INNOVATIONS IN DIGESTIVE HEALTH

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Q: Are there any themes to this issue of Innovations in Digestive Health?

DR. DELANEY: This issue shows many of the fantastic skills of our faculty and physician group, as well as the research opportunities available to patients.

If we look back 15 years, the average patient having major abdominal surgery in the United States stayed 10 or 11 days in hospital. Much progress has been made since then. Now, with a combination of standardized perioperative care protocols and minimally invasive surgery when appropriate, the average stay is only three or four days. Some patients even go home the next day.

Q: How will the UH Digestive Health Institute continue to grow?

DR. COMINELLI: We’re very excited about the reorganization of the Institute over the next several years. The goal is to adopt a more integrated, systemwide approach to the treatment of patients with digestive diseases.

We’re recruiting 10 to 12 faculty members and community gastroenterologists, some of whom will work at the main campus and others at nearby hospitals. We are planning the development of a new nutrition program that will offer inpatient and outpatient services, and also have begun expanding our inflammatory bowel disease program, for which we are already known at an international level.

Q: Is there any other news you’d like to mention?

DR. COMINELLI: We’re very happy that this year, yet again, UH Case Medical Center is among the top 15 hospitals for gastroenterology and GI surgery, as ranked by U.S. News & World Report.

RECENTLY PUBLISHED
Operative Techniques in Laparoscopic Colorectal Surgery, 2nd edition
By Conor P. Delaney, MD, PhD
Wolters Kluwer Health/Lippincott Williams & Wilkins

The second edition of Operative Techniques in Laparoscopic Colorectal Surgery was recently published.

“It’s a relatively young field, and techniques continue to evolve,” says author Conor P. Delaney, MD, MCh, PhD, Chief of the Division of Colorectal Surgery at University Hospitals Case Medical Center. Dr. Delaney is also Vice Chair of the UH Department of Surgery, Director of the UH Digestive Health Institute and Director of the Center for Skills and Simulation at Case Western Reserve University School of Medicine, where he is also the Jeffrey L. Ponsky Professor of Surgical Education. “Standardized methods of doing laparoscopic colorectal operations help maximize efficiency in the operating room and increase the patient’s chance of doing well after surgery.”

Updates to the book, originally published in 2006, include new major operative videos and expanded content on colorectal procedures. Included are chapters on mobilization of the mesorectum, hand-sewn coloanal anastomosis, robotic single-port right colectomy, single-port total colectomy with end ileostomy and robotic low anterior resection.
NERVE MODULATION CAN REDUCE, ELIMINATE FECAL INCONTINENCE

Therapy is tailored to each patient’s needs

An implanted device that adjusts the nerve functioning of patients with fecal incontinence can reduce or even eliminate episodes. The treatment is just one of many available at University Hospitals Digestive Health Institute to address a condition that greatly affects quality of life.

“Fecal incontinence is one of the leading causes of people needing to be institutionalized, especially as they get older,” says Sharon L. Stein, MD, Surgical Director of the Inflammatory Bowel Disease Center at the UH Digestive Health Institute. The problem is “huge,” she notes, affecting 20 to 30 percent of older adults to varying degrees, as well as women with obstetric injuries and patients with nerve damage resulting from diabetes, multiple sclerosis or physical disability.

Whether a patient has issues that are mild or severe, “there are things we can do,” stresses Dr. Stein, citing an array of treatment options. “Sometimes fiber is all they need, but it is worthwhile to look into it.”

SUPER-CHARGING NERVES

At UH, bowel control therapy using fecal nerve modulation is delivered through the InterStim system, produced by Medtronic. The system targets communications between the brain and the nerves that control the bowels. The device is implanted temporarily for the first two weeks to allow for adjustment. After two weeks, if patients are unhappy or have side effects, the device is removed. But if treatment is working, patients then receive a permanent device that will only need replacement when the battery runs out, approximately three to five years after placement. A model equipped with a rechargeable battery is currently under development.

According to Dr. Stein, fecal nerve modulation works by mechanisms that are not completely understood. “Basically, we’re almost super-charging the nerves,” she explains. “A nerve probe is inserted under fluoroscopy at the S3 nerve root. It creates a stimulation to the nerve that controls fecal function.”

“At least 50 percent of patients have full improvement – meaning they have no incontinence episodes after treatment – and about 70 percent have at least 50 percent improvement in the number of episodes,” she says. “We try to make their bowel movements a little more solid, so that they have less urgency to get to the bathroom and have fewer accidents.”

Complications are rare, Dr. Stein adds. Some people have discomfort, with a taut feeling in their legs, and infections are possible. “Most commonly, though, even if it turns out not to work for a given patient, there are no side effects. Nothing precludes trying other treatments,” she notes, adding that fecal nerve modulation is unlike other, more invasive procedures, which “could make things worse rather than better.”

