MINIMALLY INVASIVE ENDOVASCULAR REPAIR
gets custom treatment

Largely asymptomatic, abdominal aortic aneurysms (AAA) can remain undetected until they are spotted in an X-ray, ultrasound or scan – or until they burst, causing life-threatening internal bleeding.

New technologies in both 3D imaging and the development of fenestrated endovascular grafts give vascular surgeons at UI Heart and Vascular Center an innovative option for minimally invasive AAA repair.

Treatment of AAA is complicated by the intricate vascular network surrounding the aneurysm. Approved by the FDA in 2012, the Cook Zenith® Fenestrated AAA Endovascular Graft addresses that issue by custom-designing stent grafts to meet the unique anatomical needs of each patient. The process takes several weeks, and is an excellent option for many patients whose AAA is not life-threatening.

“Whenever possible, we go to the manufacturer,” said Mel Sharafuddin, MD, Clinical Associate Professor of Surgery. “But when time is of the essence, in emergent or symptomatic cases, we have the technology to modify the grafts right here.” Utilizing the 3D capabilities of the powerful VitreaWorkstation™, Sharafuddin is able to obtain the meticulous measurements necessary to customize a graft in-house.

“We have extraordinary technology here,” said Sharafuddin. “Our 3D imaging is so potent, we can do the precise measurements and planning here, and create the modifications right on the table.”

As awareness grows, the process is becoming more popular: almost 30 patients have been treated with the grafts in just the last year.

Trials have shown that fenestrated grafts (in comparison with open repair) lead to a reduction in renal impairment, new-onset dialysis, ICU days, and overall length of hospital stay.

“We have patients going home the second day,” said Sharafuddin. “Before, they might have been in the ICU five days, with another ten days in the hospital.”

As the only hospital in Iowa to receive Joint Commission certification for aortic aneurysms, UI Hospitals and Clinics is the only institution in Iowa to provide endovascular repair for AAA.

“This cannot happen in a small hospital,” Sharafuddin said. “You need resources and magnificent imaging capabilities. You also need a concentration of skills and know-how, and high-end coverage at all times – non-tertiary institutions just don’t have these.”

A Tailored Fit

Fenestrated graft in place—the structure supports the aorta, while fenestrations precisely customized to the patient accommodate the unique surrounding vasculature.

Risk Factors

Risk factors for abdominal aneurysm include tobacco use, atherosclerosis, age of 65 or older, being male, and family history.
Pediatric Urology

There are only three board specialty certified pediatric urologists in the state of Iowa.

All three have completed a urology residency of five to six years, as well as two years of intensive pediatric urology fellowship training. Each of the three has also achieved special certification in pediatric urology from the American Board of Urology. And all three practice here at UI Children’s Hospital.

“As urologists that specialize in the treatment of children, we offer a mix of operative and non-operative solutions for urinary tract infections, urinary reflux, and all sorts of things that affect the kidneys,” said Angela Arlen, MD, Clinical Assistant Professor of Urology. “Since we focus on babies and children, we are familiar with some conditions that would be very unusual in an adult practice.”

Complex procedures like penile and bladder reconstruction require top-notch facilities and exceptional collaboration for outstanding outcomes. Pediatric urology works with neonatology, pediatric anesthesia, general pediatrics, pediatric cardiology, etc., to provide effective treatment plans.

Arlen believes that the field of pediatric urology will continue the trend to minimally invasive and robotic surgery, and that UI Children’s Hospital is well prepared for the future. “There is nothing being done elsewhere that we’re not doing here,” she said. “Robotic surgery, laparoscopic...we’re not missing anything.”

Pediatric Urology services are available at the UI Children’s Hospital Pediatric Specialty Clinic on the second floor of John Colloton Pavilion (356-2229), and at Iowa River Landing (467-2000).

Promoting Your Practice: Survey Says...

Satisfied patients returning and referring create the foundation of a solid practice. Knowing what really matters to patients is essential to the process. What keeps them coming back? What sparks them to encourage family and friends to seek your service?

Dr. Thomas Lee, Chief Medical Officer of Press Ganey, has presented intriguing insights into what is truly significant to patient satisfaction.

With extraordinary amounts of data at his fingertips, Dr. Lee has moved beyond common assumptions like short wait times, good parking, and a giant TV in the lobby. He’s drilled deeper into the data to discover a simpler truth:

“It’s the connection between you and your patient.”

Low confidence leads to 75 percent of patients failing to recommend.

Patients want to see effective teamwork

“Patients are afraid not just of their diseases, but of lack of coordination,” Dr. Lee said. Only 1 percent of patients who have confidence in their providers, and feel that their team works together, fail to recommend.

Recommendation rates are even higher, almost 100 percent, when those providers and teams that engender confidence show high concern for worries.

“Staff cared about you as a person” has the highest direct correlation with a likelihood to recommend.

Enhancing your patients’ perception of their care can be simple:

• Start with a friendly greeting, sit or stand level with your patient, and make eye contact.

• Compliment members of your team and staff: “You saw Dr. X? She’s very thorough.” “You’re in excellent hands with Z.” “Our clerks will take great care of you and get you scheduled.”

• Keep your patients informed about delays. The data shows that being informed not only surpasses most positive factors, but actively offsets a host of negatives: patients notified about a delay are far less likely to mind the wait.

