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Dear Colleagues,

The cover story for this issue of *Digest This* features our Intestinal Rehabilitation and Transplantation Program (IRTP) – a program that has experienced tremendous growth over the past three years.

This program is one of the few programs in the nation that offer comprehensive services for patients with intestinal failure and parental nutrition complication, including intestinal rehabilitation and transplant nutrition, nutrition support, and intestinal transplantation.

Since performing the first adult intestinal transplant in Ohio, the program – which received CMS certification in December 2010 – has performed 18 intestinal transplants. There are currently 46 intestinal transplant programs active in the country, and only 15 are CMS-certified. Cleveland Clinic program is one of only eight programs certified specializing in the care of adult patients. We also have seen a dramatic increase in the number of complex intestinal failure patients treated under the comprehensive care of its gastroenterologists, intestinal rehabilitation and transplant surgeons, colorectal surgeons, anesthesiologists, intensivists, nutritionists, dietitians, psychiatrists and social workers. To learn more about our IRTP program, please see our in-depth look on p.8.

Also in this issue of *Digest This*, you will find the latest on our other DDI services. On p. 3, we highlight our newly formed Comprehensive Gastroenterology Section headed by Chung Tsai, MD, PhD. We also feature our use of the new NanoKnife IRE system to treat patients with pancreatic cancer on p. 4. On p. 6, we offer a photo tour of our newly opened 15,000-square-foot, state-of-the-art advanced endoscopy facility. On p. 1, Steven Wexner, MD, Chair of the Department of Colorectal Surgery at Cleveland Clinic Florida, presents a case study of a rare and complicated case of squamous cell carcinoma of the anal canal that exemplifies the type of expertise and collaboration of our colorectal surgeons and plastic and reconstructive surgeons at Cleveland Clinic Florida.

I hope that you find the information in *Digest This* both interesting and helpful in your practice. Please feel free to contact us at 216.444.5405 if you have any questions or would like to refer a patient. As always, we welcome the opportunity to work with you.

Sincerely,

John Fung, MD, PhD
Chairman, Cleveland Clinic Digestive Disease Institute
Director of the Cleveland Clinic Transplant Center
Professor of Surgery, Lerner College of Medicine
CASE STUDY

Cleveland Clinic Surgeons Provide Comprehensive Surgical and Reconstruction Procedures to Treat Patient with a Rare and Complicated Case of Squamous Cell Carcinoma of the Anal Canal

PRESENTATION
A 65-year-old female presented with rectal pain to Lester Rosen, MD, a Cleveland Clinic Florida colorectal surgeon and Past-President of the American Society of Colon and Rectal Surgeons (ASCRS), on Jan. 8, 2009. For the previous two months, she unsuccessfully attempted to abate her pain by applying creams and suppositories. However, the patient also reported experiencing frequent bloody bowel movements. Dr. Rosen's initial examination of the patient revealed an anal mass. Subsequently, a biopsy of the lesion was ordered, which revealed squamous cell carcinoma of the anal canal on Jan. 12. The patient underwent a CT scan of her chest, abdomen and pelvis, but no metastatic disease was detected.

TREATMENT
The patient elected to undergo comprehensive radiation and chemotherapy at another institution. Following that treatment, she had a follow-up visit with Dr. Rosen on May 19. The patient reported that she was still experiencing pain, increased bowel frequency and occasional episodes of fecal incontinence. A physical examination identified a residual mass in the anal sphincter. A PET/CT scan identified a 3.2 by 2.1 cm metabolically active mass in the anal canal. A biopsy conducted on July 27 revealed the patient had a persistent squamous cell carcinoma that also invaded the posterior vaginal wall. Additionally, the patient had a rectovaginal fistula.

Steven Wexner, MD, chair of the Department of Colorectal Surgery at Cleveland Clinic Florida and President-Elect of the ASCRS and President of the American Board of Colon and Rectal Surgery, met with the patient and recommended that she undergo comprehensive surgery that would be performed in three stages on the same day. The first stage would resect the aggressive lesion. In the second stage, a vaginectomy would be performed, and the third stage would reconstruct the patient's vagina.
On Aug. 19, Dr. Wexner performed the abdominoperineal resection with colostomy creation. He also performed a posterior vaginectomy with closure of the rectovaginal fistula.

The perineal and vaginal reconstruction was performed by Martin I. Newman, MD, a surgeon with the Department of Plastic and Reconstructive Surgery at Cleveland Clinic Florida. The reconstruction was accomplished using a vertical rectus abdominus myocutaneous flap, also known as a VRAM flap.

