Back In Rhythm

Stacy Clark's Heart...and Life

Two years ago, Stacy Clark was only 45
when she was diagnosed with atrial fibrillation. Atrial fibrillation — "A Fib" — is an abnormal heart rhythm in which the upper chambers of the heart (atria) are out of sync with the lower chambers of the heart (ventricles).

In atrial fibrillation, the atria "quiver" chaotically and the ventricles beat irregularly, causing such symptoms as a fluttering feeling in the chest, a racing pulse, low energy, a faint or dizzy feeling, chest pressure or discomfort, shortness of breath and anxiety, and in Clark's case, an unusual symptom of tunnel vision when her heart was out of rhythm. The most serious complication of atrial fibrillation is a blood clot that forms in the heart, which can lead to a stroke. In the United States, an estimated 15 people an hour suffer a stroke due to atrial fibrillation Clark's cardiologist prescribed an antiarrhythmic drug to help control the fibrillation and Coumadin® (or warfarin), a blood thinner, to help prevent clot formation — the standard first line of treatment for atrial fibrillation. But her symptoms persisted.

Three months after her procedure, Stacy Clark was able to discontinue taking the

"It was real scary," she recalls. "I was afraid to go to sleep, to be alone, or to go to the gym. When my heart started shaking, I just didn't know what was going to happen." And she never knew when it would occur.

During one episode of atrial fibrillation, which lasted nine hours, Clark went to the emergency department.

"My heart was beating 140 beats a minute," she says. The normal range for a heart rate is 60 to 100 beats per minute. "It

antiarrhythmic and anticoagulation medications she'd been taking. And she's back to working out at the gym.

took a long time to get my heart back into rhythm, and they did all kinds of tests to make sure my heart wasn't damaged."

Medication wasn't working

After another atrial fibrillation episode sent Clark to the emergency department a second time, it was apparent that medication was not controlling her arrhythmia. Her cardiologist referred her to Leon A. Feldman, MD, FACC, Co-Director of the Electrophysiology Lab and Arrhythmia Center and Section Chief of Cardiology at Eisenhower Medical Center, to evaluate her for a procedure called ablation.

Ablation is a minimally invasive treatment performed by a cardiac specialist called an Electrophysiologist that modifies the heart tissue that is causing the arrhythmia. A thin tube (called a catheter) is inserted into a vein and threaded into the patient's heart using X-ray guidance. A sophisticated, three-dimensional mapping system is utilized by the Electrophysiologist to identify the electrical pathways of the heart causing the arrhythmia. Then, bursts of high-frequency radio waves are sent through the catheter, "zapping" the hot spots. This scars the tissue so the erratic electrical signals are normalized.

"The patients who are the best candidates for ablation are those who've had atrial fibrillation that causes them distress, they have a relatively healthy heart, and have tried medications long enough to know they don't work," explains Dr. Feldman. He has been performing the procedure for the past decade, actively at Eisenhower Medical Center for the past five years.

"Stacy presented as the ideal patient for us," he notes.

Dr. Feldman points out that Clark was, however, unusually young to have atrial fibrillation. "Atrial fibrillation is increasingly common with age," he explains. "The incidence of this condition goes up by a few percent per decade until, by age 80, it is present in about ten percent of the population."

The causes of atrial fibrillation

"We always look for possible causes, especially in younger patients," Dr. Feldman says. "They can include thyroid dysfunction, excessive use of stimulants like caffeine, medications, significant alcohol intake, renal (kidney) disease and sleep apnea — one of the more commonly overlooked causes."

Other causes include abnormalities or damage to the heart's structure, high blood pressure (hypertension), previous heart attacks, abnormal heart valves, congenital [present from birth] heart defects, emphysema or other lung diseases, previous heart surgery, stress due to pneumonia, surgery or other illnesses, and viral infections," states Dr Feldman.

"But it turns out that Stacy was otherwise very healthy and had no medical history to speak of," he adds, which he determined by conducting a comprehensive pre-procedure physical examination.

"We also sent Stacy for a high-resolution CT (Computerized Tomography) scan, which is done prior to scheduling surgery to confirm that a patient is a good candidate for ablation," Dr. Feldman

notes. “This gives us a specialized view of the left atrium which allows us to evaluate the size and shape of the chamber and how many pulmonary veins attach to it.”

“Stacy had the scan at the Eisenhower Imaging Center,” he continues. “It takes less than half an hour and the results are on a DVD that we can import into the mapping system, so we can work with an actual picture of the patient’s heart when we do the procedure.”

The preparation for the ablation procedure itself is minimal, Dr. Feldman says.

“If patients are already in A Fib, they stay on their Coumadin,” he explains. “And if they’re taking antiarrhythmic drugs, those are maintained as well. Sometimes, we perform an imaging exam called transesophageal echocardiography (TEE) to confirm there is no blood clot in the atrium prior to the procedure.”

Patients are admitted to Eisenhower with the expectation that they will stay overnight following ablation, and are discharged the next day.

What the ablation procedure entails

“The procedure is usually done in the morning,” Dr. Feldman says. “The patient is evaluated by an anesthesiologist, then given general anesthesia both for comfort and to improve safety so there’s no movement during this delicate procedure.”

