

HEARTBEAT

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Atrial Fibrillation: Surgical Interventions

Atrial fibrillation (AF) is the most common heart rhythm problem. It affects more than six percent of Americans over 65 years of age and nine percent of Americans over 70 years of age. The American Heart Association states that 2.5 million people in the United State have AF and that 300,000 new cases will be discov-

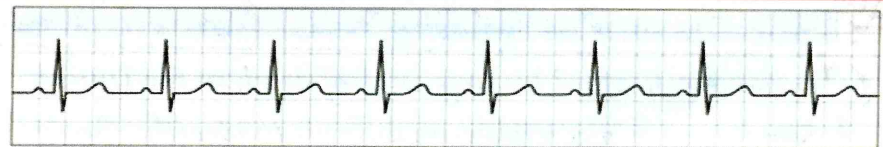
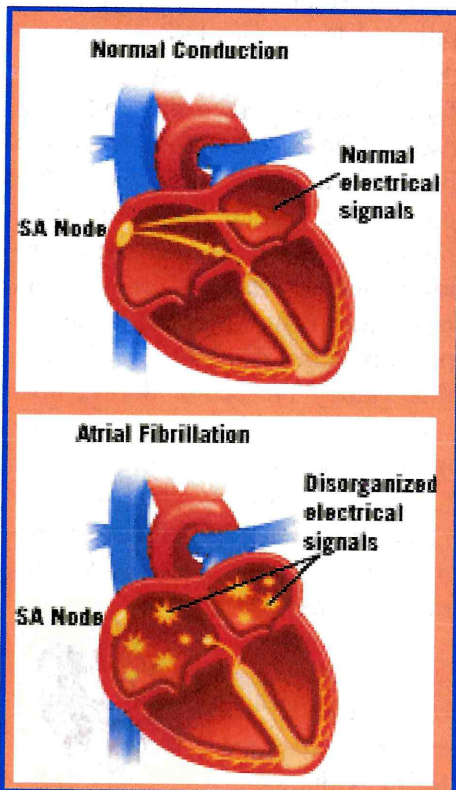
ered each year. It is a very significant public health problem, affecting 6 million people in the Western World. The incidence of atrial fibrillation increases with age, and as the United States population continues to age, the number of affected people will increase.

During atrial fibrillation, the atria (upper chambers of the heart) beat between 400-600 beats/minute. The chambers beat so fast they can only quiver. A normal heart beats an average of 60-100 beats per minute. The diagnosis is most commonly made

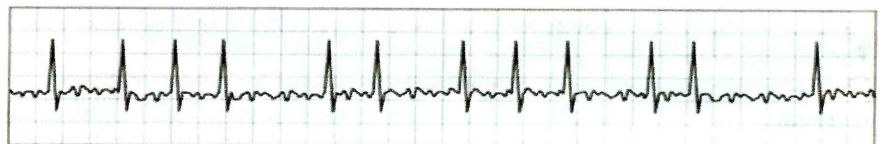
by the appearance of a very fast irregular rhythm on EKG or Holter monitor. Many patients experience symptoms of shortness of breath, palpitations, fatigue, chest pain, dizziness, and syncope.

The causes of atrial fibrillation include mitral valve disease, high blood pressure, coronary artery disease, and congestive heart failure. Sometimes, however, the cause is unknown (idiopathic). Pericarditis, chest trauma, or pulmonary disease, as well as some medicines, can cause attacks in patients with normal hearts. There

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ECG tracing of a normal heart rhythm.



In atrial fibrillation, the tracing shows tiny, irregular "fibrillation" waves between heartbeats. The rhythm is irregular and erratic.

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are four types of atrial fibrillation: paroxysmal (self-terminating <48 hours), persistent (requires intervention), permanent (long-term/failed therapy), and surgical/post-operatively (usually <72 hours).

Due to the heart's improper pumping function, blood is not completely emptied from the heart's chambers causing it to pool and clot. The clot can dislodge and result in a stroke of the brain. Atrial fibrillation increases the stroke rate three to five times and is responsible for 15 – 20% of all strokes. It costs approximately four billion dollars a year to treat the atrial fibrillation related stroke. Factors increasing the risk of stroke include mitral valve disease, increasing age, reduced left ventricular function and heart failure, hypertension, and diabetes. Patients with "lone" atrial fibrillation below the age of 60 are at a lower risk of stroke. Atrial fibrillation increases the death rate two-fold. The longer the patient is in atrial fibrillation the more difficult it is to treat and eliminate the rhythm.

Treatment options available to patients with atrial fibrillation include medical therapy, with multiple drugs including Digitalis, beta-blockers, calcium channel blockers, Cordarone, and others. Some drugs are very poorly tolerated with major side effects, including liver and nerve problems. In addition, most patients who require drugs to treat their rhythm problem also take Coumadin, a blood thinner, which increases your risk of bleeding.

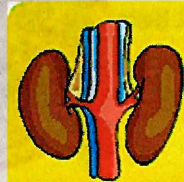
Other treatments available are percutaneous intervention or ablation, which is done by the cardiologist and requires the patient to be exposed to a significant amount of radiation with possible injury to the esophagus from the energy source used. This technique also has very poor long-term outcomes. The success rate, or the percent of people remaining in normal sinus rhythm after either medical therapy or ablation, is only 60% of the patients.

Another option? A new surgical therapy is being offered to

patients, which has an excellent success rate with over 95% of patients staying in normal sinus rhythm. This new surgical therapy is minimally invasive requiring a very small incision in the chest and the use of a camera. Our own group has utilized two separate energy sources, one using ultrasound and the other using radiofrequency energy. One of our cardiothoracic surgeons, Dr. Dimitris Kyriazis, has been trained and has successfully performed multiple procedures in our area. The procedures have excellent safety and efficacy, and do not require the heart-lung bypass machine. If you are interested, please do not hesitate to make an appointment with Dr. Kyriazis to discuss treatment of your atrial fibrillation with new surgical techniques.