A SLATE OF OPTIONS

Treatment for fecal incontinence is multifaceted, stresses Dr. Stein. Options that can work in conjunction with nerve modulation include biofeedback therapy to help patients use bowel muscles more effectively, injectable Solesta gel (Salix Pharmaceuticals) to reduce leakage, and Secca therapy (Mederi Therapeutics), which builds muscle tone through radiofrequency energy.

“There are multiple layers to therapy,” Dr. Stein says, adding that surgery can help people with obstetric injuries. “A huge number of these options are new within the last 10 years. The field has really expanded, which is really exciting, because before there wasn’t a lot we could do.”
ALPPS:
A New Surgical Technique for Metastatic Liver Cancer

Novel approach may lead to increased survival rates

Surgeons at University Hospitals Case Medical Center and University Hospitals Seidman Cancer Center are pioneering a new approach to treating metastatic cancer in the liver, having performed one of only four cases done in the United States to date. With the new technique, tumors previously considered unresectable using conventional staged hepatectomy may now be resectable.

The procedure – known as Associating Liver Partition with Portal Vein Ligation for Staged Hepatectomy, or ALPPS – was first reported in 2011 and described at length the next year in the March 2012 issue of Annals of Surgery. It opens doors to patients who may have had too little healthy liver tissue to undergo surgery by taking advantage of the organ’s ability to regenerate, says Christopher Siegel, MD, PhD, Division Chief of Hepatobiliary and Transplant Surgery at UH Case Medical Center.

“Even though it’s one organ, the liver has separate segments. Each of those eight segments can function independently and has its own blood flow. You’re not limited by the anatomy of the liver but by the size of what you leave behind,” Dr. Siegel explains, noting that much research has gone into understanding the minimum amount of liver tissue needed. “Because the liver can grow and regenerate – a process driven by portal flow and pressures – if we take a liver and ligate or tie off a branch of the portal vein, that part of the liver once served by the vein will get smaller and the rest of the liver hypertrophies.”

A PROMISING NEW TOOL
The ALPPS procedure occurs in two stages. In the first, surgeons “isolate the segment they want to remove by dividing the liver and ligating the portal vein to those segments, but they leave the artery and the bile duct intact, so that the hepatic cells on that side survive and function,” Dr. Siegel says. “Patients have larger liver volume, while ensuring the remnant meant to stay behind has increased portal flow and will grow.” The collaterals inside the liver tissue are shifted away from the part of the liver to be removed, he says, and the diseased portion of the liver remains in place temporarily. It is also possible in some cases to remove tumors in the remaining segment during the same ALPPS procedure.

Then, patients recover over the course of 10 to 14 days, during which the liver tissue to be kept has time to grow. “You reach a critical mass of liver tissue so that you can remove the side you want to remove,” Dr. Siegel notes.

CONTACT OUR EXPERTS. To learn more about options for patients with liver tumors, contact Dr. Siegel at 216-844-0489.
Proper patient selection for ALPPS is crucial, Dr. Siegel stresses, noting that decisions are made on an individual basis after considering the size of the liver and locations of tumors, among other factors. ALPPS appears to be most appropriate for patients with metastatic colon cancer. It may also be suitable for those with bile duct, gall bladder, liver cell or neuroendocrine cancers.

Contraindications to ALPPS include cirrhosis of the liver or scar tissue. It is also possible that liver growth after the first step of ALPPS may be insufficient, making the second step of the procedure impossible. Another issue considered is whether the patient is resilient enough to undergo two surgeries within a relatively short timespan.

More common in Europe than in the United States, ALPPS “is a fairly new procedure and still controversial because of the risk of complications and difficulty to perform,’’ Dr. Siegel notes. Possible consequences include prolonged cholestasis and death. However, recent reports, such as a 14-patient series published in the journal Surgery in October 2014, demonstrate that the procedure is evolving.

Even with the challenges, ALPPS is a welcome addition, Dr. Siegel says. “Every patient we see, we look at everything we can offer to treat their cancer. This is one more tool we have.”

Results for the new technique are being tracked in the international ALPPS registry, which has enrolled more than 200 patients thus far. According to Dr. Siegel, UH Case Medical Center is gearing up to take part in an ongoing randomized controlled trial of ALPPS versus classic two-stage hepatectomy. That trial was initiated in 2012. More information on the two studies is available online at www.ALPPS.net.

MOVING BEYOND CONVENTIONAL METHODS
Before ALPPS was developed, the best option for patients with metastatic liver cancer was classic two-stage hepatectomy with portal vein embolization, Dr. Siegel says. Radiologists would insert coils into the veins of the liver segment needing removal, thereby causing clots to form and block portal flow. “One of the problems with this approach is that there can be collaterals in the liver that will keep branches of the portal vein open, even with the coils, and thus prevent complete clotting of that side,” he notes.

Research shows that, compared with earlier methods, the desired portion of the liver grows larger and more quickly using ALPPS.