Finally, pathology results of the resected specimen showed margins free of cancer, and all resected lymph nodes also tested negative for malignancy. The patient’s follow-up visit with Dr. Wexner on Oct. 21 showed excellent healing. Her level of satisfaction with her care at Cleveland Clinic Florida remains high.

DISCUSSION
Squamous cell carcinoma of the anal canal is a very rare condition. According to the American Cancer Society, there were 5,260 new cases (3,260 in women and 2,000 in men) in 2010. The mortality rate also was low, with 720 deaths (440 in women and 280 in men).

More than 85 percent of patients diagnosed with squamous cell carcinoma of the anal canal respond positively to a comprehensive course of radiation and chemotherapy, and most patients do not require surgery. Nevertheless, there is a small subset of patients who may need surgery to resect any persistent lesion following radiation and chemotherapy. In addition, there is a very small subset of patients who have aggressive anal canal lesions that tend to invade other organs.

In this case, the anal canal lesion had invaded the posterior wall of the vagina, which meant a life-altering surgery for the patient. Cleveland Clinic’s interdisciplinary resources and coordination of surgical procedures, however, were able to provide the patient with abdominoperineal resection and vaginectomy procedures, which were immediately followed by a complete perineal and vaginal reconstruction that should improve the patient’s overall quality of life.

Although the patient maintains a colostomy, she may become a candidate for a coloperineal anastomosis with neosphincter reconstruction. This investigational procedure protocol has been approved by Cleveland Clinic’s Institutional Review Board. The fundamental steps of Dr. Wexner’s protocol involve converting the colostomy to a coloperineal anastomosis, which is protected by a temporary ilealostomy. The gracilis muscle is then transposed around the neoanus as a graciloplasty. Finally, an artificial bowel sphincter is created.

In order for the patient to be eligible for surgery, she must remain disease free for two years.
SPECIAL FEATURE

Introducing Our New Section of Comprehensive Gastroenterology

The Digestive Disease Institute’s Department of Gastroenterology & Hepatology has added a new section, the Section of Comprehensive Gastroenterology, headed by Chung Tsai, MD, PhD. Dr. Tsai, an accomplished gastroenterologist with more than 20 years in the field, recently joined Cleveland Clinic from the University of Kentucky Medical Center to lead the Comprehensive Gastroenterology Section.

COMPREHENSIVE GI
This new section was created to provide specialized care for digestive disorders, particularly to focus additional resources on typically underserved conditions, Dr. Tsai explains.

“Cleveland Clinic’s DDI has many well-established sections and centers, including those for inflammatory bowel disease, swallowing disorders and nutrition,” he says. “This new section will provide additional specialized services in addition to increasing research in outcomes and clinical epidemiology.”

Among its first plans, the new section is establishing a new clinic for small bowel disease, including celiac disease, Dr. Tsai says. It has been receiving many referrals for refractory celiac disease and small bowel disease.

SMALL BOWEL CLINIC
Dr. Tsai specializes in balloon-assisted enteroscopy, spiral enteroscopy and capsule endoscopy. Establishing a Small Bowel Clinic is a natural extension of the expertise already existing within the Department of Gastroenterology & Hepatology, Dr. Tsai says, as it is an area where the new section’s staff has particular expertise and interest, and there is an increasing need for managing complex celiac disease and complex small bowel disease.

“We are a large referral center for both capsule endoscopy and balloon-assisted enteroscopy – both of which are new and very useful tools for diagnosing small bowel disease and managing its complications,” he explains. Complex complications, such as small bowel bleed, refractory celiac disease, intestinal polyps and tumors, and intestinal angiodysplasia, can be helped through the collaboration of multiple specialists from both the institute and the entire institution.

Dr. Tsai, who has a background in nutritional science and epidemiology, has a particular interest and expertise in celiac disease, which is the most common disease affecting the small bowel in the U.S., affecting roughly 1 percent of the population. Creating more resources for patients who suffer from this autoimmune disorder is important because the demand for services is increasing.

“We don’t know why it is becoming more common in this country,” Dr. Tsai says. “It could be a change in the environment. But the clinical epidemiology show that the prevalence has increased compared to two decades ago and it is increasingly diagnosed in patients who are older. We don’t know if it’s a new phenomenon, if the disease has been there for many years in these patients without any clinical manifestations or whether the disease was simply unrecognized. We need more data for ongoing research.”

In addition to Dr. Tsai’s expertise, celiac patients can draw upon the Center for Human Nutrition’s large nutritionist staff and other Cleveland Clinic specialists for managing symptoms affecting other organ systems, such as osteoporosis, infertility, skin rashes, low energy and fatigue.