During the procedure, real-time ultrasound called intracardiac echocardiography (ICE) displays where the catheters are positioned. The sophisticated mapping system used at Eisenhower (the EnSite NavX™ Navigation and Visualization Technology) enables the Electrophysiologist to create a three-dimensional picture of the left atrium.

“There’s a point where the catheter is placed in the left atrium by making a small puncture in the intra-atrial septum,” Dr. Feldman explains. “The pulmonary veins are identified and the area around them cauterized to neutralize them. This is the area where much of atrial fibrillation occurs.”

Clark underwent her ablation procedure on May 18, 2012. Dr. Feldman and his colleague Andrew Rubin, MD, FACC, another Electrophysiologist who serves as Co-Director of Eisenhower’s Electrophysiology Laboratory, performed the procedure together — the standard approach at Eisenhower.

An immediate difference “I felt the difference right away, as soon as I woke up,” Clark recalls.

“I wasn’t having any of that shaking in my heart anymore.”

She has remained symptom-free since then. Three months after her procedure, she was able to discontinue taking the antiarrhythmic and anticoagulation medications she’d been taking. And she’s back to working out at the gym.

“Having this procedure has taken a lot of the fear away,” she says. “Now I can go to the gym and work out the way I want to. If my heart pumps fast, I just stop and take my pulse. But I’m good to

go now."

"The procedure is highly successful in the right patient population," Dr. Feldman says, citing a 70 to 80 percent success rate as a reasonable expectation. "In about onethird of patients, a second ablation will be necessary; some areas that are cauterized can heal and conduct electricity again, so they'll require a 'touch up.'"

He also points out that while many patients can stop taking Coumadin after ablation, the procedure is not performed for that purpose.

"The need for anticoagulation medication is based on the individual patient's stroke risk," he says. "But in patients who are low risk and carefully monitored, we can consider stopping anticoagulation drugs three months post-ablation, as we did in Stacy's case."

Is ablation a permanent cure for atrial fibrillation? "We think so," Dr. Feldman says. "The procedure has been actively performed for the last ten years, so our data is limited to that time period. We can't predict 20 years out, but it's as close as we can come to a permanent fix today."

While Clark presented as the ideal patient for this procedure, Dr. Feldman stresses that all patients with atrial fibrillation are potential candidates.

"Even the more difficult cases in which A Fib has been ongoing persistently for years, or those where the left atrium has become significantly enlarged, or if there is uncontrolled hypertension, or if patients have suffered prior strokes," he says. "These conditions don't mean they're excluded; it just requires more thought."

"Plus, here in the desert we have an older population, and we consider patients for ablation who are up to 85 years old if they're otherwise healthy," he adds.

"With this procedure, patients report a quick recovery, there's very little downtime, and it's minimally invasive so there's no actual surgery with cutting done," Dr. Feldman says.

"The most important message I want to communicate is that people don't need to suffer with atrial fibrillation," he adds. "Medications are good and should be tried first for treating this condition, but ablation therapy is an excellent next step." Clark agrees. "I've got my life back," she says.

How Does Atrial Fibrillation Cause a Stroke?

Atrial fibrillation is a chronic condition in which the heart beats irregularly. When the heart is working normally, it contracts and pumps blood in a regular pattern that is controlled by electrical signals in the heart. Atrial fibrillation causes the heart to make disorganized electrical signals. This causes the atria (the upper chambers of the heart) to beat too fast and irregularly — preventing blood from being pumped out to the ventricles (the lower chambers of the heart).

When the heart can't pump out blood effectively, the blood can sometimes pool in the heart and form a blood clot. These clots can travel out of the heart and to the brain. When this happens, it blocks the flow of blood to a part of the brain, causing a stroke.

People with atrial fibrillation are at five times greater risk of stroke than people who do not have this condition. Currently, atrial fibrillation affects more than two million Americans, and the risk of developing this condition increases with age. It is important to understand the facts about this condition.

How is Atrial Fibrillation Diagnosed?

Your doctor may suspect atrial fibrillation if you have symptoms such as a racing or fluttering heartbeat. Or your primary care doctor may discover that you have atrial fibrillation during a routine physical or as the result of testing for another condition. Remember, some people do not have any symptoms. If your doctor suspects you have atrial fibrillation, he or she will confirm it through:

- **A thorough physical exam**

- **A complete medical history**, including questions about your symptoms, any other health conditions you or your family members may have, and lifestyle habits

- **Tests such as an electrocardiogram (EKG),** a simple, noninvasive test that charts your heart's rhythm on a paper graph. Your doctor may also ask you to wear a portable EKG monitor at home (called a Holter monitor) to record your heart's rhythm over 24 to 48 hours. Further testing, such as a blood test, chest X-ray, or echocardiogram (which shows your heart in motion) may be indicated to look for the underlying cause of atrial fibrillation as well as signs of complications.

What Are the Symptoms of Atrial Fibrillation?

While some people with atrial fibrillatiohave no symptoms, others may experience one or more of the following:

- Racing, irregular heartbeat
- Fluttering ithe chest
- Heart palpitatio
- Dizziness
- Shortness of breath
- Chest pain
- Weakness
- Faintness
- Fatigue when exercising
- Sweating

If you or someone you know experiences any of these symptoms, talk to your primary care doctor.

HealthNotes is a publication of Eisenhower Medical Center · © Copyright 2015 All Rights Reserved · www.emc.org