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The inside scoop on GI scopes

From colonoscopies to swallowed capsule cameras, ever-evolving imaging techniques give a full picture of digestive health.

By: Elizabeth Lear | March 2, 2023

GI scope procedures can give doctors lifesaving perspectives on early stage, symptomless disease. (For Corewell Health Beat)

A lot can go amiss as ingested food travels its path through your body.

But thanks to the digestive tract's natural openings, physicians can direct tiny cameras into the body for a quick, insightful view.

These GI scope procedures can give doctors lifesaving perspectives on early stage, symptomless disease.

And sometimes, a provider can even apply therapies during the procedure, such as colon polyp removal or dilating a narrowed esophagus.

While tubes traveling down the throat or up the rectum may sound unpleasant, physicians generally use sedation or anesthesia. Most patients don't even remember the procedure.

And afterward, many patients are surprised at how easy and painless the procedures are, Corewell Health gastroenterologist Randall Meisner, MD, said.

A gut tour

The digestive tract—basically a long, twisting tube—is uniquely accessible through the mouth or rectum.

An upper scope entering the mouth lets physicians look into the esophagus and stomach for acid reflux damage, ulcers and masses.

A colonoscopy via the rectum visualizes the colon walls and allows physicians to locate polyps, bleeding sources or diverticulitis. It also allows them to take biopsies.

“For conditions like Crohn’s disease and colitis, certainly using scopes is going to give you a whole different type of workup and knowledge than CT scans or MRIs,” Dr. Meisner said.

Upper endoscopy

To get a view of the upper portion of the digestive tract, a camera is inserted via a thin tube through the mouth and down the esophagus.

During this procedure, called an upper endoscopy, a physician will look for bleeding, acid reflux damage or masses in the soft tissue of the esophagus and stomach and the top of the small intestine.

“One of the main reasons we do upper endoscopy is patients having trouble swallowing and having narrowing of the esophagus,” Dr. Meisner said.

If a physician breaks up scar tissue or dilates the esophagus as well, there could be some minor therapy-related discomfort afterward, he said. Generally a mild sore throat is the only aftereffect.

The only required preparation: no eating or drinking after midnight.

Patients will sometimes receive a sedative or anesthesia beforehand and, typically, they’ll return home the same day as the outpatient procedure.

Colonoscopy

To view the lower part of the digestive tract—the colon—a physician performs a similar procedure called a colonoscopy, inserting a small tube with a camera in the rectum. This is also done under sedation or anesthesia.

It's recommended that regular colonoscopy screening begin at age 45 or sooner, depending on family history.

There should be minimal pain or discomfort after the procedure, perhaps some bloating, Dr. Meisner said. The experience is typically much better than most people anticipate.

"And obviously the benefits far outweigh the risk of that test, because we find way too much colon cancer that we can prevent," he said.

Easier prep

The bowels must be fully cleared at home before cameras can get a proper view of the colon walls.

"No cheating on the prep," Dr. Meisner said. "If you have a good, clean prep and do really, really well, then the more we can see, the more we can take out. Or, if it's really clean, we can put you on the 10-year plan."

Fortunately, colonoscopy prep formulas are a lot easier to stomach these days.

"There are several preps that are less-volume prep," Dr. Meisner said. "There's one prep that's pills as well."

Both provide better electrolytes and less risk of dehydration, and they're usually better tolerated, he said.

"There are still some reports of nausea with the pills, but we're kind of getting a little bit better about how to administer these better, maybe a little slower and not all together," he said. "So they have been a really, really nice advance."

Experience counts

While common, a colonoscopy is not a technically simple procedure.

“They actually require a bit of training and, unfortunately, there is quite a lot of variability in the quality of colonoscopies,” he said.

Be sure you’re going to a provider who is well trained and who has performed a lot of colonoscopies—ideally more than 1,000. The provider should take the time to look for polyps when they’re withdrawing the scope.

Capsule camera

While scopes give the inside view on the upper and lower GI system, that leaves the small intestine—an elusive 20 feet of twists and turns between the stomach and colon.

To get snapshot images of this portion of the GI tract, physicians can use a capsule camera.

After taking half a dose of colonoscopy prep, a patient swallows this tiny device like a pill. The tiny camera sends images of the small intestine to a nearby recording device. The camera naturally makes its way through the digestive system and gets pooped out within a week—no retrieval necessary.

The capsule camera can pinpoint bleeding, masses and Crohn’s disease in the small intestine.

“We’ll see the very top when we do an upper scope and we’ll see the very bottom of the small intestine if we do a colonoscopy, but that capsule is going to give us a very good look at the entire small intestine,” Dr. Meisner said.

In use for about 20 years, the capsule camera’s imaging quality and capabilities continue evolving.

In the not-so-distant future, Dr. Meisner said he anticipates we will see this technology applied more in colon imaging and polyp location.

But for now, capsules can't remove polyps—so schedule that colonoscopy, Dr. Meisner said.

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