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# Digest This

DIGESTIVE DISEASE INSTITUTE | FALL | 2011

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Cleveland Clinic #2 in the U.S. – Gastroenterology



**Dear Colleagues,**

It is my honor to recently have been named Chairman of the Department of General Surgery in Cleveland Clinic's Digestive Disease Institute (DDI) and to introduce the Fall 2011 issue of *Digest This*.

During my nearly 20 years as a surgeon here at Cleveland Clinic, I have worked closely with the people who make up this department – including John Fung, MD, PhD, now DDI Chairman, whom I succeed as department chairman. I feel most fortunate to now be leading this highly acclaimed staff and carrying on its tradition of academic and clinical excellence.

In this issue, we feature (p. 6) our pelvic floor center, the Center for Functional Bowel Disorders. Led by Tracy L. Hull, MD, Section Head, Pelvic Floor Disorders, this group of internationally renowned experts uses a team approach to provide innovative treatments for complex and reoperative cases. With high volumes and a “one-stop” treatment model, this clinic is not only providing the most advanced care for patients today – but it is also conducting innovative clinical and bench research to improve the treatment options possible in the future.

You'll also find updates on other key specialties within our Digestive Disease Institute. On page 1, we feature two groundbreaking liver research studies by Claudia Zein, MD: the first finding that smoking may accelerate the progression of nonalcoholic fatty liver disease and the second showing pentoxifylline shows promise as effective medical therapy for nonalcoholic steatohepatitis. In addition, we highlight several unique services including our Acute Care Surgical Service (p. 11), Pouchitis Clinic (p. 4) and the latest treatments available for gastroparesis (p. 10) and pancreatic cancer (p. 3).

I hope you enjoy this issue of *Digest This* and I welcome your questions and comments.

Sincerely,

R. Matthew Walsh, MD

Chairman, Department of General Surgery | Cleveland Clinic Digestive Disease Institute | [walshm@ccf.org](mailto:walshm@ccf.org)

SPECIAL FEATURE

# Groundbreaking Liver Research



Claudia O. Zein, MD

## Cleveland Clinic study finds smoking may accelerate the progression of NAFLD

Smoking's detrimental effects on the lungs and heart and its link to greater risk of several cancers have been well-known for decades. However, its harmful effects on the liver were unknown until recently. Smoking exacerbates liver injury in patients with certain chronic liver diseases, such as hepatitis C and primary biliary cirrhosis, but data on its potential role in nonalcoholic fatty liver disease (NAFLD) were limited to animal studies. A study by Cleveland Clinic gastroenterologist Claudia O. Zein, MD, published in the April issue of the *Journal of Hepatology* shows for the first time that smoking may accelerate the progression of NAFLD in humans.

"The reason why this is important is that over 30 million Americans have NAFLD. Therefore, a vast number of subjects may benefit from risk factor modification," explains Dr. Zein. "In diseases where there is no formally recommended therapy, such as in NAFLD, the identification of potentially modifiable risk factors is crucial."

The value of the findings is further emphasized by the fact that it would be impossible to conduct a prospective randomized controlled study of the effects of cigarette smoking in humans with NAFLD.

"The prospective data collection and the very large number of patients included in this cross-sectional study strengthen the conclusions," Dr. Zein says.

Dr. Zein and her co-authors, in collaboration with the Nonalcoholic Steatohepatitis Clinical Research Network (NASH CRN), designed and led this study of smoking history and liver biopsy data collected

from 1,091 adults enrolled in the NASH CRN between 2004 and 2008. Pathologists from the NASH CRN, a multicenter research network sponsored by the NIDDK, read all biopsies.

The study found that advanced liver fibrosis was more frequent ( $p < 0.0001$ ) among patients who smoked more than 10 pack years (42.6 percent) compared to those that did not (28.1 percent).

When stratifying for the presence of diabetes, a known factor associated with increased severity of NAFLD, the analysis showed a similar frequency of advanced fibrosis between diabetics with or without a significant smoking history (45 percent and 50.5 percent) and nondiabetics with a significant smoking history (41.2 percent). But nondiabetics without a significant smoking history showed a lower frequency of advanced fibrosis (19.6 percent).

"This indicates that it is possible that what we're seeing has to do with insulin resistance," explains Dr. Zein, adding that it is recognized that smoking is a risk factor for glucose intolerance. "Smoking may exacerbate NAFLD partly through an effect on insulin resistance. However, the effects of smoking on liver fibrosis in human NAFLD are likely to engage several mechanisms."

Oxidative stress, chronic hypoxia and enhancement of pro-inflammatory cytokines may also play a role, Dr. Zein explains.

"More studies are necessary to characterize this better," she notes.

"For now, we should strongly recommend smoking cessation in all patients with NAFLD."

# Pentoxifylline shows promise as effective medical therapy for NASH

Research by Claudia O. Zein, MD, could lead to a new effective medical therapy for patients suffering from the most severe form of nonalcoholic fatty liver disease (NAFLD).

The promising study, scheduled to appear in the November 2011 issue of *Hepatology*, linked a significant improvement in the NAFLD activity score and liver fibrosis in patients suffering from nonalcoholic steatohepatitis (NASH) treated with pentoxifylline (PTX). Establishing a treatment for NASH could have great implications for a large portion of the more than 30 million adults in the United States suffering from nonalcoholic fatty liver disease. NASH's characteristic hepatocellular injury, inflammation and fibrosis can eventually progress to cirrhosis.

