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In This Issue

1

Pediatric Heart Surgery
Latest outcomes at the Congenital Heart Center

2

Anal Fissures
Non-surgical protocol yields excellent results

3

Esophageal Atresia
New program provides long-term coordinated care for children with EA-TEF

6

Events and Announcements

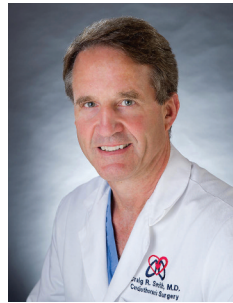
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Message from the Chairman

It is always a challenge to choose which news to share here, because every quarter is marked by too many milestones and achievements to list in full. In addition to congratulating Dr. Shanta Modak on her induction into the National Academy of Inventors (see page 6), please join me in congratulating Dr. Tomoaki Kato, who received the 2014 Nobility in Science Award from the Sarcoma Foundation of America for his innovative work in performing ex vivo organ transplantation. I also want to recognize Drs. John Chabot and Yanghee Woo, who performed the hospital's first robotic

Whipple procedure (pancreatic surgery) in March 2014. Milestones such as these reflect extraordinary effort and skill on the part of our surgical teams.

We wish you a healthy spring and summer.

Craig R. Smith, MD, FACS
Chairman, Department of Surgery



Pediatric Heart Surgery

Congenital Heart Center treats the sickest of newborns, with outcomes among the best in the nation.

Every year, about 30,000 children in the United States, about one percent of all live births, are born with congenital heart defects. Many babies require surgery within hours of birth.

Under the direction of pediatric cardiovascular surgeon **Emile Bacha, MD** and pediatric cardiologist **Julie A. Vincent, MD** the Congenital Heart Center is one of the largest and most preeminent pediatric cardiology and cardiac surgery centers in the nation. Families come from around the country and around the world to seek the most advanced, safest, and proven treatments for newborns with life-threatening conditions such as transposition of the great arteries, hypoplastic left heart syndrome, and complex left ventricular obstruction.

Continued on page 5

More from the Department of Surgery experts at:

Colorectal Surgery Update: New protocol to treat anal fissures offers excellent results, without cutting the muscle.

Sometimes the most difficult thing about a problem is overcoming the fear of facing it. When people have painful conditions of the anus, they tend to be embarrassed to talk about that part of the body and even less enthusiastic about inviting a doctor to take a look. But anal pain is best treated sooner than later, and an earlier diagnosis can improve patients' outcomes in the long run.

Reflecting their commitment to doing everything possible to ease patients' suffering, the surgeons in the Division of Colorectal Surgery at NewYork-Presbyterian/Columbia have recently developed a new protocol to treat anal fissures, a painful condition frequently misdiagnosed as hemorrhoids. What's more, the new protocol offers superb results without cutting the anal sphincter muscle.

What are anal fissures?

Anal fissures are small cuts or tears at the skin of the anal opening. They typically cause pain when a person has a bowel movement, and pain can be severe for hours afterwards. Some patients also experience bleeding. Many people assume that pain in that part of the body signifies hemorrhoids, so they self-treat with hemorrhoid remedies first, says **Daniel L. Feingold, MD**, an attending surgeon in the Division since 2004. Very often, it is only after suffering for a long time that people finally seek help from a gastroenterologist or colorectal specialist.

According to Dr. Feingold, anal fissures can happen to anyone: the majority of patients are healthy, and fissures do not appear to have anything to do with age, gender, diabetes, smoking, diet, sexual practices, or any other known factors. Although some anal fissures heal without treatment, some do not, and these go on to cause chronic pain problems. The fissure cycle goes like this: if the cut of the fissure stays open, pain causes spasms of the muscles around the anus, which prevents blood flow to the area, which prevents healing. This leads to more pain and more spasm.

Medical therapy, primarily a muscle relaxant cream applied around the anus, is effective in healing about 70% of anal fissures. By relaxing the muscle so that spasms resolve, blood flow to the area improves and healing can occur. Hot baths and stool softeners can help promote healing. About 30% of patients fail to heal with this approach, however. These patients traditionally have had two options, the first of which is injection of botox into the fissure. By paralyzing a portion of the muscle and relaxing the spasm, the hope is that the fissure will heal. This works only in about 30% of patients, however. The gold-standard approach is a surgical procedure called sphincterotomy, in which the surgeon cuts a piece of the anal sphincter. This relaxes the spasm, which relieves the pain and allows nearly all fissures to heal. The drawback to sphincterotomy is that some people develop function-related problems, meaning that they can have increased urgency or impaired control of bowel movements, gas, etc. Women, in particular, are at risk of having function-related problems after sphincterotomy.

Why Columbia?

