

THE Sanger Report

WWW.SANGERHEART.ORG

SPRING 2012 | VOL. 3 | ISSUE 1

Procedure Offers Patients a New Treatment Option



Charles R. Bridges, MD, ScD
Chair, Department of Thoracic and Cardiovascular Surgery

AT SANGER HEART & VASCULAR Institute, our team understands the importance of staying at the forefront of innovative procedures in order to bring new treatment options to patients. Our integrated and collaborative model of healthcare demonstrates our dedication to making the best decisions for our patients while providing them with the highest quality care and outcomes.

ANOTHER OPTION

The interventional cardiology and cardiothoracic surgery teams at Sanger Heart & Vascular Institute were among the first in the United States selected to perform transcatheter aortic valve replacements (TAVR) for patients with severe aortic stenosis, outside of clinical trials. The FDA-approved technology offers an alternative treatment option to patients who previously were considered to be too ill to undergo open-heart surgery to replace their diseased aortic valves.



William E. Downey, MD, FACC
Medical Director, Interventional Cardiology and Cardiac Catheterization

Once they develop symptoms, patients with severe aortic stenosis have a 50 percent chance of dying within one or two years unless the valve is replaced. In the PARTNER trial, patients who weren't candidates for conventional aortic valve replacement were randomly assigned to either medical therapy or TAVR. For these inoperable patients, TAVR increased the chance of surviving for one year from 30 to 50 percent. At two years, the benefit continued to increase with the absolute survival benefit rising to 24 percent. In addition, TAVR provided a major improvement in patients' symptoms, quality of life and freedom from repeat hospitalizations.

One year after randomization, 50 percent of patients treated with TAVR were alive and minimally symptomatic (NYHA class I or II) as compared with only 17 percent of patients who were treated medically.

Even though the surgery may be successfully performed, only 70 percent of the patients who receive the new valve survived beyond one year, primarily from complications that made them ineligible for surgery in the first place. In addition, the procedure remains a substantial one with associated complications including stroke and vascular injury.

Continued on page 8

HELP YOUR PATIENTS FIND OUR EXPERTS

Sanger Heart & Vascular Institute now has a dedicated referral line to help you find the right physician for your patients.

Call **877-999-SHVI (7484)** to speak with a Sanger representative who can assist you in finding a specialist or the nearest Sanger office location.

RECEIVE THE SANGER REPORT VIA E-MAIL

To receive *The Sanger Report* via e-mail, visit www.sangerheart.org and fill out the short sign-up form located on our home page.

INSIDE ...



Improving Access to Care
PAGE 2



Code Rupture Protocol: Expedited Treatment of rAAA
PAGE 4



Surgery Program Rated Among the Best in the Nation
PAGE 6



TAVR PROCEDURE

Scan this QR code to learn more about the TAVR procedure from Charles R. Bridges, MD, and William E. Downey, MD.



Sanger Heart & Vascular Institute
Uncompromising Excellence. Commitment to Care.

Improving Access to Care



Paul G. Colavita, MD, FACC
President

BEGINNING IN SPRING 2012, Sanger Heart & Vascular Institute will expand its services at Carolinas Medical Center-Pineville, bringing tertiary cardiovascular services to the area for the first time.

CMC-Pineville, located just north of the South Carolina border in the southernmost tip of Mecklenburg County, is noted by patients in south Charlotte and South Carolina for its advanced care delivered with personalized service. The expansion is part of a \$300 million addition to CMC-Pineville that will provide enhanced clinical services.

EXPANDED SERVICES

Services include the addition of expanded diagnostic, interventional, electrophysiology, thoracic and cardiovascular surgery capabilities. General adult cardiology and vascular medicine and interventions are also provided.