The Center for Human Nutrition is one of the only centers in the nation offering comprehensive services including specialized teams for nutrition therapy, intestinal rehabilitation, and transplant nutrition and nutrition support. It recently also expanded its team, with the addition of Gail Cresci, PhD, RD, CNSD, LD, a nutrition researcher with a special interest in gut microbiota and its influence on overall health, who joined the DDI from the Medical College of Georgia.

REFERRALS
You can refer patients by calling 216.444.7000. Dr. Tsai can be reached at tsaic@ccf.org.
Irreversible Electroporation Technology

Cleveland Clinic investigates new NanoKnife IRE system to treat patients with pancreatic cancer

Cleveland Clinic is in the early phases of investigating the efficacy of irreversible electroporation treatment (IRE), a new, nonthermal ablation technology that precisely targets and terminates soft tissue lesions while preserving nearby vital structures such as blood vessels, bile ducts and nerves.

The NanoKnife IRE system was developed at the University of California, Berkeley. It is licensed by Angio-Dynamics Inc. of Latham, N.Y. In 2008, the minimally invasive device was approved for use by the U.S. Food and Drug Administration for surgical ablation of soft tissue. Currently, Cleveland Clinic is among 17 medical institutions in the U.S. that are utilizing the NanoKnife IRE system to treat certain cancer patients.

TARGETING CANCER CELL MEMBRANES

“The principle of the NanoKnife IRE system is that it produces a series of microsecond electrical pulses that open nano-sized pores in the cancer cell membranes,” says Sricharan Chalikonda, MD, a Cleveland Clinic surgical oncologist. “This causes irreversible damage to the cells and initiates apoptosis. When the cells die, they are removed by the body’s lymphatic system.”

“The limitation, until now, has been if a lesion was very close to vital structures, we were unable to resect the lesion or even use cryoablation or thermal radiofrequency ablation because these modalities risked injuring adjacent vital structures such as blood vessels, bile ducts or the bowel,” explains Dr. Chalikonda. “What irreversible electroporation technology offers is the opportunity to be able to treat many more patients who have soft tissue lesions because the NanoKnife IRE system is nonthermal, which eliminates the risk of injuring surrounding vital structures.”

In December 2010, Dr. Chalikonda performed the first surgery in Ohio using the NanoKnife IRE system on two patients with a diagnosis of pancreatic cancer. Previously, they were not considered surgical candidates because their tumors invaded larger blood vessels around the aorta and the superior mesenteric artery. Lesions for both patients were successfully ablated.

However, Dr. Chalikonda cautions that the use of the NanoKnife IRE system for pancreatic cancer is only an investigational modality, emphasizing that it is too early to determine the clinical significance of the new device for this particular disease state.

HOW THE NANOKNIFE IRE SYSTEM WORKS

The NanoKnife IRE system is a minimally invasive medical technology that uses proprietary treatment planning software, enabling a precise calculation of the tissue volume and shape within the ablation zone.

While the patient is under general anesthesia, the surgeon utilizes CT or ultrasound guidance to position two or more single electrode probes, or one bipolar probe, in or around the targeted lesion. The NanoKnife IRE system generates an electrical field between the probes. A series of microsecond pulses actuate irreversible electroporation leading to apoptosis in all cells within the calculated ablation zone while adjacent critical structures remain functional. The IRE procedure is usually completed within a few minutes, depending on the size and shape of the lesion.

The patient is typically released after an overnight hospital stay. Every few months, imaging tests are conducted to monitor the patient’s condition.

Although the NanoKnife IRE system has not been evaluated in a randomized, controlled clinical trial, Cleveland Clinic is participating in a multicenter registry and is planning to create a formal study to evaluate the efficacy of the NanoKnife IRE system. At other medical institutions, the NanoKnife IRE system has been used to treat cancers of the liver, kidney, lung and prostate.

“We are currently offering IRE as an alternative treatment for certain patients, and we are looking for patients with unresectable soft tissue lesions,” says Dr. Chalikonda. “Every patient will be evaluated individually to determine if they are surgical candidates for this new treatment.”

For more information, please contact Dr. Chalikonda at 216.445.0056 or chaliks@ccf.org.
Cleveland Clinic to Open Intuitive Surgical Training Center

Technology improves precision, range of motion, dexterity and visualization

Cleveland Clinic is planning to open an Intuitive Surgical Training Center that will provide surgeons with professional training on the da Vinci Surgical System (Intuitive Surgical, Sunnyvale, Calif.), a robotically assisted surgical system that is currently being used to treat a wide range of conditions.