When patients first meet Dr. Feingold, he reassures them of several important things. First, he acknowledges that it is normal to feel embarrassed and anxious. Second, he explains that they are in the right place, where he and his colleagues are experts in colorectal conditions like anal fissures. Third, he emphasizes that his exam will be pain free; when evaluating a patient with a fissure, he does no internal exam, just a visual examination of the external anus. In fact, he says, "Many of my patients are surprised and ask, 'That was it? That's the whole exam?'"

Beneath his ability to help his patients feel comfortable and even laugh, Dr. Feingold means every word. To the point, he was so determined to find a better option for his patients with anal fissures that he took it upon himself to develop a new protocol to improve upon available treatment options.

Wound care protocol

Dr. Feingold performs the procedure in the operating room because it has the best lighting and allows patients to have sedation during the procedure. It takes about 15 to 20 minutes, and patients go home after a few hours.

The procedure entails four steps.

- 1 Gently dilate the anus with special retractors
- 2 Clean out the fissure with curettage to stimulate healing
- 3 Caulterize the wound with electrocautery to seal the wound
- 4 Inject traimcinolone (generic Kenalog), a steroid, into the fissure.

Dr. Feingold says that he developed the idea for the Kenalog protocol by considering the best-known approaches to treating chronic wounds. He has treated 115 patients with the new method, and virtually all have had superb outcomes. He is in the process of publishing results from his first 100 patients, two thirds of whom were pain free within ten days. Among the other third of patients, it took as long as six weeks for their pain to disappear. None of the patients have had control-related complications. "Patients report they are very happy with this approach," says Dr. Feingold.

Dr. Feingold explains, "This has a good record of fixing the problem and a low risk profile. The beauty is that it is muscle-sparing, so it does not cause control-related problems. But it also doesn't burn any bridges, so if it fails, it would still be possible to do a sphincterotomy, if need be." Although he no longer performs sphincterotomies because of the success of this approach, other surgeons in the Division of Colorectal Surgery do, should it be needed. ■

For more information, visit columbiasurgery.org/colorectal or call 212.342.1155.

Esophageal Atresia: NYP/Columbia establishes program dedicated to long-term, multidisciplinary care of the esophagus.



*William Middlesworth, MD,
Surgical Director of the
Esophageal Atresia Program*



*Julie Khlevner, MD,
Medical Director of the
Esophageal Atresia Program*

Esophageal atresia (EA) is a congenital condition (present at birth) in which the esophagus is interrupted and fails to connect the mouth to the stomach as it should. The upper part of the esophagus ends in a blind pouch, and, in the most common form, the lower esophagus connects the airway (trachea) to the stomach (a tracheoesophageal fistula, or TEF). These conditions (EA and TEF) can occur separately, but most often occur together. Babies with EA, TEF, or EA-TEF must undergo surgical repair, often very soon after birth. Without treatment, attempting to eat could cause babies to aspirate milk and stomach acid into the trachea and lungs.

According to **William Middlesworth, MD**, a pediatric surgeon at NewYork-Presbyterian Morgan Stanley Children's Hospital and Surgical Director of the Esophageal Atresia Program, clear surgical guidelines are in place regarding how to best restore continuity of the esophagus and separate it from the trachea. Since the first repair in 1945, surgery has been successful in the vast majority of children, and mortality has significantly declined. Dr. Middlesworth and colleagues at NewYork-Presbyterian offer minimally invasive surgical options for EA repair in appropriately selected patients. When appropriate, they repair esophageal atresia using a thoracoscopic approach, which entails three small incisions in the chest for a surgical camera and instrumentation.

Reflux and EA

While a successful operation is the first step, it is now recognized that children do best when they receive careful long-term follow up. Surgery corrects the abnormal anatomy, connecting the ends of the interrupted esophagus and separating it from the trachea, but not the physiology (function) of the esophagus. Dr. Middlesworth and his colleagues recognize that children with EA need to be monitored as they grow and develop, even in the absence of any obvious clinical symptoms. One of their top concerns: acid reflux.

Although they may be unaware, most children born with EA have some degree of acid reflux, which can lead to problems years after surgery. More accurately, what is understood as reflux is really a form of dysmotility (impaired clearance) of the esophagus, according to Dr. Middlesworth. Children with EA-TEF are at risk for formation of strictures, or narrowed spots, where the interrupted esophagus was sutured together. Strictures can also form in the esophagus due to inflammation caused by acid, explains **Julie Khlevner, MD**, a pediatric gastroenterologist who specializes in diagnosing and treating patients with gastrointestinal motility disorders. Dr. Khlevner is Director of the Pediatric Gastrointestinal Motility Center at Morgan Stanley Children's Hospital of NewYork-Presbyterian and Medical Director of the Esophageal Atresia Program.