The construction updates have added state-of-the-art cardiovascular facilities, including:

- ▶ cardiac catheterization lab
- ▶ electrophysiology lab for device implantation and ablation procedures
- ▶ expanded cardiovascular recovery unit and surgical recovery bays



- ▶ expanded 30-bed ICU
- ▶ hospital-based diagnostic suite for echocardiography, stress echo and nuclear imaging
- ▶ open heart surgery operating suite

PIONEERING CARE

The Thoracic and Cardiovascular Surgery Program at Sanger Heart & Vascular Institute operates under the leadership of Charles R. Bridges, MD, who oversees the program at CMC and CMC-Pineville. Sanger has pioneered cardiovascular

surgery in the Southeast for more than 50 years. We remain the region's heart transplant center and pediatric cardiac surgery program, the outcomes of which consistently surpass other programs on a national scale.

The addition of open heart surgery allows the hospital to become a designated percutaneous coronary intervention (PCI) center and offer comprehensive care for heart attack patients. As part of The Chest Pain Network, our interventional cardiologists can safely treat heart attack patients in the cath lab with

“Sanger has pioneered cardiovascular surgery in the Southeast for more than 50 years. We remain the region's heart transplant center and pediatric cardiac surgery program, the outcomes of which consistently surpass other programs on a national scale.”



an open heart surgeon on standby for complex blockages requiring coronary artery bypass surgery. Thoracic and cardiovascular surgery services also include valve repairs, valve replacements and a full complement of minimally invasive procedures.

The reason for our expansion southward? We're committed to improving access to care for our patients. In 2011 alone, Sanger opened three new office locations and increased the availability of subspecialists at all of our locations for patients whose needs require evaluation by electrophysiologists, vascular medicine physicians and heart failure physicians. Our hope is that expanding our reach will give patients convenient access to the highest quality cardiovascular care. ■

NEWS AND ANNOUNCEMENTS

► **Geoffrey Rose, MD, FACC, FASE**, was appointed **Chairperson** of the **Intersocietal Accreditation Commission (IAC)**. The IAC is a national, nonprofit organization that evaluates and accredits the following programs at medical facilities:

- carotid stenting
- computed tomography
- echocardiography
- magnetic resonance imaging
- nuclear cardiology/nuclear medicine/positron-emission tomography
- vascular testing



■ **A LIFE OF SERVICE:** Francis Robicsek, MD (second from left), is honored for his lifetime achievements as a physician and humanitarian.

► **Francis Robicsek, MD**, Chairman Emeritus, Sanger Heart & Vascular Institute, was honored at a **portrait dedication for his lifetime achievements**, both as a

physician and for his continued success developing and training cardiovascular and medical programs abroad as Vice President of Medical International Outreach for Carolinas HealthCare System.

► **Amanda Cook, MD**, joined Sanger in December 2011. Dr. Cook is a **pediatric cardiologist** with expertise in echocardiography and congenital heart disease. Dr. Cook is seeing patients at Sanger Heart & Vascular Institute-Pediatrics in Concord, Davidson and Salisbury.

► **Jens Eichhorn, MD**, joined Sanger in December 2011. Dr. Eichhorn is an **adult cardiologist** with clinical interests in cardiac imaging and women's heart health. Dr. Eichhorn is located at Sanger Heart & Vascular Institute-Monroe.

► **Heather Longin, MD**, joined Sanger in February. Dr. Longin is an **adult cardiologist** with expertise in cardiac imaging and an interest health literacy. Dr. Longin is located at Sanger Heart & Vascular Institute-Monroe. ■

Expanded Access

OUR NEWEST LOCATION IN MINT HILL is now open and accepting new patients. Philip J. Iuliano, MD, an adult cardiologist, is seeing patients at this new location.

**SANGER HEART & VASCULAR
INSTITUTE-MINT HILL**
11304 Hawthorne Drive, Suite 100
Mint Hill, NC
For more information, call
704-863-1950.