“The center will hold one- and two-day training sessions for surgeons who are not familiar working with the da Vinci Surgical System,” says DDI general surgeon Matthew D. Kroh, MD, who is one of the leaders of the training effort. “After surgeons complete the training, they will receive certification from Intuitive Surgical, the manufacturer of the da Vinci Surgical System.”

Surgeons at Cleveland Clinic are at the forefront of using robotic technology to improve outcomes and quality of life for patients. Currently, DDI offers many procedures utilizing this innovative technology, including robotic Nissen fundoplication, robotic colectomy, robotic pancreaticoduodenectomy, robotic hepatic resection and single-incision (scarless) cholecystectomy.

In addition to educating surgeons on the key features, preparation and management of the da Vinci Surgical System, the training program combines didactic session and a structured, hands-on laboratory session. The curriculum emphasizes surgical team roles and responsibilities, as well as emergent techniques for optimizing robotic assisted minimally invasive surgery.

“The da Vinci Surgical System is a highly sophisticated and valuable tool that provides surgeons with increased technical capabilities for minimally invasive procedures while maintaining the same look and feel of open surgeries,” explains Dr. Kroh.

According to Intuitive Surgical, some of the major benefits experienced by surgeons using the da Vinci Surgical System over traditional approaches have been greater surgical precision, increased range of motion, improved dexterity, enhanced visualization and improved access. For patients, benefits may include a shorter hospital stay, less pain, less risk of infection, less blood loss, fewer transfusions, less scarring, faster recovery and a quicker return to normal daily activities, compared with open procedures.

The training program also will offer independent da Vinci proctoring, which will provide opportunities for novice da Vinci surgeons to perform their initial procedures under the guidance of experienced surgeons.

The first training sessions of Cleveland Clinic’s Intuitive Surgical Training Center will be posted on the Center for Surgical Innovation, Technology and Education cSite, http://csite.clevelandclinic.org.
DDI’s advanced endoscopy team opened a brand-new, 15,000-square-foot facility on the third floor of the Q building in January 2011 built to improve both access and patient experience.

Our new unit features:

- Four suites that double the amount of therapeutic endoscopy space for performing ERCP, EUS and deep enteroscopy
- 3-D cholangiography, which is available at only a handful of units nationally
- Private recovery rooms equipped with TVs and seating for family members

A State-of-the-Art Endoscopy Unit
Intestinal Rehabilitation and Transplantation

Providing expert, one-stop care for patients with intestinal failure and parental nutrition complications
In the United States, an estimated 30,000 patients have intestinal failure that requires total parenteral nutrition, either due to short bowel syndrome (SBS), motility disorders or intra-abdominal non-metastasizing tumors. Cleveland Clinic’s Intestinal Rehabilitation and Transplant Program (IRTP) is one of the few programs in the nation that offer comprehensive services, providing patients with a unique opportunity to be evaluated, supported and treated by a world-class team of medical and surgical specialists in gastrointestinal diseases, total parenteral nutrition (TPN) experts and transplant surgeons all under one roof.

Having all of these pieces of the puzzle, says Donald Kirby, MD, is critical to the successful treatment of intestinal failure patients to not only maximize their quality of life, but also to select the best candidates for transplantation.

“Today, many patients can do very well on TPN without ever needing a transplant. The techniques we use for bowel optimization, which can include diet, medication and surgery, really let us improve intestinal function in the majority of patients and allow us to offer transplantation to those that we can’t quite get to optimum, or who may have other issues,” says Dr. Kirby, Director of the Digestive Disease Institute’s Center for Human Nutrition, which houses Cleveland Clinic’s intestinal rehabilitation and transplant nutrition, and nutrition support teams.

ESTABLISHED LEADER IN REHAB AND TRANSPLANT NUTRITION

Cleveland Clinic has one of the largest and most successful intestinal rehabilitation programs in the world. The program provides a comprehensive range of services for patients diagnosed with severe gastrointestinal dysfunction or failure.

“Our expertise in intestinal rehab and nutrition support, in part, stems from the fact that Cleveland Clinic is an internationally recognized leader in treating inflammatory bowel disease (IBD),” Dr. Kirby explains. “Patients with intestinal failure very often have short bowel syndrome, although we also see patients with adequate bowel length whose intestines are unable to adequately absorb nutrients and they become malnourished.” The IRTP dietitians work with the physicians to perform an individualized clinical assessment of each patient. Specifically, the absorptive capacity of the gastrointestinal tract is determined and the patient is examined for the development of any nutritional deficiencies, explains Neha Parekh, MS, RD, LD, CNSD.