These tips seem elementary. But the data shows that patient desires are, too.
POEM Procedure Offers Less Invasive Treatment for Achalasia

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Patients with achalasia, an esophageal motility disorder, now have an endoscopic alternative: Per-oral endoscopic myotomy (POEM). POEM is performed under general anesthesia and cuts abnormal esophageal muscle to allow food to pass. But with no skin incisions, POEM is associated with less blood loss, fewer complications, less pain, and an earlier return to work.

The procedure is performed endoscopically and approached transorally. A slit is made in the esophageal mucosa, and a tunnel is created in the esophageal wall. This workspace is then used to divide the circular muscle layer and lower esophageal sphincter, thereby alleviating the obstruction to food passage. As the endoscope is removed, clips are placed to repair the mucosal slit.

UI Hospitals and Clinics is the first and only institution in Iowa to offer this treatment option.

“The success of this procedure depends on a great team,” said Henning Gerke, MD, Clinical Associate Professor of Internal Medicine. “Here we are surrounded by expertise, with thoracic surgeons, specialized interventional gastroenterologists and GI motility experts.”

John Keech, MD, Clinical Assistant Professor of Cardiothoracic Surgery, Kalpaj Parekh, MBBS, Associate Professor of Cardiothoracic Surgery, Rami El Abiad, MD, Clinical Assistant Professor of Internal Medicine, and Peter Nau, MD, MS, Clinical Assistant Professor of Surgery, are part of the POEM procedure team.

Though the POEM procedure is fairly new, only performed on humans since 2008, it has proven to achieve excellent short-term outcomes. Of the 40+ procedures that have taken place at UIHC, greater than 90% have resulted in significant symptom relief.

Indications for the procedure are growing, as applications expand into areas formerly the domain of more invasive approaches.

“The advantage to POEM is that there is no limit to how long we can make the incision,” Dr. Gerke said. “A longer myotomy may help people with spastic esophageal disorders and other esophageal issues where the problem is not only the lower sphincter.”

Bacterial Infection Risk Linked to Heating-Cooling Units

In October of 2015, the Centers for Disease Control notified hospitals throughout the country about possible exposure to Nontuberculosis Mycobacteria (NTM). Patient exposure has been linked to some heater-cooler units used with heart/lung bypass machines in certain major heart and lung surgeries and liver transplant surgeries.

NTM is common in the environment, and typically not harmful. But some heater-cooler units have been shown to aerosolize the bacteria, which can then enter the body through the surgical site.

An infection can be slow to develop and even slower to diagnose. And while the chances of infection are extremely low, NTM infection has a 40 percent mortality rate. Early detection is essential for effective treatment.

There is no government mandate for informing patients, and hospitals around the world have a wide-ranging response. In the interest of transparency and concern for our patients, UI Health Care chose to notify about 1,500 patients who had major heart, lung, or liver surgeries here between January 1, 2012 and January 22, 2016.

Patients are advised to watch for symptoms: fever lasting longer than a week, pain, redness, heat, pus, night sweats, joint pain, muscle pain, loss of energy and failure to grow or gain weight (in infants). They are encouraged to share the information from the CDC with their doctors. If they request an appointment with a UI Hospitals and Clinics specialist, they will not be charged for the visit.

For more information see the NTM FAQs on The Loop.

Welcome New UI Physicians!

Saima Sharif, MS, MD
Clinical Associate Professor of Internal Medicine
Specialties or specific procedures: Medical Oncology

Mehul Adhak, MBBS
Associate of Internal Medicine
Specialties or specific procedures: Hospitalist

Carlos Chan, MD, PhD
Assistant Professor of Surgery
Specialties or specific procedures: Surgical Oncology and Endocrine Surgery
**Precision Counts:**

Gated Delivery of Radiation Depends on Exact Measurement

In radiation therapy, accuracy is essential: shaped radiation beams are precisely targeted, zeroing in on tumor cells from multiple angles. But some tumors won’t stay still.

Even when lying quiet, the human body is a riot of movement, primarily due to respiration. To effectively use stationary radiation beams on moving targets, “we change the timing of the beams to compensate for the motion,” said Medical Physicist Timothy Waldron, MS. In a process called “gated delivery,” the beams are only activated at precise points in the breathing cycle.

“The ability to deliver gated radiation treatment to lesions allows for greater sparing of normal tissues potentially preventing significant radiation associated toxicities, said Bryan Allen, MD, PhD, Assistant Professor of Radiation Oncology. “This technology allows for improved patient quality of life.”

Still images from CT scans are combined into a movie loop that, timestamped with the breathing signal, shows both the tumor and its motion. A treatment planning computer extrapolates the data, compensating for the distance the tumor moves in a typical breath. Dozens of variables figure into the meticulous equation necessary for effective gated delivery. Any difference in breathing rhythm or force changes the whole equation.

To help patients take the same breath in the same way every time, Waldron uses the ANZAI Respiratory Monitoring System. With an elastic belt and a button-shaped pressure sensor, the system fully tracks each breath during both imaging and treatment, giving an immediate indication of any change in timing, pressure or volume. Waldron also enlists the help of Pachelbel’s Canon.

“We give our patients respiratory training,” Waldron said. “We assess their breathing pattern, set up Pachelbel’s Canon at a comfortable pace, and have them breathe along with the music.” The music plays for the patient while they have their scan, and at that same precise tempo when they are receiving radiation.

While a gated delivery treatment may last more than 20 minutes, the radiation beams are active for only a few seconds per breath – adding up to just a few minutes of total radiation. Controlled and monitored breathing makes the process far more successful. “We’ve used the music with about 600 patients,” said Waldron. “And of those only about 20 didn’t vastly improve their breathing control.”