Code Rupture Protocol: Expedited Treatment of Ruptured Abdominal Aortic Aneurysm



**Tzvi
Nussbaum, MD**
Vascular
Surgeon

EVERY YEAR, RUPTURED abdominal aortic aneurysm (rAAA) claims the lives of more than 15,000 individuals in the United States. Although the number of elective abdominal aortic aneurysm (AAA) repairs continues to increase, the incidence of AAA rupture is rising as well. Despite technical advances in the elective endovascular treatment of AAA, there has been almost no improvement in the mortality rate for rAAA—it remains the 13th leading cause of death in the nation. Despite these grim statistics, several factors have been shown to improve patient survival. Treatment in a center with subspecialty trained vascular surgeons, high-volume aortic surgeons, access to endovascular repair and a vascular surgery training fellowship have all been associated with a reduced mortality for rAAA. Carolinas Medical Center (CMC) is unique in this region and one of only two centers in North Carolina that meet all of these criteria.

LEADING THE WAY

Over the past decade, CMC has become a leader in managing patients with rAAA. Nonetheless, the time interval from aneurysm rupture to definitive treatment remains the single greatest barrier to improving

Expedited Treatment Protocol for Ruptured Abdominal Aortic Aneurysm

INCLUSION CRITERIA	EXCLUSION CRITERIA
<ul style="list-style-type: none">1 Any patient with a diagnostic study confirming a ruptured abdominal aortic aneurysm2 Any patient with a known abdominal aortic aneurysm larger than 4 cm OR iliac artery aneurysm, and any of the following:<ul style="list-style-type: none">▶ unexplained hypotension (clinical impression)▶ new onset of unremitting back, abdominal or flank pain	<ul style="list-style-type: none">1 Any patient or their designate who refuses surgery2 Any patient deemed not a surgical candidate; examples may include:<ul style="list-style-type: none">▶ severe dementia; patient residing in a skilled-nursing facility▶ known terminal illness (e.g., a hospice patient with three to 12 months to end of life)

survival. Recognizing that improved survival begins well before the patient arrives at the hospital, the vascular surgery division of Sanger Heart & Vascular Institute is initiating an integrated, system-wide protocol to expedite the care of patients identified with a high probability of rAAA.

CREATING A SUCCESSFUL PROTOCOL

Development of the protocol was truly a team effort, involving representatives from vascular

surgery, the Sanger catheterization laboratory, the operating room, anesthesia, emergency services, laboratory services, patient care, MedCenter Air and EMS services. Eric Whitley, RRT, is the vascular division team leader for the Sanger cath lab and has been the driving force behind this endeavor. Having gained experience as the region's only Code STEMI program for acute MI, that expertise was the foundation for development of a similar program for rAAA. Now, with a single phone call to the



CMC Hotline, the referring physician can initiate a Code Rupture. This sets into motion a sequence of integrated events to facilitate transfer, expedite treatment and maximize patient survival. With that call, the following sequence of events occurs:

- ▶ The transport of the patient is initiated.
- ▶ The on-call vascular surgeon and surgical team are notified to meet the patient on arrival.
- ▶ The cath lab team is called in to prepare for a potential endovascular repair.
- ▶ Surgical personnel are notified and preparation of the surgical suite is initiated.
- ▶ A CT scanner is placed on hold for the incoming patient.

“This program represents, to our knowledge, the first integrated, systemwide, referral network for the diagnosis, transfer and treatment of patients with rAAA in the United States.”

- ▶ The blood bank is notified and a massive blood transfusion protocol is initiated.
- ▶ A surgical ICU bed is reserved and the surgical critical care team is notified.

While a select few institutions across the country have described protocols for rAAA, this program represents, to our knowledge, the first integrated, systemwide, referral network for the diagnosis, transfer and treatment of patients with rAAA in the United States. In a medical

climate that demands quality and efficiency with a disease where every second counts, we believe a coordinated system of care should never be more than a phone call away. ■

FAST TRACK TO CARE

Call **704-512-7878** to refer patients in the event of a ruptured abdominal aortic aneurysm.

Surgery Program Rated Among the Best in the Nation



Charles R. Bridges, MD, ScD
Chair, Department of Thoracic and Cardiovascular Surgery

AT SANGER HEART & VASCULAR

Institute, we have an integrated, comprehensive surgical team that's able to treat any patient with a cardiovascular illness. Our patients have access to the latest cardiovascular treatments and can rest assured that their physical and spiritual well-being is always our top priority.