“We continually search for ways to help patients improve the function of their bowel and restore them to a more normal life,” says Ms. Parekh, IRTP Nutrition Manager. There are essentially two ways of optimizing intestinal function in patients with intestinal failure: medical/dietary treatment and surgical treatment, Parekh says. Medical/dietary treatment includes diet modifications, enteral feedings, medications and growth factors that are prescribed to improve digestive and absorptive function of the remaining bowel. A small number of patients are found to have out-of-circuit bowel as a result of previous surgery that can be put back in continuity with the bowel that is exposed to food, so that absorptive function can be improved.

New surgical procedures, such as STEP, Bianchi and tapering procedures, also are offered to enhance the residual intestinal function. If existing medical and surgical treatments do not improve the intestinal function, parenteral nutrition (PN) is the next step considered.

2008

Cleveland Clinic performs the first adult intestinal transplant in Ohio
“In the last 10 years, the outcomes of intestinal transplant have been dramatically influenced by the use of newer and more effective antirejection drugs. Currently, Cleveland Clinic is the only hospital in Ohio to perform adult intestinal transplants and is among only a few in the United States to do so.” – Cristiano Quintini, MD

Over the past three years, the IRTP has seen a dramatic increase in the number of complex intestinal failure patients treated under the comprehensive care of its gastroenterologists, intestinal rehabilitation and transplant surgeons, colorectal surgeons, anesthesiologists, intensivists, dietitians, psychiatrists and social workers. The majority of these patients were transferred from out-of-state institutions.

GROWING INTESTINAL TRANSPLANT PROGRAM

When conservative measures fail, intestinal transplant is considered. Since its program was established in June 2008, 18 intestinal transplants have been performed to date. As a result, the program received CMS certification for adult intestinal/multivisceral transplantation, effective Dec. 15, 2010.

Three types of intestinal transplantations are performed: isolated small bowel transplantation, combined liver and small intestine transplantation, and multivisceral transplantation.

“In the last 10 years, the outcomes of intestinal transplant have been dramatically influenced by the use of newer and more effective antirejection drugs,” explains Cristiano Quintini, MD, Director of the Intestinal Rehabilitation and Transplant Program. “Currently, Cleveland Clinic is the only hospital in Ohio to perform adult intestinal transplants and is among only a few in the United States to do so.”
In 2010, the IRTP performed the first kidney and intestine transplant in Ohio. Dr. Quintini and Koji Hashimoto, MD, Federico Aucejo, MD, and Venkatesh Krishnamurthi, MD, performed the landmark procedure during a single operation that lasted more than 10 hours. The patient has recovered well, is off dialysis and is eating normally for the first time in years.

A total of 515 patients were evaluated by the IRTP in 2010. Of those, 105 were screened for intestinal transplant and nine were evaluated for transplant. A total of 10 patients underwent intestinal transplant in 2010 (including one previously evaluated for transplant in 2009). The remaining patients were treated with diet interventions and medical treatment.

To accommodate the increase in out-of-state patient interest and referrals, the IRTP now offers MyConsult Online Medical Second Opinion for adult and pediatric patients (clevelandclinic.org/myconsult). Following a thorough review of a patient’s medical records and diagnostic tests, staff can render a medical second opinion that includes treatment options or alternatives, as well as recommendations regarding future therapeutic considerations. Additionally, staff participate in telemedicine videoconferencing – a technology that enables them to interact with patients via Skype™ to avoid unnecessary travel on the part of the patient.

To better serve potential patients, a 24-hour referral line (216.312.0308) also enables prospective patients and referring physicians to reach an IRTP member at any time.

For more information on the Intestinal Rehabilitation and Transplant Program or to receive copies of our brochure for your patients, email digestinfo@ccf.org.