"To date, no medical therapy has been proven to improve fibrosis in NASH in individual clinical trials," Dr. Zein says. "Therefore, these findings that show PTX may improve fibrosis in NASH are very important and deserve further study."

On the market for decades for improving blood flow, PTX has FDA approval for the treatment of peripheral vascular disease. PTX already had a well-established safety profile and a history of being well-tolerated by nonliver disease patients when Dr. Zein began her research in December 2006.

Until then, a number of small pilot studies had suggested a possible link between PTX and improvement of liver injury in NASH patients. But those studies were significantly limited by lack of liver biopsy data, uncontrolled nonrandomized design and a very small size. Dr. Zein's study is the first double-blind, randomized, controlled study of PTX in a sufficiently large number of patients with biopsy-proven diagnosis of NASH.

Dr. Zein's research compared the liver biopsies of 55 patients taken before and after a one-year regimen of PTX or placebo, between 2006 and April 2010. Patients on the treatment arm received an oral dose of 400 mg of PTX three times per day for one year.

Both intention-to-treat and per-protocol analyses showed a statistically significant greater improvement of NAS in patients on PTX compared to those on placebo. In the per-protocol analysis, a decrease of  $\geq 2$  points in the NAS from baseline was observed in 50 percent of the patients on PTX vs. 15.4 percent of those on placebo ( $p = 0.01$ ). There was a significant improvement in fibrosis score associated with PTX, with a mean change of  $-0.2$  among those on PTX compared to  $+0.4$  among those on placebo ( $p = 0.038$ ). Also, although not statistically significant ( $p = 0.17$ ), overall improvement in liver fibrosis was observed in a larger proportion (35 percent) of patients in the PTX group compared to those taking placebo (15 percent). In addition, PTX was safe and well tolerated in patients with NASH.

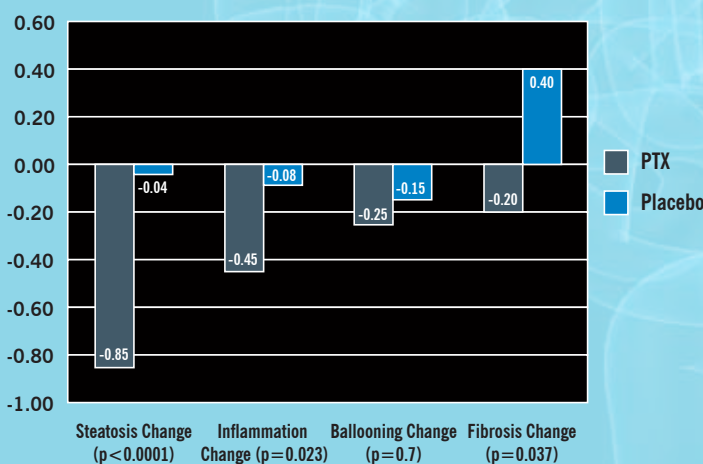
"These findings are exciting because there was not only improvement in the NAS, but also improvement in the fibrosis score with PTX, and this is very important," she says.

PTX's potential, its long-standing safety profile and its affordability as a generic support the need for future studies of the drug's effect on patients with NASH. Dr. Zein is currently planning a larger trial to continue this promising research, including further exploration of the mechanisms by which PTX exerts its protective effect on the liver.

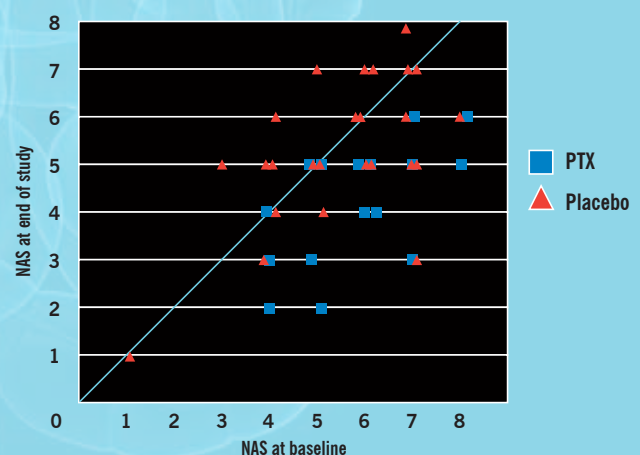
"These results bring out not only the need for additional studies but also optimism and a strong hope that we are not far from formal recommendations of an effective medical therapy for these patients," she says.

Contact Dr. Zein at 216.444.0421 or zeinc@ccf.org. ■

Mean Changes in Histological Features Scores by Treatment Arm



Change in NAFLD Activity Score from Baseline to End of Study\*



\* Values above the diagonal line represent increases in NAS (worsening of disease), whereas those below the line represent improvement in NAS. The data show that subjects in the PTX group had either histological improvement or no change in NAS. In contrast, in the placebo group, changes in the NAS are strewn across the graph.

## Minimally Invasive Options Increasing to Treat Pancreatic Cancer

Minimally invasive procedures are becoming a more established option in the arsenal of surgical treatments for pancreatic cancer. And for the past few years, Cleveland Clinic surgeons have been performing minimally invasive procedures for certain pancreatic cancers with the assistance of robotic technology.

### STUDYING THE ROBOTIC WHIPPLE PROCEDURE

About 45 robotic Whipple procedures have been performed at Cleveland Clinic since 2009, when R. Matthew Walsh, MD, Department Chair, General Surgery at Cleveland Clinic, successfully completed the first. This number represents roughly a quarter of the total number of Whipple procedures Cleveland Clinic has performed since then, Dr. Walsh says.

