lawrence, the two primary methods of polyp removal are biopsy and snaring, and the removal method depends largely on the size of the polyp and the physician/and or operator’s preference.

While there are a number of polypectomy techniques, Abrams said the following are the most common:

- **Cold biopsy** removes diminutive polyps (2-3 mm) using forceps with opposing jaws. The non-thermal technique has minimal risk and can effectively remove diminutive polyp in its entirety.
- **Hot biopsy** is a thermal technique using electrocoagulation via biopsy forceps. This technique has an increased risk of post-polypectomy bleed and is not recommended on the right side of the colon (because of increased risk of perforation).
- **Cold snare biopsy** is indicated for sessile polyps up to 7 mm. This technique is more effective than cold biopsy at completely removing polyp tissue. It is best used in the right side of the colon where risk of post hot biopsy or hot snare excision bleeding is greatest. The technique has minimal risk of complication.

While physician preference for removal method is always evaluated, Lawrence said size is a deciding factor and anything less than 5 mm should be removed with biopsy forceps.

Single-bite biopsy forceps allow sampling of only a single specimen at a time. Multiple-bite forceps are equipped with a spike that can obtain up to four or more specimens on a single pass through the accessory channel, potentially contributing to decreased operative time when a large number of specimens are to be obtained.

“Single means one pass, a biopsy and drop,” he added. “The multi allows for taking multiple bites, dropping it in the trap and repeating the process. It makes a sizable difference in time efficiency as well as patient comfort.”

Polypectomy snares come in a variety of shapes, sizes and materials, are marketed as disposable or reusable, and may be designed with special features.

“Once you get to 7 mm, people generally will use a snare,” he said. “The rationale is that if you have a lesion of 8 mm, you can wrap your snare around that and squeeze the polyp into the snare with one fell swoop. The problem

with using forceps with larger polyps is multiple pinching and a longer procedure time. There also is a higher risk of leaving some of the polyp behind, so it really has to do with complete removal in a more efficient fashion.”

US Endoscopy’s Veasey said current literature supports the use of cold forceps over hot forceps for diminutive polypectomy, because hot forceps generally are considered destructive when removing diminutive polyps.

“The use of cautery not only fulgurates the tissue, making histopathologic evaluation difficult, but there is an increased risk of thermal injury to the patient and, as with all forceps, it can be difficult to remove the polyp in its entirety,” she said.

“Cold snaring of diminutive polyps is a much more effective means of ensuring the removal of the entire polyp,” she added. “It also eliminates the risks associated with the use of cautery, including perforation or delayed bleeding. Literature dictates that cold snaring is an acceptable practice for the removal of polyps 2 mm to 8 mm in size.”

New Products and Research

The standard colonoscopy platform has been highly effective and difficult to improve upon.

While there are no major technological breakthroughs in terms of new products, AGSE’s Lawrence said a lot of the technology has been how to “build a better mousetrap” and it’s been small adjustments and tweaks to what is already a good device.

He said one of the biggest revolutions from an efficiency standpoint is multiple-bite biopsies versus single-bite biopsies.

“Most of the changes have been manipulating the tissue sample cups or traps to allow for a larger biopsy to fit in the cup,” he said. “This also allows for multiple-bite biopsies to be performed.”

Lawrence said there is a lot of research and development going on in the area of endoscopy, but it will be some time before those involve clinical trials.



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