**At a Glance**

**CLEVELAND CLINIC FLORIDA**

Our Nutritional Support Program provides:

- enteral and parenteral nutrition services
- management of patients with short bowel syndrome and gastrointestinal/nutritional complications
- expertise in areas including celiac disease and radiation enteritis

**PATIENTS WHO COULD BENEFIT FROM INTESTINAL REHABILITATION INCLUDE THOSE:**

- with short bowel syndrome (SBS)
- with intestinal failure or severe gastrointestinal dysfunction
- on TPN with multiple-line catheter infections
- struggling to maintain their weight or nutritional status (including hydration) without relying on intravenous fluid
- having repeated episodes of IBD that interfere with maintaining a normal nutritional status
- with chronic diarrhea, dehydration or weight loss due to malabsorption
Combined Kidney and

CRISTIANO QUINTINI, MD
– DIRECTOR, INTESTINAL REHABILITATION & TRANSPLANT PROGRAM (IRTP)
– ASSISTANT PROFESSOR OF SURGERY
– HEPATO-PANCREATO-BILIARY AND TRANSPLANT SURGERY

CHRISTINE SHAY-DOWNER, RN, BSN, CCTC
– INTESTINAL TRANSPLANT COORDINATOR
– INTESTINAL REHABILITATION AND TRANSPLANT PROGRAM

PRESENTATION
In January 2008, a 34-year-old, 5'2", 53-kg woman was referred to our Intestinal Rehabilitation and Transplant Program (IRTP) for an intestinal transplant. Her past medical history was characterized by idiopathic kidney failure when she was 22 years old. She was started on peritoneal dialysis that was complicated by encapsulating peritoneal sclerosis with physiology of chronic obstruction. She received a living-donor kidney transplant in 2005 from her father, but her chronic obstruction symptoms continued to progress.

Her intestinal failure led to total parenteral nutrition (TPN) in March 2005. Even when on TPN, the patient's life was characterized by constant nausea and multiple episodes of vomiting on a daily basis shortly after any attempt to ingest food or fluid.

The intestinal failure, with the recurrent episodes of obstruction along with the dehydration deriving from vomiting, caused chronic kidney graft dysfunction, as evidenced by increasing creatinine levels.

EVALUATION
The patient was worked up for combined kidney and intestinal transplant and her case was presented at both the kidney and intestinal multidisciplinary committee meetings. The committees include a multitude of disciplines such as gastroenterology, nephrology, transplant surgery, transplant anesthesia, infectious disease, social work, psychiatry and ethics, as well as others individualized to the patient's medical condition and care. She was found to be a good transplant candidate for a combined procedure and was placed on our waiting list for both kidney and intestinal transplant surgery.

AWAITING TRANSPLANTATION
The patient was listed for combined kidney/intestinal transplant surgery on Jan. 26, 2010. Liver dysfunction is not uncommon for patients on long-term TPN, and our patient did have persistently mild liver function test abnormalities. A transjugular liver biopsy was completed that showed mild macrovesicular steatosis consistent with clinical history of TPN-induced disease, but no portal hypertension was evident. She remained stable from this standpoint.

TRANSPLANTATION
Combined kidney/intestinal transplantation requires thorough consideration due to several factors. First and foremost, it is a technically difficult operation. Potential complications could permanently jeopardize the transplanted kidney, and severe rejection is always a possible event in intestinal transplantation. Furthermore, the patient had a very small abdominal domain due to her history of encapsulating peritoneal sclerosis. Small donors, such as pediatric donors whose organs could easily fit in a small abdomen, are allocated to pediatric patients, thereby increasing dramatically the waiting time and waitlist mortality for adult patients.

Our patient received her combined kidney and intestinal transplant on Oct. 14, 2010, with the kidney portion being led by Venkatesh Krishnamurthi, MD. After a four-day ICU stay, the patient was transferred to the floor. She was discharged 23 days after her transplant, on a regular diet without TPN or tube feeding supplementation. Her postoperative course was complicated by a mild intestinal transplant rejection that resolved promptly with medical treatment.
FOLLOW-UP
She had an excellent recovery and returned to her daily activity soon after her discharge. One other episode of mild rejection required an increase in her immunosuppression. Other minor postoperative complications included a chylous leak, which resolved with temporary TPN, and a mild episode of obstruction most likely due to her improved intestinal function and increased response to antidiarrheal medications.

DISCUSSION
The IRTP performed its first intestinal transplant in July 2008. Since then 18 transplants have been performed, with an overall patient survival rate close to 70 percent. In 2010, 10 intestinal transplants were performed, including the combined kidney and intestinal transplant described above.

A total of 515 patients were evaluated by the IRTP staff in 2010. Of those, 105 were screened for intestinal transplant and nine completed the evaluation process. Ten patients received an intestinal transplant (including one who had been evaluated in 2009) and the remaining were treated with diet interventions and medications.

On Dec. 15, 2010, the Cleveland Clinic Intestinal Rehabilitation and Transplant Program (IRTP) received CMS certification. This accreditation, which is granted only to transplant programs that meet strict volume and quality criteria, represented a prestigious achievement and is expected to facilitate patients' access and promote referral to the program.