“A component of our success with robotic Whipple procedures has been our team approach,” he notes. “We have a dedicated surgical team that includes Dr. Sricharan Chalikonda and me. As a team, we determine which patients are appropriate for the procedure and operate together to orchestrate this complex operation with fluidity to achieve the best outcomes.”

Outcomes in terms of complications for this most common and complex operation for pancreatic cancer are generally the same as with the open procedure, Dr. Walsh says. Also, the cancer margin rate is better with the robotic Whipple procedure than the open procedure, and patients are hospitalized for fewer days afterward (four days vs. nine). Much is still being learned about the best candidates for it as well.

“What we have learned is that the most challenging patients in terms of weight and disease will benefit the most,” Dr. Walsh says. “You wouldn’t normally pick them to be the first candidates for the robotic Whipple procedure because they have their own challenges, but they may benefit the most.”

### ADVANCING DISTAL PANCREATECTOMIES

Cleveland Clinic surgeons, who already have been performing laparoscopic spleen-preserving distal pancreatectomies, are studying a robotic approach to the procedure. “The question is whether robotics help in regard to the ease of preserving the spleen,” Dr. Walsh says. His team is analyzing outcomes to understand better which patients fare best in the procedure.

Conrad Simpfendorfer, MD, a staff member in the Department of General and Vascular Surgery at Cleveland Clinic Florida, performs as many as two laparoscopic distal pancreatectomies a month. He said the procedure using robotic technology also will be offered at Cleveland Clinic Florida in the near future.

### EXPANDING MIS PANCREATIC SERVICES

The advancement of laparoscopic and robotic procedures for pancreatic cancer has commanded an expansion of such services at Cleveland Clinic.

“Minimally invasive pancreatic procedures are growing very fast and quickly becoming the gold standard – at least for distal pancreatectomies,” Dr. Simpfendorfer says.

Regarding all minimally invasive pancreatic procedures, Dr. Walsh says, “We feel very strongly that you need both the expertise as an advanced laparoscopic surgeon and as a pancreatic surgeon to safely do these operations.” This unusual skill set can be found in a very few centers, he says. Cleveland Clinic is one of the few and performs a high volume of these procedures, making it part of an ongoing trend toward regionalization of certain types of advanced surgery.

Dr. Walsh can be contacted at 216.445.7576 or walshm@ccf.org. Dr. Simpfendorfer can be contacted at 954.659.5000 or simpfec1@ccf.org. ■



R. Matthew Walsh, MD

# 25%

of Whipple procedures at CCF are done robotically.

## Service Spotlight: Pouchitis Clinic

Cleveland Clinic continues to draw a record number of patients from around the country and abroad to the world's first and largest center to treat pouch-associated disorders, the Digestive Disease Institute's Pouchitis Clinic.

# 1

Cleveland Clinic's Pouchitis Clinic is the world's first and largest for treating pouch-associated disorders.

# 1,200

Patients seen per year by the clinic's gastroenterologists, colorectal surgeons and a variety of specialists.

In the Pouchitis Clinic, the gastroenterologists, colorectal surgeons and a variety of specialists have been working collaboratively on pouch-related disorders since 2002. Together they now see more than 1,200 patients per year and perform more than 700 diagnostic/therapeutic pouch endoscopies annually.

"We as a center have become a national and international referral center," points out Bo Shen, MD, the only gastroenterologist in the nation who specializes in pouch disorders and complications, who is also Professor of Medicine at Cleveland Clinic Lerner College of Medicine. "We see patients referred from the East and West Coasts, Middle East, Central and South America, and Europe."

The Pouchitis Clinic also has become the largest referral center for those suffering from failing pouches, whether from disease or complications related to prior surgical procedures. Pouchitis Clinic surgeons see the highest volumes of both initial and reoperative J-pouch cases in the country, with their expertise and knowledge of complex procedures resulting in stellar outcomes. The operative success rates at Cleveland Clinic are 96 percent in ulcerative colitis (UC) patients for initial pouches and 85 percent for redo pouches or pouch revision surgery.

Pouchitis Clinic surgeon Feza H. Remzi, MD, Chairman, Department of Colorectal Surgery, at Cleveland Clinic, says Cleveland Clinic's high volume of cases ensures experience with complex issues of reoperation.

"This may include performing a major laparotomy, abdominal pelvic pouch mobilization with disconnection and creating a new hand-sewn anastomosis," Dr. Remzi says. "Under these circumstances, we may either salvage the old pouch or create a new pouch. It is critical we eliminate the septic focus related to the failed anastomosis and its related complications."

Those seen at the Pouchitis Clinic form a patient-gastroenterology-surgeon relationship that ensures ongoing collaboration and follow-up.

The Pouchitis Clinic is also home to approximately 60 percent of the pouchitis research conducted in the United States, with 40 to 50 pouch-related manuscripts published annually, offering patients access to the latest technologies and cutting-edge studies. Clinical and translational research at the Pouchitis Clinic has been supported by the National Institutes of Health, American College of Gastroenterology, American Society of Colorectal Surgeons, Crohn's and Colitis Foundation of America, and Broad Foundation.

