

CATHETER ABLATION FOR CARDIAC ARRHYTHMIA

A cardiac arrhythmia, also known as a dysrhythmia, is an irregular or abnormal heart beat.

One type of treatment for cardiac arrhythmia is a catheter ablation. During this procedure, a thin, flexible tube called a catheter is placed into the heart. A device delivers energy via the catheter into the very small portions of the heart muscle that are causing the abnormal heart beat. The energy blocks the pathway for the electrical misfiring responsible for the arrhythmia, therefore preventing the abnormal heart beat. Ablation is also used in some cases to disrupt the electrical pathway between the atria (uppermost chambers) and ventricles (lowermost chambers) of the heart. Each patient's case determines what type of ablation is performed.

ABNORMAL HEART RHYTHMS TREATED BY ABLATION

Impulses in a normal heart beat travel through the heart's electrical pathways. These impulses result in the atria and ventricles contracting in an efficient manner that allows the chambers to fill up with blood, contract, and then pump the blood out of each chamber. If abnormal electrical impulses travel through the heart, the chambers cannot properly fill and contract repeatedly. As a result, they may contract and “pump” blood before they are filled with an adequate amount of blood.

The heart's “electrical system” is the power behind the heart beat. Any disruption in this system creates an abnormal heart beat. Catheter ablation treats the following types of cardiac arrhythmias:

■ **AV Nodal Reentrant Tachycardia (AVNRT):** An extra pathway located in or close to the AV node causes impulses



to move in a circle motion and travel through areas it has already crossed.

■ **Accessory Pathway:** Sometimes extra pathways present from birth (congenital) connect the atria and ventricles. These extra pathways result in a heart rate that is too fast because electrical signals travel back to the atrium abnormally.

■ **Atrial fibrillation and atrial flutter:** Extra signals that originates in various portions of the atrium cause the atrium to contract very quickly (i.e., atrial flutter) or they may quiver (i.e. atrial fibrillation).

■ **Ventricular tachycardia:** a very fast, possibly life-threatening abnormal heart rhythm that is originated from abnormal impulses in the ventricles (lower chambers). As a result, the ventricles do not fill with adequate amounts of blood and they are unable to pump enough blood throughout the body.

ASSESSMENT

Each patient undergoes an assessment with the physician to determine the appropriate treatment. The assessment may include a medical history, physical exam, electrocardiogram (called an ECG or EKG), and Holter monitoring. Patients taking Coumadin (warfarin) may need additional testing.

RISKS

Catheter ablation is considered a very safe procedure. Any medical invasive procedure carries risk; precautions are taken to reduce the risk. The physician will discuss with you the risks and benefits of catheter ablation.

PREPARING FOR THE CATHETER ABLATION

Medications

The physician will discuss whether medications such as aspirin or other drugs should be taken prior to the procedure. Patients are told to discuss all

Continued on back page

medications with the physician and to only discontinue medication usage if the doctor instructs them to do so. Patients with diabetes must ask the physician whether or not to take their insulin or other medications.

Food and Beverage

You may have a normal meal the evening prior to the catheter ablation. After midnight the night before the catheter ablation, DO NOT EAT, DRINK or CHEW anything (including gum, mints, water, etc.) If there are medications you must take, please swallow them with very small sips of water.

Clothing

Before you arrive at the hospital, please remove all makeup and nail polish. Please leave all jewelry, watches and valuables at home and wear comfortable clothing. You will change into a hospital gown after you arrive.

Please bring your medications (discuss with your physician which ones should be taken the morning of the procedure), as well as a robe and toiletries. These items can be stored with a family member or friend during the procedure.

A nurse will insert an IV line, which will make you drowsy. Your neck, upper chest, arm and groin areas will be washed with an antiseptic. Any areas where the catheter will be inserted will be shaved.

A medication will be given through your IV to make you feel drowsy. Your neck, arm, upper chest and groin areas will be cleansed with a hospital antiseptic, and catheter insertion sites will be shaved. During this time, you will be draped.

DURING CATHETER ABLATION

The area of St. David's Medical Center where catheter ablations are performed is called the Electrophysiology (EP) Lab. You will continually moni-

tored throughout the procedure. Monitoring equipment includes:

■ **Electrocardiogram or EKG:** Attached via adhesive, this device monitors electrical impulses that travel through the heart.

■ **Mapping system:** Leading-edge technology is available to help the physician pinpoint the specific area of the heart causing the arrhythmia.

■ **Oximeter monitor:** Clips onto a finger to monitor the oxygen level in your blood.

■ **Fluoroscopy:** This large x-ray device allows physicians to visualize the catheter throughout the ablation. Intracardiac ultrasound: shows images of the interior of the heart.

CATHETER INSERTION

Once you feel sleepy, the physician numbs the sites where the catheters will be inserted. The physician will insert catheters through a small incision in a blood vessel located in the neck, arm, or groin. The catheters will be advanced through the vessel and into the heart. When they are in place, the physician checks the monitor to evaluate the heart's electrical system. A device similar to a pacemaker is used to make the heart rate faster. Using catheters, the physician determines the precise location of the origin of the arrhythmia. At that point, energy is administered through the catheter. This energy ablates the tiny portion of the heart muscle that is triggering the arrhythmia.

AFTER CATHETER ABLATION

Bed Rest

After the physician removes the catheters, it will be necessary to apply pressure to the insertion sites so that bleeding does not occur. You must stay

in bed for one to six hours following the procedure in order to prevent bleeding. Your legs must be held still. The insertion site will be covered with a small bandage; this area must be kept clean and dry. If you notice any redness, swelling or drainage in this area, notify your nurse at once. You may remove this bandage after you arrive at home.

While you are in the recovery area, a device called a telemetry monitor will record your heart rhythm so that the nurses can observe it. Some patients may go home that night; others may stay overnight in the hospital.

POST-PROCEDURE DISCOMFORT

During the first 48 hours following catheter ablation, you may experience chest discomfort or fatigue. If these symptoms are severe or if they are prolonged, please notify your physician or nurse. You will be given discharge instructions.

MEDICATIONS

You may be prescribed a medication to control abnormal heart beat. Before leaving the hospital, please ask your physician if you should resume taking medications prescribed prior to the catheter ablation.

GOING HOME

Because you received a sedative during the procedure, it is not safe to drive. A responsible adult must drive you home.