There are currently 46 intestinal transplant programs active in the country, and only 15 are CMS-certified. Cleveland Clinic program is one of only eight certified programs specializing in the care of adult patients.

The IRTP offers advanced medical and surgical treatment to patients with intestinal failure. The team is staffed by dedicated surgeons, gastroenterologists, nurses, advanced practitioners, dieticians and social workers who interact closely with other specialties within Cleveland Clinic Digestive Disease Institute (DDI).

With the newly certified intestinal transplant program, Cleveland Clinic Transplant Center becomes one of the largest and most comprehensive transplant centers in the country able to offer all solid organ transplants and composite tissue transplants.

If you have any questions or would like to refer a patient, feel free to contact the Intestinal Rehabilitation and Transplant Program (IRTP) at 216.445.1748.
InBrief

Cleveland Clinic Now Offers Intraoperative Electron Radiotherapy

When colorectal surgeons and oncologists can't reach tumor cells with a scalpel, they are now able to offer colorectal patients another option: Intraoperative Electron Radiotherapy (IOERT).

Cleveland Clinic recently acquired the Mobetron (IntraOp Medical Corporation, Sunnydale, Calif.), a mobile, self-shielded electron linear accelerator that can send high-frequency radiation directly into the surgical cavity, allowing for a targeted approach to radiation therapy.

One of the main advantages of Mobetron is that it is small and lightweight enough to fit within existing operating rooms, allowing the radiation oncologist and surgeon to work more closely on treatment planning. This means that both physicians have the benefit of viewing the tumor bed and surrounding structures firsthand and can make any necessary adjustments in real time. Mobetron’s small size also eliminates the need for transporting the patient between operating rooms, resulting in quicker delivery of radiation with better results. If you would like to refer a patient for the BOD POD, please contact 216.444.3046 or toll-free 800.223.2273, ext. 43046.

BOD POD Available for Evaluating Body Composition

Cleveland Clinic recently added the BOD POD to the available tools that the Center for Human Nutrition uses to help determine patients' body composition and nutritional status.

The BOD POD Gold Standard Body Composition Tracking System (Life Measurement, Inc., Concord, Calif.) uses patented air displacement plethysmography and whole-body densitometry to specifically determine body composition, including fat and fat-free (lean) mass in adults.

The method has been studied and reported to be as accurate as the gold standard of underwater weighing. An accurate body composition can assist in identifying shifts in fat and lean body mass, and aid in tailoring individual nutrition care plans.

The testing, which takes about five minutes, also determines resting metabolic rate (RMR) and total energy expenditure (TEE) as optional components of every body composition test. Candidates for a BOD POD measurement of body composition include a wide variety of ambulatory patient types:

1) patients at risk for over- or undernutrition,
2) patients with metabolic and/or digestive disorders precluding their ability to process nutrients appropriately, and
3) patients interested in exploring all available tools to maintain a healthy lifestyle.

If you would like to refer a patient for the BOD POD, please contact 216.444.3046, or toll-free 800.223.2273, ext. 43046.
Cleveland Clinic Fellows Take GI Jeopardy Contest

Cleveland Clinic came out on top in the 2010 national GI Jeopardy competition at the ACG meeting in San Antonio, Texas.

Bringing home the bragging rights were Gastroenterology Fellows Binu John, MD, and Amit Bhatt, MD, who competed before a live audience in the final round. They represented one of the five highest-scoring programs, which get invited to the finale to answer questions “Jeopardy” style.

The game, introduced by the American College of Gastroenterology in 2004, is designed as a friendly competition among GI training programs across the country.

Cleveland Clinic took first place over Massachusetts General Hospital and the University of Michigan, Ann Arbor, which came in second and third place, respectively. The winners received a trophy for their fellowship program and a travel grant for each team member.

The next competition begins July 11 and culminates with the live competition Oct. 29 and 30 at the ACG Postgraduate Course being held in Washington, D.C.

50 Years of Wound, Ostomy, Continence Education

Founded 50 years ago, Cleveland Clinic’s R. B. Turnbull Jr., School of Wound, Ostomy, Continence (WOC, formerly Enterostomal Therapy ET/WOCN) Nursing Program was the first of its kind in the world. Since then, it has graduated about 10,000 WOC nurse specialists practicing throughout the world.

On April 20, 2011, the school’s 50th anniversary will be celebrated with a special program: “Past, Present, Future: Spanning 50 Years of WOC Nursing Education.”