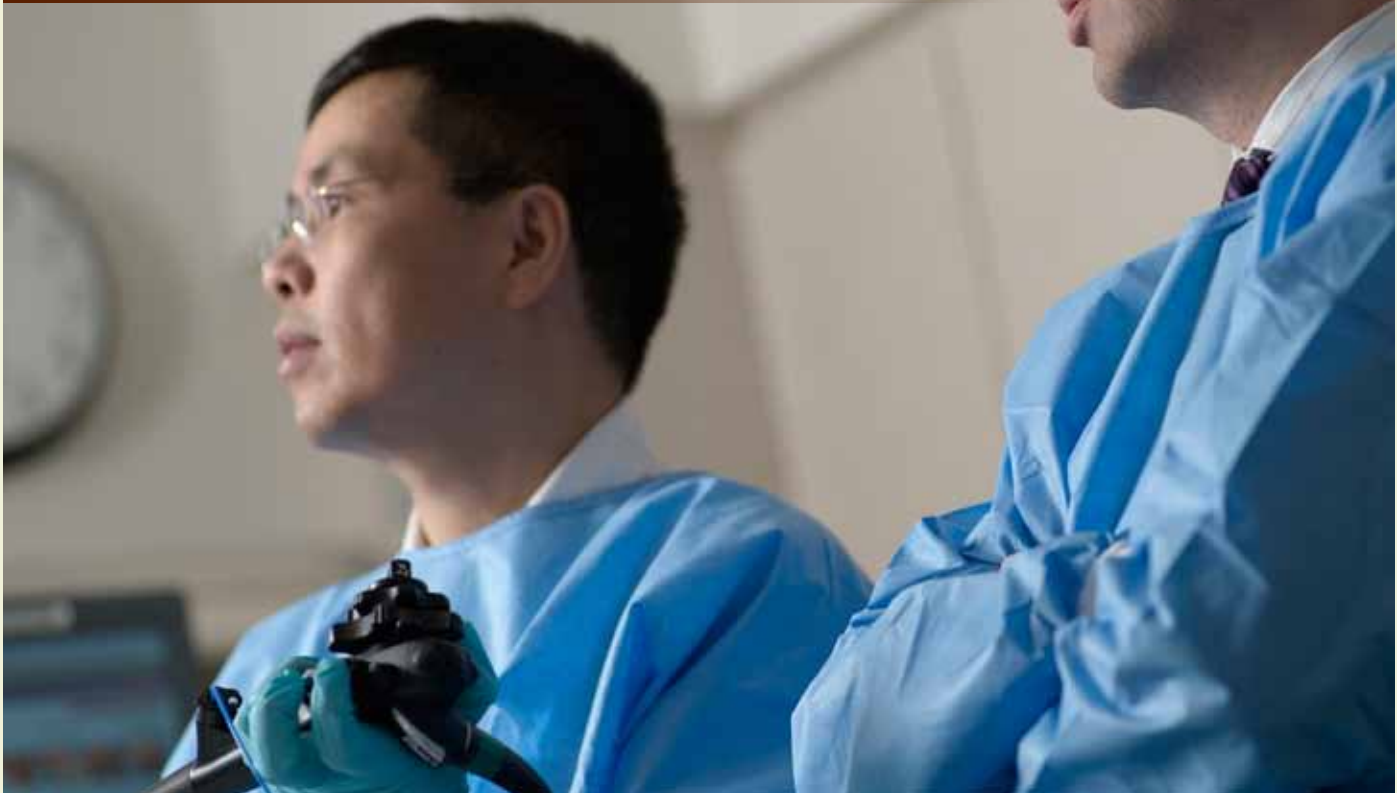
Specialists at the Pouchitis Clinic have also established innovative techniques to classify, diagnose and treat different aspects of pouch-related issues, Dr. Shen says.

"Pouchitis used to be a mixed bag of everything together," explains Dr. Shen. "Now, we subclassify them based on etiology, disease mechanism, clinical presentations and disease course. If we have the correct classification, there's the proper solution. It's a much more analytical approach to diagnosis and treatment."

The infrastructure of the Pouchitis Clinic has also helped clinicians when diagnosing new categories of diseases of the pouch. Those include irritable pouch syndrome, afferent and efferent limb syndrome, ischemic pouchitis, autoimmune pouchitis, immunoglobulin G4 (IgG4)-associated pouchitis and primary sclerosing cholangitis (PSC)-associated pouchitis.

One of the biggest challenges is that there's no FDA-approved medication for any pouch disorders," Dr. Shen says. "Current therapy is largely empiric. Basically, we have been using established treatments for the new 'indications.' " One of the more recent breakthroughs is the use of supercharcoal to treat pouchitis by absorbing

*“Pouchitis used to be a mixed bag of everything together. Now, we subclassify them based on etiology, disease mechanism, clinical presentations and disease course. If we have the correct classification, there’s the proper solution. It’s a much more analytical approach to diagnosis and treatment.” – Bo Shen, MD*



**Bo Shen, MD**, (pictured left) and **Feza H. Remzi, MD**, Chairman of Colorectal Surgery.

bacterial toxins rather than destroying the bacteria. Doctors at the Pouchitis Clinic are also seeing positive results with the use of intravenous immunoglobulin treatment for pouchitis. And the Pouchitis Clinic has become the leader in the therapeutic use of pouch endoscopies. The specialists in the Pouchitis Clinic have developed novel endoscopic approaches to pouch disorders, including endoscopic balloon dilation therapy and needle knife therapy to treat strictures, and needle knife therapy to treat pouch anastomotic leaks and sinuses. They perform 400 to 500 therapeutic endoscopies for pouch disorders

each year, the majority of which are performed in an outpatient setting.

