Keep the beat

New hope for complex arrhythmias

If you experience a racing heart, fluttering in your chest or skipped heartbeats, you may have a cardiac arrhythmia. These occur when the electricity that flows through the heart to trigger its pumping action "short-circuits," disrupting the heart's natural rhythm.

Although arrhythmias may occur in structurally normal hearts, they can also indicate serious heart disease. "It's important to diagnose the problem and treat it if necessary," says Adam Berman, MD, a cardiac electrophysiologist, or heart rhythm specialist, with MCGHealth System Cardiovascular Center. But irregular heartbeats can be difficult to pinpoint and treat.

Fortunately, new robotic technology known as Stereotaxis™ Remote Magnetic Navigation (RMN) is improving the treatment of even complex arrhythmias in all four chambers of the heart. MCGHealth System Medical Center is one of only two hospitals in Georgia offering this technology.

> **With this new technology, we can safely pinpoint the precise location of the problem, position the catheter to deliver the required treatment and successfully restore a normal heart rhythm.**
>
> —Adam Berman, MD

Traditional cardiac electrophysiology catheterization

When arrhythmias persist, the treatment goal is often to ablate or destroy the damaged heart tissue causing the malfunction and restore regular heart rhythm. This is generally done through catheter-based electrophysiology (EP) studies and ablations.

Physicians use the robotic RMN system to safely place a catheter in a precise location for treatment.

Benefits of Stereotaxis™ technology

- shorter procedures and faster recovery times
- reduced exposure to X-ray radiation and contrast dyes
- improved outcomes; the soft catheter decreases the risk of serious complications from perforation of blood vessels or heart tissue
- a reduced likelihood of needing second catheterization procedures or highly invasive open heart surgery
- an increased likelihood that patients with complex arrhythmias such as atrial fibrillation and ventricular tachycardia can find interventional treatment and be successfully cured

In traditional cardiac EP procedures, physicians manually push a stiff catheter through the heart to map the cardiovascular system. But some areas of the heart are thin-walled, creating a risk of cardiac perforation during these procedures.

Improved access, better outcomes

With the new robotic system, however, electrophysiologists use software and a control panel to drive powerful magnets positioned near the patient. The physician creates a three-dimensional map of the heart tissue using specialized software. The magnets then safely guide a soft catheter within the map and through the heart anatomy, allowing the physician to position the catheter in the precise location where ablation therapy is required.

The new system gives physicians safe access to even remote areas of the heart that were difficult, if not impossible, to reach before. "With this new technology, we can safely pinpoint the precise location of the problem, position the catheter to deliver the required treatment and successfully restore a normal heart rhythm," Dr. Berman says.

As a result, many patients can avoid second cardiac catheterizations and more invasive procedures, including open heart surgery.

Safely revolutionizing care

The technology is safe for patients. The system's magnets generate magnetic fields that are less than 10 percent of the strength of fields used by magnetic resonance imaging (MRI) equipment, which has been widely used for more than 20 years.

"We are very excited to have this Stereotaxis™ technology in our state-of-the-art electrophysiology lab. Its attractive safety profile and incredible precision have revolutionized catheter ablation for the treatment of arrhythmias," Dr. Berman says. ■

Stay on track with the MCGHealth System Heart Rhythm Center

If you suffer from an irregular heartbeat, our fellowship-trained electrophysiologists—Adam Berman, MD; Hitesh Mehta, MD; and Robert A. Sorrentino, MD—provide a full range of diagnostic and treatment options for adults and children. These include complex ablation procedures for atrial fibrillation, ventricular tachycardia and other conditions that are not available at other local hospitals. Services include:

- conventional and robotic (Stereotaxis™) electrophysiology studies and catheter ablation procedures
- tilt table testing to diagnose and help manage syncope, or fainting
- licensed technicians
- medications, pacemakers, implantable cardio-defibrillators (ICDs) and biventricular/cardiac resynchronization therapy device management
- lead extraction
- catheter cryoablation (freezing technology) for ablation of cardiac arrhythmias
- ablation to stop arrhythmias, including radiofrequency catheter ablation
- second opinions for arrhythmias and implanted device management
- coordination of genetic testing for hereditary arrhythmia syndromes

To learn more, visit **mcghealth.org/heartrhythm.**