Both strictures and impaired esophageal motility can result in food and stomach acid lingering in the esophagus, which is not equipped to handle it. As readers may already know, prolonged acid reflux can lead to Barrett's esophagus, a dangerous precancerous condition.

No clear treatment guidelines

"Despite having treated this condition for over 75 years, doctors have not been able to develop and agree upon clear guidelines regarding the best way to monitor and treat children born with EA or EA-TEF," says Dr. Khlevner. There is no evidence-based protocol to follow, because adequate studies have not yet been conducted in the relatively small number of patients affected by this rare disease. Without such evidence to guide them, individual doctors are left to use their best judgment in choosing mild acid suppressant medications, aggressive acid-reducing medicines, medications to improve motility, dietary recommendations, and anti-reflux surgery (such as Nissen fundoplication). As many as half of children may require interventional procedures to dilate strictures in the esophagus.

Continued on Page 4

"Medications for reflux can have serious side effects such as increased risk of C. difficile infection, respiratory infection, and bone loss," says Dr. Khlevner. "We want to prevent reflux without doing damage with these drugs." Or, as Dr. Middlesworth phrases it, "We need to manage these patients in a way that will keep their esophagus healthy not just for their first 18 years, but their first 80 years." Many questions remain unanswered, such as whether children need to take medicines for the rest of their lives, whether mild or aggressive medications should be used, how frequently such children need to be monitored, and when surgery should be considered to treat reflux.

Esophageal Atresia Program: New model of care

In order to provide the best care possible for their patients, Dr. Middlesworth and Dr. Khlevner decided to take action. Together they formed a new program dedicated to the treatment of children with EA-TEF, with the following goals:

- ◆ Providing coordinated multidisciplinary care that addresses all facets of their patients' conditions
- ◆ Determining how to safely and effectively treat silent reflux and other complications associated with EA
- ◆ Helping older patients to transition to practitioners caring for adults who are well versed in the special needs associated with EA
- ◆ Conducting research to identify genetic abnormalities underlying EA and related anomalies
- ◆ Conducting longitudinal clinical research in order to develop best-practice treatment protocols.

Drs. Middlesworth and Khlevner now monitor children using endoscopy and impedance/pH studies to assess whether the esophagus is inflamed and to see if too much acid is present in the esophagus. This can help guide anti-reflux therapy and help avoid both over-treatment and under-treatment.

One visit rather than ten

The collaborative format of the EA program also addresses an important need for patients and their families: the need to see multiple specialists for complicated, multi-system birth defects in the spectrum known as VACTERL (Vertebral anomalies, Anal atresia, Cardiac defects, Tracheoesophageal fistula and/or Esophageal atresia, Renal & Radial anomalies and Limb defects). Elsewhere, parents must bring their children to individual specialists for care of these problems, but the collaborative team at NewYork-Presbyterian Morgan Stanley Children's Hospital includes the range of experts so that a child may see multiple specialists in a single visit, rather than making multiple separate trips. The program plans to include specialists in pediatric cardiology, pulmonology, and otolaryngology (ENT) as well as feeding therapists. Dr. Middlesworth notes, "Caring for children with complex and unusual problems in a multi-disciplinary context, making life easier for families, is what the Morgan Stanley Children's Hospital is all about." ■

To learn more, visit

<http://childrensnyp.org/mschony/digest-tracheo> or call 212.342.8586.

SAVE THE DATE

The 2nd annual Sharing Life Day



***The Transplant Forum's
2nd Annual Sharing Life Day
Saturday, May 10, 2014
11 am – 2 pm***

***Vivian and Seymour Milstein Family Heart Center
173 Fort Washington Avenue, New York, NY***

The Transplant Forum aims to improve the quality of life for organ transplant patients and their families by supporting novel research and clinical care programs. This event is free and open to the public, but reservations are required.

***For information and reservations please contact us:
transplantforum@columbia.edu or call 212.304.7241.***

Prenatal Diagnosis and Intervention

For some children, taking care of their hearts must begin even before they are born. The Congenital Heart Center has one of the largest and most experienced maternal-fetal medicine teams in the country; the *Carmen and John Thain Center for Prenatal Pediatrics* is the only one of its kind in the metropolitan New York area, offering comprehensive, multidisciplinary prenatal diagnosis and therapy in conjunction with pediatric subspecialty consultation.

Cardiac Critical Care

A highly specialized team of neonatologists and cardiologists with subspecialties in neonatal cardiac care, the Congenital Heart Center offers the enormous resources needed when treating serious heart defects. The center offers all levels of care and one-to-one patient/nurse ratios.