Pouchitis Clinic specialists are also currently studying the bacterial profile of the pouch, hepatobiliary disorders’ impact on the pouch, and cancer risk for pouch patients. “Innovative thinking and research continues to bring proven results to our patients,” Dr. Remzi says.

To refer a patient to the Pouchitis Clinic, call 216.444.7000. Contact Dr. Remzi at 216.445.5020 or [remzif@ccf.org](mailto:remzif@ccf.org) and Dr. Shen at 216.444.9252 or [shenb@ccf.org](mailto:shenb@ccf.org). ■

# 60%

The Pouchitis Clinic is home to approximately 60 percent of the pouchitis research conducted in the United States.

COVER FEATURE

# Pelvic Floor Center





## {Providing innovative treatments for complex and reoperative cases}

How is Cleveland Clinic's Pelvic Floor Center, the Colorectal Center for Functional Bowel Disorders, improving care for patients? Here, Tracy L. Hull, MD, Section Head of Pelvic Floor Disorders, discusses why a team approach is essential in these types of complex cases:

### A MULTIDISCIPLINARY APPROACH

"Pelvic floor disorders are not isolated in nature," says Dr. Hull. "Rather, they often involve urological, pain management, gynecologic and colorectal issues. At Cleveland Clinic, we have all of these specialists available as a team that can help sort out the intricacies involved in treating conditions such as rectal prolapse, constipation, fecal incontinence and rectovaginal fistulae."

The Digestive Disease Institute's Pelvic Floor Center is one of only a few of its kind in the United States that unites all of the specialists needed – including gastroenterologists, urologists, urogynecologists, colorectal surgeons, physical therapists, dieticians and acupuncturists – working together under one roof to find the most effective treatments for patients.

"We truly operate as a team, discussing the hard-to-sort-out details to arrive at the most appropriate treatment options for our patients," Dr. Hull says. "The experience that comes from such collaboration and high volumes helps streamline cases. Our surgeons develop an understanding of each other's skills and habits, which helps manage the unpredictability that occurs during these intricate procedures."

The Pelvic Floor Center also runs a joint colorectal-urogynecology clinic, in collaboration with urogynecologist Beri Ridgeway, MD, for patients needing total pelvic floor reconstruction.

### INNOVATIVE TREATMENTS

The Pelvic Floor Center's team of four colorectal surgeons, which includes Dr. Hull, Brooke Gurland, MD, Massarat Zutshi, MD, and Ursula Szmulowicz, MD, offers innovative treatments not widely available elsewhere.

For example, surgeons at the Pelvic Floor Center have been offering ventral rectopexy for pelvic organ and rectal prolapse – a procedure commonly performed in Europe, but not widely reported in the United States – for the past two years.

Its surgeons also perform a significant portion of their pelvic floor procedures laparoscopically. The group is at the forefront in using robotic technology to improve outcomes and quality of life for patients. Currently, DDI offers many procedures utilizing this innovative technology, including robotic ventral rectopexy, laparoscopic surgery in combination with the urologists and gynecologists addressing all problems during one minimally invasive procedure, surgery for complex rectovaginal fistulae, the STARR procedure for outlet obstruction constipation, and the artificial bowel sphincter.

Internationally known for their expertise in pelvic floor repairs, the surgeons of the Pelvic Floor Center frequently are consulted by surgeons across the nation on difficult cases. They also are widely published in peer-reviewed journals and are invited speakers at both national and international symposia.

# 6

DDI has six physical therapists specially trained in pelvic floor rehabilitation who work closely with our pelvic floor physicians to determine appropriate therapies, especially for patients whose conditions do not respond to conventional methods.

**Photo on left:** (left to right) Ursula Szmulowicz, MD, Brooke Gurland, MD, Beri Ridgeway, MD, Tracy L. Hull, MD, and Massarat Zutshi, MD



SNS FOR FECAL INCONTINENCE

Both Cleveland Clinic's main campus and Cleveland Clinic Florida now offer sacral nerve stimulation (SNS) for fecal incontinence.

Approved by the FDA in March 2011, SNS is like a cardiac pacemaker for the anal sphincter. Surgeons first implant temporary subcutaneous stimulators into the sacral nerve, testing their effectiveness with the patient awake. For those who experience more than a 50 percent improvement in the number of fecal incontinence episodes during a two-week trial, surgeons implant the permanent stimulator in a second procedure.

Treatment with SNS, which was piloted at both Cleveland Clinic sites in clinical trials, can reduce the number of bowel accidents that a patient experiences, and, in some cases, patients become totally continent. SNS has been approved for use in treating urinary incontinence in the U.S. since 1997 and in Europe for both urinary and fecal incontinence since 1994.

CLINICAL AND BENCH RESEARCH

In addition to offering patients the most advanced treatment options, the Pelvic Floor Center is heavily involved in clinical research, including:

- Investigating the criteria for surgery for constipation. Previously, many patients were denied surgery for severe intractable constipation. However, studies done at Cleveland Clinic identified an additional group of patients who could have a successful outcome.

