

When to Consider Heart Valve Repair

VALVE REPAIRS, PARTICULARLY WHEN PERFORMED EARLY, OFFER PATIENTS BETTER OUTCOMES THAN VALVE REPLACEMENT SURGERY.



From left Scott Lim, M.D., pediatric and adult congenital cardiologist; Ian Sarembock, M.D., Ch.B., M.B., director of the coronary care unit; John Dent, M.D., director of echocardiography; and Irving Kron, M.D., cardiovascular surgeon and chair of the Department of Surgery.

Dagnosed with a prolapsed mitral valve in her 20s, Bernice Kelly lived most of her life without any noticeable symptoms. It wasn't until recently that the 82-year-old finally felt the effects of her leaky heart valve. "My heart was feeling sort of taxed," recalls the Boston, Va., resident. "I just felt different."

Her Guilpeper physician performed an echocardiogram that revealed severe leakage, prompting an immediate referral to the University of Virginia Heart and Vascular Center to receive a second opinion evaluation for valve surgery. Using advanced diagnostics, specialists from UVA's heart valve program determined that a supporting structure for part of a mitral valve leaflet had torn loose, causing blood to leak back into the left atrium — a condition called mitral valve regurgitation. Based on the results of that comprehensive evaluation, cardiovascular surgeon John Kern, M.D., performed a heart valve repair rather than a replacement. "I am relieved that Dr. Kern was able to repair my own valve," Kelly says. "I was home on the fifth postoperative day and soon back to my normal routine."

While surgery to correct a leaking or regurgitant valve is a more complex and difficult procedure than replacing a valve, it has numerous advantages: better heart function after surgery, lower risk of stroke

or infection, and a lower mortality rate. "Ninety-five percent of leaking mitral valves are repairable," says Irving Kron, M.D., cardiovascular surgeon and chair of the UVA Department of Surgery. "Repair is better for higher function and long-term survival."

VALVE SURGERY: SOONER IS BETTER

As Kelly's story illustrates, many doctors who detect heart valve problems take a wait-and-see approach before recommending valve repair or replacement. However, recent research shows that earlier surgical intervention, particularly if a repair is possible, can prevent irreversible damage to the heart. Additionally, a study of mitral valve repair published in the *New England Journal of Medicine* suggests that severe mitral regurgitation increases a patient's risk of dying even if they don't exhibit symptoms. "When valve replacement was the standard treatment, physicians were understandably reluctant to refer patients for surgery until their symptoms were severe and the heart muscle was significantly weakened," Kron says. "We want to see

patients earlier, before the effects are irreversible. Early detection, monitoring and treatment, including appropriately timed elective surgery, are key to successful outcomes."

Surgical repair is an attractive option because the patient can avoid the permanent use of blood thinners and potential complications of valve replacement, such as infections. "Valve replacement surgery requires significant lifestyle changes, including regular blood tests and taking anticoagulant drugs over the course of a lifetime," Kron stresses. "Surgical repair is a better alternative whenever possible, especially for younger and more active patients."

PRECISE DIAGNOSIS LEADS TO BETTER TREATMENT

UVA's cardiovascular surgeons have extensive experience in valve repair, performing more than 300 mitral, aortic and tricuspid valve procedures over the past three years, with an excellent record of outcomes. Although most defective aortic valves require replacement surgery, UVA's cardiovascular surgeons are skilled at making repairs to aortic valves, as well as replacements.

Determining whether valve repair is a viable surgical option requires both advanced diagnostic technology and expert skill on the part of the interpreting physicians. Utilizing the latest imaging techniques, specialists from UVA's heart valve program can identify specific problems affecting the cardiac valves and design an appropriate surgery for individual patients. "Our recently expanded echocardiography lab offers sophisticated diagnostic services, including 3-D scans of the entire heart, to assess the exact problem and its severity," explains UVA cardiologist John Dent, M.D. "From that information, we can determine whether a faulty valve can be surgically repaired or must be replaced."

During the critical diagnostic stage, the treatment team also can determine whether the patient is a candidate for minimally invasive procedures that allow surgeons to do their work through a small incision between the ribs. Most aortic valve operations are performed this way, while about half of mitral valve repairs are minimally invasive. A smaller incision — three inches compared to the conventional six to eight inches — requires a shorter hospital stay and gives patients a quicker return to normal activities than with open-heart surgery.

Along with the design of the surgery, the timing of the procedure is critically important in preventing heart damage in at-risk patients. Recent research has shown that the size of the valve leakage is the strongest predictor of how mitral valve regurgitation will affect indi-

UVA HEART AND VASCULAR CENTER

We have expanded to better serve patient needs.

A recent expansion of the UVA Heart and Vascular Center triples the size of its clinic and laboratory space, significantly expanding research, diagnostic and treatment capabilities.

HIGHLIGHTS INCLUDE

- Expanded diagnostic capabilities for echocardiography, stress testing and nuclear cardiology testing
- Consolidated outpatient services — cardiovascular clinics, diagnostics, interventional cardiology, non-invasive procedures and electrophysiology — in one location
- Integrated cardiology, vascular and cardiovascular surgery specialties in 40 clinical exam rooms
- State-of-the-art surgery suites that include endoscopic cameras, imaging technologies, video monitors and a sophisticated infection control system
- Leading-edge digital spaces to house five cardiac catheterization labs, including a dedicated pediatric lab, four electrophysiology labs, two interventional vascular labs and five cardiovascular operating rooms
- An additional 22 pre/post-procedure rooms for patients undergoing interventional or electrophysiology procedures
- A dedicated clinical research suite to support additional clinical trials, such as gene therapy

vidual patients — the bigger the hole, the worse the effects of the condition. In fact, patients with a severely leaky valve are five times more likely to develop heart failure or an irregular heartbeat than those with only mild leakage. "One of our aims is to identify patients who will benefit from early surgery," Dent says. "With our coordinated diagnostic resources, we have the ability to do that."

ESTABLISHED TEAM APPROACH

Determining the appropriate treatment strategy for a condition as complex as valvular disease requires a team approach. Every surgical

continued on page A5