The school is named for the late Dr. Rupert Turnbull, a colorectal surgeon at Cleveland Clinic who developed the concept of enterostomal therapy in 1958 when he recognized the rehabilitative value of providing patients with specialized, one-on-one support and instruction. Akron native Norma Gill, herself an person with an ostomy, was the first ET and worked with Dr. Turnbull to advance the specialty worldwide.

Today, the well-established, well-known and highly respected school continues to educate nurses to provide care of patients with abdominal stomas, dermal wounds, pressure ulcers, incontinence and related skin conditions.

To learn more or to register for the 50th anniversary program, visit www.ccfcme.org/WOCNursing11.
**Actively Enrolling Clinical Trials**

The trials below are highlights of the nearly 200 trials open at the Digestive Disease Institute:

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<td>Prevalence of Celiac Disease in Patients with Cirrhosis of the Liver</td>
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<td>A Phase 2, Randomized, Multicenter, Placebo-Controlled, Double-Blind, Parallel-Group Study to Evaluate the Efficacy, Safety and Population Pharmacokinetics of Once-Daily Oral E5501 Tablets Used Up to 7 Days in Subjects with Chronic Liver Diseases and Thrombocytopenia Prior to Elective Surgical or Diagnostic Procedures</td>
<td>Nizar Zein, MD</td>
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<td>A Randomized Controlled Clinical Trial of Low-Dose Thymoglobulin and Extended Delay of Calcineurin Inhibitor Therapy for Renal Protection after Liver Transplantation</td>
<td>John Fung, MD, PhD Bijan Eghtesad, MD</td>
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<td>Enhancing DCD Utilization with Thrombolytic Therapy</td>
<td>Bijan Eghtesad, MD</td>
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<td>A Prospective Investigation of the Use of the Intuitive Surgical VeSPA Instruments and Accessories in a Representative Single-Incision Laparoscopic Procedure</td>
<td>Matthew D. Kroh, MD</td>
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<td>A Phase 3, Randomized, Placebo-Controlled, Blinded, Multicenter Study of the Induction and Maintenance of Clinical Response and Remission by MLN0002 in Patients with Severe Crohn’s Disease</td>
<td>Bret Lashner, MD</td>
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<td>Laparoscopic Resection vs. Open Resection for Rectal Cancer</td>
<td>Luca Stocchi, MD Steven Wexner, MD</td>
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<td>David Dietz, MD</td>
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<td>Massarat Zutshi, MD Dana Sands, MD</td>
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<td>Arthur McCulloough, MD</td>
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<td>David Barnes, MD</td>
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<tr>
<td>A Pilot Study of Pentoxifylline for the Treatment of Primary Biliary Cirrhosis</td>
<td>Claudia Zein, MD, MSc</td>
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</table>

For more information or to refer a patient to any of the above-listed trials, please call 216.636.5340 or visit clevelandclinic.org/ddiresearch.
CME Calendar

Medical professionals are invited to attend the following continuing education programs:

Health Care Quality Innovation Summit: Optimizing Value and Securing a Future of Innovation and Quality
May 11-13, 2011
Cleveland Clinic, Cleveland, Ohio

Advances in Single-Port Surgery: New Laparoscopic and Robotics Approaches: 3rd Annual Multidisciplinary Hands-On Course
June 3-4, 2011
Cleveland Clinic, Cleveland, Ohio

23rd Annual Intensive Review of Internal Medicine
June 12-17, 2011
Cleveland Clinic, Cleveland, Ohio

Turnbull Colorectal Symposium
Sept. 23, 2011
Ritz Carlton Hotel, Cleveland, Ohio

6th Annual Obesity Summit
Oct. 20-21, 2011
Cleveland Clinic, Cleveland, Ohio

For more information about the above events, call the Cleveland Clinic Department of Continuing Education at 216.444.5696 or 800.762.8173, or visit ccfme.org.

Want easy-to-understand information on inflammatory bowel disease to give your patients? Email us at digestthis@ccf.org to receive copies our free IBD Treatment Guide.
Digestive Disease Institute Access Guide

SERVICES FOR PHYSICIANS

DDI Referrals

clevelandclinic.org/digestive

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

888.410.1775 or 216.444.5405

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Our eCleveland Clinic service, DrConnect, can streamline communication from Cleveland Clinic physicians to your office. With one-click convenience, you can track your patient’s care using this secure DrConnect Web site. Visit ecleveandclinic.org or e-mail drconnect@ccf.org.

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 216.444.5405.

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Global Patient Services

Complimentary assistance for national and international patients and families 001.216.444.8184 or visit clevelandclinic.org/ic