PROGRAM HIGHLIGHTS

- Multidisciplinary approach, including a joint colorectal-urogynecology clinic
- One-stop care
- Internationally renowned experts
- High-volume center
- Innovative treatment options, not widely available elsewhere
- Access to the latest clinical trials

- Investigating the treatment of fecal incontinence using the TOPAS Sling System for Women
- Comparing the functional outcome and quality of life of patients with low rectal cancer who undergo a J-pouch or a side-to-end coloanal anastomosis as a sphincter-saving surgery.
- Comparing the efficacy of a biological implant (Biodesign™ Surgisis® Tissue Repair Graft)

to reinforce an overlapping sphincter repair vs. a standard overlapping sphincter repair.

- Organizing a prospective trial to study whether functional magnetic stimulation enhances gastrointestinal motility in patients with chronic constipation.

Dr. Zutshi's basic science lab is devoted to finding a noninvasive cell-based therapy to treat fecal incontinence. Her most recent work focuses on the homing of stem cells to the site of injury. This study used labeled stem cells to identify whether stem cells given intravenously were attracted to and engrafted at the



## New Center of Excellence

Directed by Dana Sands, MD, Cleveland Clinic Florida's Pelvic Floor Center has been designated a Center of Excellence (COE): Continence Care in Women by the National Association for Continence. Cleveland Clinic Florida is the first medical center on the East Coast and the third in the nation to receive this designation.

site of injury in the anal sphincter muscle complex. The study compared the functional improvement seen after an injection of stem cells given intravenously to that given directly at the site of injury. The study showed that stem cells home to the site of injury and that serial intravenous injections have a better functional outcome than a single direct administration of stem cells into the site of injury.

Prior to this work, the lab investigated the homing of cytokines by studying chemokine upregulation. This study examined SDF-1 and MCP-3 expression following direct injury to the anal sphincter and pudendal nerve, deter-

mining whether these same mechanisms have any role in stem cell homing. Dr. Zutshi's study concluded that direct anal sphincter damage produces higher levels of SDF-1 and MCP-3 expression soon after injury, whereas denervation via a pudendal nerve crush injury results in greater SDF-1 and MCP-3 expression 10 days after injury.

The lab, in collaboration with Anthony Calabro, PhD, also is investigating a scaffold to administer stem cells. ■

To refer a patient to our Pelvic Floor Center, call 216.444.7000 (main campus) or 1.877.463.2010 (Florida). Dr. Hull can be contacted at 216.445.6063 or [hullt@ccf.org](mailto:hullt@ccf.org).

### Recommended Reading

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## Gastroparesis Treatment Options

Cleveland Clinic offers full spectrum, including gastric neurostimulator



Matthew D. Kroh, MD

Gastroparesis is a complex condition that can be complicated to treat due to its variety of causes, among which are diabetes, previous surgery involving the cutting of nerves to the stomach, and post-viral infection. While controlled diet and medication are the first lines of treatment, patients who do not respond to such treatments or who suffer serious medication side effects are sometimes left with the last-resort options of a feeding tube or near-total gastrectomy.

Cleveland Clinic is one of a few medical centers across the country offering gastric neurostimulators (“pacemakers”) for the treatment of gastroparesis. Patients receiving this leading-edge treatment in its Digestive Disease Institute are mainly those with idiopathic gastroparesis or end-stage diabetes that involves other complications, says DDI general surgeon Matthew Kroh, MD.

“Many of these patients are often in ERs due to the effects of the gastroparesis, which can include dehydration, electrolyte imbalances and malnutrition,” Dr. Kroh says. “Some are on TPN or feeding tubes or have lost a significant amount of weight. The gastric neurostimulator can make a huge impact, even just to improve their quality of life.” Generally, symptoms improve or at the very least don’t worsen after implantation of the device, he says.

About 200 patients each year are referred to Cleveland Clinic for this treatment of gastroparesis. Of those, about 25 to 40 are candidates for the gastric neurostimulator, Dr. Kroh says. Generally, diabetics respond better to the neurostimulator than patients with idiopathic or other causes of gastroparesis.

For patients who are not candidates for the gastric neurostimulator, there are other treatment options. Cleveland Clinic offers the full spectrum of medical and surgical treatment for gastroparesis.

“We offer a medical and surgical approach to consultations,” says Cleveland Clinic general surgeon Bipan Chand, MD. “The majority of patients we see do not qualify for the pacemaker, but when we do reevaluate them, we often find an underlying disease causing their gastrointestinal problems. We can then offer medical or surgical treatment.” ■



### About the Gastric Neurostimulator

The gastric neurostimulator involves the implantation of a generator in the abdominal wall. Electrodes are sutured to the stomach, and the device is turned on in the operating room. The “pacemaker” retrains the vagus nerve to properly control the emptying of the contents of the stomach.

Cleveland Clinic is one of only a few medical centers in the United States to implant the device laparoscopically. The patient remains in the hospital for one to two days following the procedure.

Generally, patients return to the hospital about every three months for an adjustment. And it can take about six to nine months for patients to see improvements. The national standard is two years, according to Dr. Kroh. While about 40 percent of patients will have improvement in their symptoms, about 30 to 40 percent will have near complete resolution, he says.

Call 216.444.7000 to refer a patient for gastroparesis treatment. Dr. Kroh can be reached at 216.445.9966 or [kroh@ccf.org](mailto:kroh@ccf.org), and Dr. Chand can be reached at 216.444.6668 or [chandb@ccf.org](mailto:chandb@ccf.org).

## Benefits of an Acute Care Surgical Service



Around 2003, acute care surgery (ACS) emerged as a surgical subspecialty. In an effort to meet the need for emergent surgical services, surgeons trained in critical care and/or trauma began to offer coverage for emergent general surgical cases. Nationwide, ACS services have improved outcomes, resident education and surgeon satisfaction. As such, the ACS model is rapidly being adopted by hospitals across the country.