POSITIVE OUTCOMES

In the current analysis for national data covering July 2010 through June 2011, our Cardiothoracic Surgery

Program received a three-star rating by The Society of Thoracic Surgeons (STS). Our coronary artery bypass graft (CABG) surgery outcomes are ranked among the top 15 percent of the nation's best with regard to the STS quality indicators and process measures. The rating applies to the work being done at both Carolinas Medical Center and CMC-Mercy.

The comprehensive rating system developed by the STS for the quality of cardiac surgery measures hospitals based on a composite score incorporating four domains for CABG surgery: avoidance of operative mortality, avoidance of major morbidity, use of internal mammary artery (IMA) grafts and appropriate use of all evidence-based perioperative medications.

Operative mortality is defined as death during the same hospitalization as surgery or after discharge, but within 30 days of the procedure. Operative morbidity is defined as having at least one of

the following adverse outcomes:

- ▶ cerebrovascular accident or permanent stroke
- ▶ deep sternal wound infection
- ▶ prolonged ventilation
- ▶ renal failure
- ▶ reoperations for any reason

Use of IMA is based on the proportion of first-time CABG patients who receive at least one IMA graft, and patients with prior CABG surgery are not included in the denominator. The use of IMA is preferred, as it improves the long-term quality of life for the patient, decreasing the chance of subsequent reoperation. The use of all evidence-based perioperative medications, including:

- ▶ preoperative beta-blocker therapy
 - ▶ discharge anti-platelet medication
 - ▶ discharge beta-blocker therapy
 - ▶ discharge anti-lipid medications,
- is based on sound evidence linking these process measures to better short-term and long-term outcomes.



“ In the current analysis for national data covering July 2010 through June 2011, our Cardiothoracic Surgery Program received a three-star rating by The Society of Thoracic Surgeons. Our coronary artery bypass graft surgery outcomes are ranked among the top 15 percent of the nation's best. ”



CONTINUALLY IMPROVING QUALITY

Sanger is committed to improving patient care through continuous quality improvement. By closely monitoring our patient outcomes and process data, we have seen significant and continual improvements in the quality of care we deliver. Our team has developed a scorecard for each patient, based on STS guidelines and other evidence-based information. Every member of our care team, including surgeons, cardiologists, anesthesiologists, mid-level providers, perfusionists and nurses, is accountable for his or her area of care, and has a responsibility to document specific metrics under his or her leadership after every procedure during, and sometimes after, the patient is discharged from the hospital. A quality committee reviews patient data weekly to continually refine processes to improve patient outcomes and, in turn, deliver the best care possible to each and every one of our patients. ■

OUR EXPERTS CAN HELP YOUR PATIENTS

We're well equipped to treat any patient and our outcomes continually improve, thanks to a dedicated team of highly skilled caregivers. To learn more about our program, or to refer a patient, visit www.sangerheart.org or call 704-373-0212.



A leading-edge program

Our physicians and care teams have expertise in specialized areas of cardiothoracic surgery, and we're at the forefront of innovative procedures and programs that give our patients better treatment options and better outcomes, including:

- ▶ Transcatheter aortic valve replacement (TAVR) procedure offered to patients with aortic stenosis who previously had no other treatment options. (See article on page 1.)
- ▶ Minimally invasive cardiac surgery procedures, including "key-hole" cosmetic incisions for selected patients who require mitral valve repair or replacement, aortic valve repair or replacement, aortic aneurysm surgery and CABG.
- ▶ Ventricular assist devices (VADs) for destination therapy, offering a permanent solution for patients with advanced heart failure who are not candidates for transplantation.
- ▶ Complex aortic surgery, including valve-sparing aortic root procedures, thoracic endovascular aortic repair (TEVAR) and both traditional and newer hybrid approaches to treat aortic arch and thoracoabdominal aortic aneurysms. These procedures are often performed as a joint enterprise with the division of vascular surgery at Sanger.
- ▶ Pediatric and adult cardiac transplantation programs with outcomes that consistently outperform national benchmarks.
- ▶ Adult congenital cardiac surgery program offering advanced cardiology services and surgical procedures in adult patients with congenital heart disease.
- ▶ A pediatric cardiac surgery program with exceptional results equaling and often surpassing the nation's best for the most complex neonatal procedures, such as the Norwood procedure to treat hypoplastic left heart syndrome—the largest single contributor to congenital heart disease in infants younger than 12 months of age. The Sanger team at Levine Children's Hospital has a 100 percent survival rate in the 17 procedures that have been performed.
- ▶ A referral center for blood conservation procedures, specifically for patients who have religious or personal reasons to request that their cardiothoracic surgeries be performed without blood transfusions. Collectively, our surgeons have performed as many of these complex procedures as any other group of surgeons in the nation.
- ▶ Minimally invasive general thoracic surgery procedures, including video-assisted thoracoscopic (VATS) lung resections and minimally invasive esophageal resections.



Copyright © 2012 Sanger Heart & Vascular Institute

WWW.SANGERHEART.ORG

**Procedure Offers Patients
a New Treatment Option**
Continued from page 1

A MINIMALLY INVASIVE OPTION

In order to perform the TAVR procedure, our entire team of interventional cardiologists, cardiothoracic surgeons and echocardiographers traveled to Chicago for advanced training.

Traditional aortic valve replacement requires the patient to be put on a heart-lung machine, to stop the heart in order to replace the valve. Now, using TAVR, we're able to replace the valve by passing a catheter through the femoral artery, up through the aorta, and then implanting an artificial valve that's sewn into a stent in the area with the

stenotic valve. (See Figures 1 and 2.)

Benefits of the minimally invasive option include the avoidance of the need for heart-lung bypass and median sternotomy with their attendant risks. Patients generally recover faster with a nearly invisible scar hidden in the groin crease.

TAVR is a huge leap forward in the care of patients with aortic stenosis and a great advance for the field of cardiovascular medicine. As the technology evolves over time, we'll be able to treat more patients with minimally invasive options, offering better care and patient outcomes.

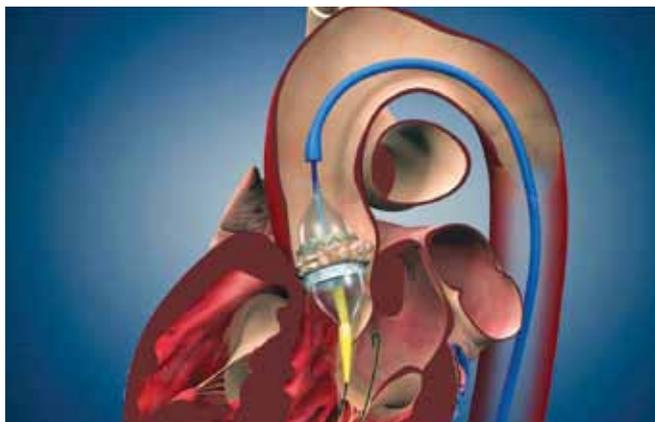
In the United States, about 300,000 patients experience at least moderate aortic stenosis and 50,000 receive open heart surgery to replace diseased valves. Five percent of

Meet our team

The comprehensive TAVR team includes cardiothoracic surgeons **Charles R. Bridges, MD**, and **Eric R. Skipper, MD**; interventional cardiologists **William E. Downey, MD**, and **Michael Rinaldi, MD**; and echocardiographers **Geoffrey A. Rose, MD**, and **Markus D. Scherer, MD**.

For more information about our program or to refer a patient, call our Valve Clinic Nurse Coordinator Susan McClain, RN, at **704-373-0212**.

those patients aren't candidates for open heart surgery, and until now, were unable to receive effective treatment. ■



■ **FIGURE 1:** During transcatheter aortic valve replacement, surgeons pass a catheter through the femoral artery, up through the aorta, and then implant the artificial valve.



■ **FIGURE 2:** The artificial valve is sewn into a stent in the area with the stenotic valve.