Kidney Protection

Kidney disease is a major problem for many of our patients. Many procedures can cause the kidney to have trouble or even fail. We now have the ability to use a drug that helps increase the blood flow to the kidneys. This process is called targeted renal therapy. We place a catheter directly at the takeoff of the renal arteries and infuse a drug while we perform other procedures. We use this kidney protection during procedures where the patient may be at high risk for complications to the kidneys. Primarily, we use targeted renal therapy during coronary artery bypass grafting, peripheral vascular cases using dye, and any other cases where we may be concerned for the kidneys.



Corner

Patient

Recognizing a Stroke

Strokes are the third leading cause of death in the United States. Sometimes strokes are difficult to identify. Recognize a stroke by remembering these 3 identifiers.

Smile -- ask the person to smile for you. Look for a crooked tongue or sensory loss on one side of the face.

Talk -- ask the person to speak a simple sentence. Listen for slurred or absent speech.

Raise both arms -- ask person to raise arms over head. Watch for muscular weakness, imbalance, or dizziness.

If you or someone you know notices any trouble with any of these symptoms, call 911 immediately.

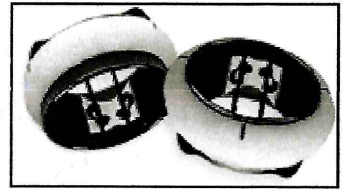
CVA involved in On-X Valve research study

Cardiovascular Associates has been asked to participate in a reduced anti-coagulation study for On-X mechanical heart valves. It is well known that patients receiving mechanical heart valves, whether in the aortic or mitral position, require anticoagulation with a "blood-thinner" called coumadin. This medicine is used to prevent blood clots from forming on the valve leaflets, also known as valve thrombus. If the valve thrombus should break loose (embolize) and travel to the brain it could cause a stroke.

This study is hypothesizing that patients receiving On-X valves will be able to be maintained on low-doses of

coumadin with the same end result, no thrombosis on the valve leaflets. Patients will also have the added benefit of learning how to test their own INR (International Normalized Ratio) blood levels in our office, then be provided with a machine to continue their testing at home. This will greatly decrease the number of visits the patient will have to make to the hospital laboratory and physician's office. Instead, when a patient has an INR level outside of their suggested range, either above or below, they have a toll-free number to call that will connect with our office where they will speak with a clinician to adjust the dosage of their coumadin.

Many patients do not want to take coumadin because

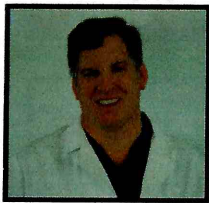


of the associated risk of increased bleeding time. The conduction of this study may prove that the ON-X valve is the only mechanical valve that can be maintained at a lower INR level without serious complications of thrombus. The long-term goal of ON-X is to prove that their valve in the aortic position requires little to no coumadin at all, and maybe just aspirin and Plavix.

IN GOOD HANDS

Although many think of them simply as *heart surgeons*, the physicians at Cardiovascular Associates are trained in all areas of cardiac, thoracic, and vascular surgery. Their backgrounds include training with the distinguished surgeon Dr. Michael DeBakey of Houston, attendance at various medical schools across the country, and yearly postgraduate courses. All are Fellows of the American College of Surgeons, and hold membership in multiple professional societies.

Michael Damrich, M.D.



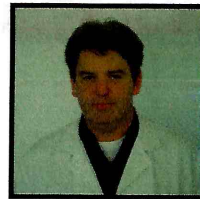
- ◆ General, vascular, cardiovascular and thoracic training with Dr. DeBakey
- ◆ Diplomate, American Board of Surgery, American Board of Thoracic Surgery
- ◆ Fellow, American College of Surgeons

Carl Maltese, M.D.



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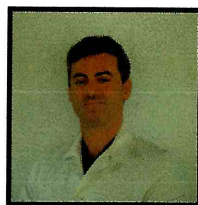
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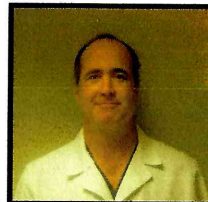
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- ◆ Fellow, American College of Surgeons, American College of Chest Physicians, American College of Cardiology

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Connie Pennington Terri Rice



M.S. Nursing in Critical Care

Nicole Miller



Christy Paragone



Eva Bernacik

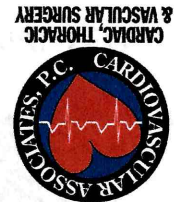


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In This Issue..

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- On-X Valve Study
- Kidney Protection
- Recognizing a Stroke

Comprehensive List of Surgeries

Cardiac

- ◆ Coronary artery bypass
- ◆ Repair or replacement of valves of the heart
- ◆ Repair of congenital defects and patent ductus arteriosus
- ◆ Implantation of pacemaker and defibrillator devices
- ◆ Minimaze for atrial fibrillation

Thoracic

- ◆ Repair of chest wall defects
- ◆ Lung biopsy/Removal of lung lesions/Lung cancer surgery
- ◆ Esophageal repair/Resection of esophageal cancer

Vascular

- ◆ Carotid endarterectomy
- ◆ Repair of abdominal aortic aneurysms/ Endovascular option
- ◆ Peripheral vascular surgery & peripheral balloon angioplasty
- ◆ Dialysis access grafts
- ◆ Targeted renal therapy
- ◆ Vascular studies

Other

- ◆ Spinal exposure for neurosurgery and orthopedic surgery
- ◆ Consultant to hyperbaric and wound care center