In July 2010, an ACS service was initiated at Cleveland Clinic's main campus. It is currently comprised of five staff trained in surgical critical care, who are available 24 hours a day to see surgical patients from the emergency department, inpatient wards and hospital transfers. An ACS service has many advantages, including:

### IMPROVED PATIENT CARE

Patients with acute surgical issues are often critically ill. The critical care training of the acute care surgeon is instrumental in caring for these patients who require meticulous fluid management, attention to comorbid conditions, recovery from organ failure and optimization of physiologic derangements. As the American population ages, the acuity of patients with surgical problems can be expected to increase, making critical care training even more important in caring for these patients.

In addition, an ACS service improves the timeliness of patient care and patient satisfaction. At Cleveland Clinic, the ACS service has a dedicated operating room 24 hours a day in which to perform emergent cases promptly, without disturbing the flow of the scheduled OR cases.

### SURGEON SATISFACTION

For the non-ACS surgical subspecialist with a busy elective practice, the presence of an ACS service eliminates the need to "take call" and allows for an uninterrupted operative schedule, thus optimizing practice efficiency.

For the acute care surgeon, schedules are arranged by shifts, generally in 12-hour increments. A team approach to patient care enables a more manageable

lifestyle. Family commitments and other endeavors can proceed without disruption. The case variety is broad and professionally satisfying. In the past year, our most common operations have included exploratory laparotomies (n = 260), wound debridements (n = 170), cholecystectomies (n = 132), tracheostomies (n = 82), appendectomies (n = 74) and herniorrhaphies (n = 72), all addressing a wide variety of underlying pathology.

### ENHANCED RESIDENT & MEDICAL STUDENT EDUCATION

The new ACGME-mandated restricted-duty hours requirement poses challenges for resident education. Residents need to receive the same amount of education in a shorter amount of time through structured teaching and adequate supervision. To meet these needs, many residency programs incorporate a night float system. In-house ACS attendings coupled with an increase in the number of nighttime operative cases facilitate round-the-clock educational activities and experiences for Cleveland Clinic general surgery residents.

The ACS service at Cleveland Clinic continues to develop and evolve. Several research projects examining patient outcomes and resident satisfaction are planned for the year ahead. Since July 2010, the ACS team has served the needs of the critically ill and emergent surgical patients, while enhancing the surgical resident experience. For these patients, the ACS service means a surgeon at their bedside, even in the middle of the night, answering their questions, calming their fears and providing prompt surgical intervention, when needed. ■

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Michele M. Loor, MD, Tony Capizzani, MD, Michael Samotowka, MD, Matthew Moorman, MD, and David Lee, MD, are acute care surgeons in the DDI's General Surgery Department. They can be reached at 216.444.0733. Please address questions to loorm@ccf.org.

## Liver Tumor Clinic Update

Newly established clinic improves patient experience

Since the Liver Tumor Clinic opened in May 2009, it has successfully focused on implementing a unique multidisciplinary team approach to providing comprehensive and customized medical and surgical treatments for patients with liver tumors.

### DIAGNOSES OF PATIENTS SEEN AT LIVER TUMOR CLINIC

Hepatocellular carcinoma

46%

Liver metastasis

32%

Cholangiocarcinoma

8%

Benign tumors

14%

“One of the most important benefits since we established this new Liver Tumor Clinic is that its ‘one-stop’ design has helped improve the patient experience by reducing the time from initial consultation to treatment threefold,” says Federico Aucejo, MD, hepatobiliary and transplant surgeon. “We have accomplished this because now one call triggers the scheduling of appropriate consultations in one place and on the same day.”

#### THE MULTIDISCIPLINARY CONCEPT IN PRACTICE

“One of the essential functions of the Liver Tumor Clinic is our Tumor Board, which includes oncologists, hepatologists, surgeons, radiologists, nurse practitioners and coordinators who meet each week to review and discuss every patient in detail,” explains Charles Miller, MD, Program Director for Liver Transplantation. “These sessions enable our multidisciplinary team to determine the best course of treatment, using well-designed protocols, tailored to each patient’s special needs.”

#### WHAT WE PROVIDE

To date, more than 600 patients have been seen. We have delivered 304 nonsurgical therapies, including 146 transarterial chemoembolizations, 60 transarterial radiotherapies, 25 radiofrequency ablations and 45 systemic chemotherapies. Surgical interventions have included 226 surgeries, including 137 liver resections (open, laparoscopic, robotic) and 89 liver transplantations.

In addition, liver transplantation for hilar cholangiocarcinoma is now being offered to selected patients at the Cleveland Clinic. This treatment is performed only at a few centers in the United States.

Cleveland Clinic is the fourth-largest provider of liver transplants in the U.S. The average wait time for a liver transplant in patients with liver cancer is approximately four to six months, which is roughly half the time compared to other major liver transplant centers in the U.S. What’s more, the survival rate for liver transplant patients after one year exceeds 90 percent.

#### TREATMENT OF ASSOCIATED CONDITIONS

Another benefit of the Liver Tumor Clinic is its ability to treat liver cancer patients who generally have complications related to their primary liver disease, such as cirrhosis, which affects 80 percent of liver tumor patients.

The Liver Tumor Clinic also has established a comprehensive liver tumor database and a tumor tissue bank for various research initiatives that may be instrumental in helping to improve therapies for future patients.