Surgeons at the center perform more than 600 surgeries for congenital heart disease every year and offer the best possible surgical outcomes. Despite treating babies with some of the most complex heart conditions, survival rates at the center significantly surpass the national average, with children routinely returning to normal levels of activity and living into adulthood. The mortality rate for newborns at the

Congenital Heart Center is among the lowest in the nation: 4.6% compared to a national benchmark of 9.8%*. In 2013, *U.S. News & World Report* ranked NewYork-Presbyterian as one of the top pediatric heart and heart surgery programs nationally, reflecting its reputation and surgical outcomes, the expertise of our surgical teams, volume of cases and other patient-care related data.

According to Dr. Bacha, “By focusing exclusively on neonates with cardiac disease, we feel we have developed unsurpassed expertise in the care of low birthweight and premature babies in particular.”

Pediatric Interventional Cardiology

The center has particular expertise in pediatric interventional cardiology, a unique specialty that involves the non-surgical treatment of congenital and acquired cardiovascular disorders. A few examples of catheter-based interventions include:

- ◆ Angioplasty, including dilation and stent implantation, to open narrowed arteries and veins
- ◆ Atrial septoplasty or blade septostomy to treat pulmonary hypertension
- ◆ Coil and Amplatzer device closure of open ductus arteriosus, atrial septal defect, Fontan fenestration, and patent foramen ovale.

Surgeons and interventional cardiologists at the center use an innovative hybrid technique, combining surgery with a catheter-based intervention, to treat babies with hypoplastic left heart syndrome. This approach achieves comparable results as the Norwood procedure, and can sometimes be safer for high risk infants because it avoids using the heart-lung machine.

Other advanced therapies available at the Congenital Heart Center include:

- ◆ Minimally invasive, transfusion-free repair of atrial septal defect and ventricular septal defect,
- ◆ Hybrid procedure to close ventricular septal defect
- ◆ Percutaneous (under the skin) valve replacement therapy.

The center is renowned for its pioneering work in pediatric heart valve repair, its expertise in ventricular assist devices, and outstanding results with the use of extracorporeal membrane oxygenation (ECMO) in children with cardiorespiratory failure. ■

*Mortality data provided by Society of Thoracic Surgeons database

For information about The Congenital Heart Center at NewYork-Presbyterian Morgan Stanley Children's Hospital, please visit: nyp.org/kids or call: 212.305.2688.



Pediatric cardiovascular surgeon Emile Bacha, MD and pediatric cardiologist Julie A. Vincent, MD Directors of the Congenital Heart Center.

Events and Announcements

Shanta Modak, PhD, Inducted as Fellow to National Academy of Inventors

Congratulations to **Shanta Modak, PhD**, a research scientist at Columbia University Medical Center, who was inducted as a fellow to the National Academy of Inventors for her work to develop infection-resistant medical devices. In collaboration with Professors of Surgery **Henry M. Spotnitz, MD**, and **Mark A. Hardy, MD**, Dr. Modak developed a new formulation in reducing Infections associated with implantable cardioverter defibrillators (ICD) and a silver sulfadiazine cream effective for wound healing.

Examples of her inventions include antibacterial central venous catheters and soft tissue patches, which are widely used in hospitals to reduce device-associated infection.

Dr. Modak's current research includes development of biofilm-resistant endotracheal tubes and urinary catheters as well as compositions for skin and surface disinfection.

Fellowship in the National Academy of Inventors is a high professional honor awarded to academic inventors and innovators who significantly impact quality of life, economic development and the welfare of society.

Breast Cancer Clinical Trial Now Enrolling New Patients

NewYork-Presbyterian/Columbia University Medical Center is now enrolling patients in a new clinical trial examining the effectiveness of laser therapy to treat early-stage breast cancer. This new research is testing a non-surgical treatment called Novilase® Interstitial Laser Therapy (ILT).

The study is testing the ability of the laser to ablate (destroy) breast cancers that are equal to or less than 2 centimeters in size. Approximately 50% of breast cancer patients are estimated to qualify for inclusion in the study.

Traditionally, early-stage breast cancers have been removed by surgery, i.e., lumpectomy, which can unfavorably affect the look and feel of the breast. Destroying the tumor with a laser may have advantages including:

- ◆ Minimal scarring
- ◆ Less chance of infection
- ◆ Much shorter recovery time
- ◆ Preservation of natural shape (i.e., cosmetic appearance) and feel of the breast.

Women with small breast cancers will undergo the ablation procedure prior to surgical excision of their breast cancers. The ablation procedure takes place in an outpatient setting, and is typically completed in 30-60 minutes.

For information about this trial, visit breastmd.org/news_novilase_trial_2013

To see if you may be eligible, please email info@columbiasurgery.org or call 212.305.9676.

*For location information and to register for events, please visit:
www.columbiasurgery.org/events or call 212.304.7810.*

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