Studies also suggest that ALPPS and other recent developments lead to better patient outcomes. According to Dr. Siegel, five-year survival rates for patients with stage IV colon cancer and liver metastases had previously hovered at 15 to 20 percent. Now, with the combination of advanced surgical techniques such as ALPPS and newer chemotherapy drugs, he says, some patients can potentially be cured.
MINIMALLY INVASIVE THERAPY FOR ACID REFLUX

While many gastroesophageal reflux disease (GERD) patients find relief with medication and lifestyle modifications, nearly 40 percent will continue to suffer symptoms despite medication. University Hospitals Digestive Health Institute is the only center in Northeast Ohio to offer a new less invasive treatment for GERD, called the LINX procedure. Patients who suffer from reflux have a weak valve between their stomach and esophagus called the lower esophageal sphincter. The LINX reflux management system consists of a small, flexible band of magnets. When placed around the lower esophageal sphincter, the magnetic attraction of the magnets provides support and restores the body’s natural barrier to reflux. The force of the swallow separates the magnets and allows for food and liquid to pass normally.

“LINX has an excellent record of reflux control and a high safety profile, which has now been well documented in clinical studies. It offers my...
RESEARCHERS AIM TO ENHANCE RECOVERY AFTER SURGERY

Patients having colorectal surgery at University Hospitals Case Medical Center will soon be able to participate in a pilot trial of the ccNexfin technology, produced by Edwards Lifesciences. The technology uses a finger monitor to measure subtle changes in blood flow.

“We want to see whether using this technology to guide fluid dosing during and after surgery will improve outcomes,” says James Rowbottom, MD, Chairman of the Department of Anesthesiology and Perioperative Medicine at UH Case Medical Center. “Like any drug, fluid can be helpful or harmful, and there are a lot of complex ways to determine how much is enough.”

Although length of stay following major abdominal surgery has dropped dramatically in recent years, there is still room for improvement, says Conor P. Delaney, MD, MCh, PhD, Chief of the Division of Colorectal Surgery at UH Case Medical Center and Director of the UH Digestive Health Institute.

“One of the areas still being explored is how to standardize and optimize the amount of fluid a patient is given around the time of surgery,” he says. “There is a lot of dispute in the literature over what that amount is.”

Evidence from Europe suggests that the tailored approach works, reports Dr. Rowbottom. The new goal, he says, is to determine whether this approach can be reproduced in the United States.

Contact Our Experts. To learn more about research on ccNexfin at UH Case Medical Center, contact Dr. Rowbottom at 216-844-7330 or Dr. Delaney at 216-844-8087, option 2.

patients who are suffering from reflux a much needed alternative to medication or more invasive surgeries, “ says Leena Khaitan, MD, Director of the Esophageal & Swallowing Center at the UH Digestive Health Institute.

“If patients have regurgitation as opposed to heartburn as their primary symptom, that’s where a procedure can help,” she says. “These are people who say they can never lay flat at night, can’t bend over in the garden or who avoid a lot of foods.”

Moreover, LINX placement “is a quicker operation, with quicker recovery. Patients eat much earlier and have fewer problems with swallowing,” Dr. Khaitan notes. Medication, on the other hand, carries side effects and may not eliminate the symptoms of regurgitation. “The medications can de-acidify the liquid, but they can’t stop it from coming up into the esophagus,” she says.

Contact Our Experts. To learn more about treatment options for GERD, call Dr. Khaitan at 440-285-6476 or at 216-286-5436.
Physicians of University Hospitals Digestive Health Institute at UH Case Medical Center are continuing to gain expertise in performing per-oral endoscopic myotomy (POEM), a procedure to restore swallowing in patients with dysphagia due to achalasia and other motility disorders. To date, they have performed more than 75 procedures and lead the tri-state area in volume and outcomes.

“It still is a challenging procedure, but we are quicker, with shorter operative times. We are also taking on more difficult cases, such as patients whose prior surgery or endoscopic therapy has failed,” says Jeffrey Marks, MD, Program Director of General Surgery and Director of Surgical Endoscopy, UH Case Medical Center.

No longer an experimental treatment, POEM has been performed approximately 6,000 times worldwide, Dr. Marks reports. “Now we’re learning lessons from these GI techniques that we can apply to other diseases,” he says. “Patients with other esophageal motility disorders are also becoming candidates.”

During POEM, physicians enter the esophagus through the mouth and then make a tiny incision in its inner lining and cut the muscle endoscopically.

John Dumot, DO, Medical Director of UH Digestive Health Institute at University Hospitals Ahuja Medical Center, notes several advantages POEM has over traditional surgery. “POEM eliminates the need for abdominal surgery and offers patients a faster, less painful recovery,” he says. “I believe the results will be long-lasting and that this procedure will prove to be the most effective treatment for patients with achalasia.”