#### TO SCHEDULE AN APPOINTMENT

The Liver Tumor Clinic can now schedule new patient appointments in an expedited fashion. To refer a patient, please call 216.445.8389 or 800.223.2273, ext. 58389.





# InBrief }

## Dr. Wexner elected ASCRS President

**Steven D. Wexner, MD**, Chairman of the Department of Colorectal Surgery, Chief Academic Officer and emeritus Chief of Staff at Cleveland Clinic Florida, has been elected President of the American Society of Colon and Rectal Surgeons. He succeeds David E. Beck, MD, FACS, a Cleveland Clinic alumnus.

Dr. Wexner served a three-year term on the Executive Council (2002-2005) and three years as ASCRS Secretary before becoming President. He also served a two-year term as Vice President of the ASCRS Research Foundation, was a member of the Diseases of the Colon and Rectum Editorial Board from 1998 to 2005, and was Senior Editor of the ASCRS textbook from 2006 to 2011. He also is current President of the American Board of Colon and Rectal Surgeons.

## DDI Welcomes Full-time GI Staff

The Department of Gastroenterology is pleased to announce that four of its fellows are staying on as full-time staff: **Binu John, MD**, hepatology; **Dian Chiang, MD**, hepatology; **Yinghong Wang, MD, IBD**; and **Ashish Atreja, MD**, comprehensive gastroenterology and informatics.

Our Gastroenterology and Hepatology fellowship is a three-year fellowship. Four fellows are admitted to this accredited program each year. The program provides a thorough exposure to clinical gastroenterology and hepatology, including endoscopy, and research opportunities. An NIH-sponsored T32 research fellowship also is available to selected outstanding candidates.

## Dr. Walsh to Lead General Surgery

After an extensive national search, **R. Matthew Walsh, MD**, has been named Chair of the General Surgery Department of Cleveland Clinic's Digestive Disease Institute. Dr. Walsh has served as Interim Department Chair since John Fung, MD, PhD, was named Chair of the Digestive Disease Institute in November 2010.

"Dr. Walsh already has a distinguished career here, clinically, educationally and administratively," says Dr. Fung. "In his new position, I am confident that he will continue to lead the department in these areas, while enhancing the stature of the department regionally and nationally."

In his new capacity, Dr. Walsh will oversee more than 80 employees of the General Surgery Department. He is also a Professor of Surgery at the Cleveland Clinic Lerner College of Medicine at Case Western Reserve University.

Prior to his appointment, Dr. Walsh served in the Department of General Surgery at Cleveland Clinic for nearly 20 years following his training in Chicago, Boston and, finally, under Robert Hermann, MD, at Cleveland Clinic as an HPB surgery fellow. His interests lie in minimally invasive and pancreatic surgery, as well as surgical education.



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At the Digestive Disease Institute, one of 26 institutes at Cleveland Clinic, our colorectal and gastrointestinal specialists serve more than 66,000 patients annually. Innovative procedures and decades of experience enable our physicians to achieve success in preventing and treating the full spectrum of digestive diseases. Cleveland Clinic is a nonprofit, multispecialty academic medical center consistently ranked among the top hospitals in America by *U.S. News & World Report*. Founded in 1921, it is dedicated to providing quality specialized care and includes an outpatient clinic, a hospital with more than 1,300 staffed beds, an education institute and a research institute.

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### DIGESTIVE DISEASE INSTITUTE CHAIR

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### CONTRIBUTING PHOTOGRAPHERS

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## Digestive Disease Institute Access Guide

### SERVICES FOR PHYSICIANS

#### DDI Referrals

[clevelandclinic.org/digestive](http://clevelandclinic.org/digestive)

Colorectal Surgery | Gastroenterology & Hepatology | General Surgery  
Hepato-pancreato-biliary & Transplant Surgery | Human Nutrition

Ohio: 888.410.1775 or 216.444.7000

Florida: 954.659.5278

#### Clinical Trials

Visit [clevelandclinic.org/ddiresearch](http://clevelandclinic.org/ddiresearch)  
for a complete listing of all active clinical trials.

#### Critical Care Transport Worldwide

Cleveland Clinic's critical care transport teams and fleet of mobile ICU vehicles, helicopters and fixed-wing aircraft serves critically ill and highly complex patients across the globe. Call **216.448.7000** or **866.547.1467** or visit [clevelandclinic.org/criticalcaretransport](http://clevelandclinic.org/criticalcaretransport).

#### Track Your Patient's Care Online

DrConnect is a secure online service providing our physician colleagues with real-time information about the treatment their patients receive at Cleveland Clinic. To receive your next patient report electronically, establish a DrConnect account at [clevelandclinic.org/drconnect](http://clevelandclinic.org/drconnect).

### SERVICES FOR PATIENTS

#### Same-day Visits Available

Same-day appointments often are available for urgent cases. All same-day visits will be coordinated through the DDI patient navigator, a registered nurse who will triage all requests for same-day visits to ensure patients receive immediate attention. To arrange a same-day visit, call **216.444.7000**.



#### Medical Concierge

Complimentary assistance for out-of-state patients and families **800.223.2273, ext. 55580**, or email [medicalconcierge@ccf.org](mailto:medicalconcierge@ccf.org)

#### Global Patient Services

Complimentary assistance for national and international patients and families **001.216.444.8184** or visit [clevelandclinic.org/gps](http://clevelandclinic.org/gps)