

CARDIAC CATHETERIZATION

Your doctor has suggested you have a coronary arteriography. This is also called coronary angiography or coronary catheterization. Doctors use coronary arteriography to evaluate blockages in the blood vessels that supply blood to the heart. This procedure helps them determine the number and severity of diseased blood vessels.

Cardiac catheterization is the “gold standard” for diagnosis of coronary artery disease (CAD). During your procedure, the doctor inserts a thin, flexible tube (called a catheter) into the blood vessel at your groin. Contrast fluid (a “dye” visible by x-ray) is injected into the bloodstream, where it travels to your heart. Then the doctor will take x-ray pictures and study them to see whether your heart’s blood vessels are blocked or damaged. The procedure takes about one hour and can be done in an outpatient manner. However, if an angioplasty is performed at the same time as a heart catheterization, the patient is usually admitted to the hospital overnight for observation. All contrast dyes contain iodine. However, patients with a history of allergy to iodine can still undergo heart catheterization. These patients are usually pretreated with one or more days of oral steroids to suppress the body’s allergic mechanisms.

What is coronary angioplasty?

Coronary angiography is a diagnostic procedure during which the coronary arteries are imaged in order to define their anatomy and identify stenosis or blockages, within the arteries. Coronary angioplasty, or percutaneous transluminal coronary angioplasty (PTCA), is a therapeutic procedure geared toward treating coronary stenosis or occlusion. During this procedure, the cardiologist advances angioplasty balloon into the coronary artery and under x-ray guidance, positions the balloon over the site of the blockage, or stenosis. Inflation of the balloon stretches the artery, compressing the plaque against the artery wall, thereby enlarging the artery channel. While the balloon is inflated, it occludes the artery channel and blood cannot pass. During this time, the patient may experience chest discomfort, until the balloon is deflated. Following angioplasty, the artery channel is enlarged. However, since the artery contains elastic tissue, there is always some degree of “recoil” after the balloon is deflated. Over the ensuing weeks, as the artery heals, the recoil process may continue. In some cases (30-40%), severe recoil can cause “restenosis”, or renarrowing of the arterial channel. Fortunately, a device known as a “stent” has been developed that overcomes the recoil phenomenon.

What is a stent?

A stent is a tubular mesh of metal (usually stainless steel) that is deployed in the coronary artery after an angioplasty. A stent is mounted on an angioplasty balloon in its collapsed state. The stent/balloon assembly is then advanced into the coronary artery and positioned over the site of the coronary lesion. When the balloon is inflated, the stent becomes fully expanded and apposed against the coronary wall. The balloon is then removed but the stent remains in the coronary artery. Following stenting, the patient is treated with aspirin in addition to another blood thinner in order to prevent blood clotting at the site of the bare metal stent. The use of the stents has dramatically reduced the restenosis rate to 20%, or about half of that observed after the angioplasty alone.

What is coronary artery bypass graft (CABG)?

A coronary blockage can be corrected with angioplasty or a stent. Some patients however, are not good candidates for angioplasty. These include patients that have blockages in all three coronary arteries or who have anatomy that is not amenable to angioplasty, such as a completely (100%) occluded artery. In these patients, coronary bypass, or “open heart surgery”, is considered. Coronary bypass involved taking a vein or artery (from the chest wall, leg, or arm) and using it as a bypass conduit by sewing one end to the aorta and the other end to the coronary artery distal to the place of blockage. Coronary bypass surgery is an excellent procedure that generally provides good long term relief of angina and in patients with a weakened heart or disease of the “left main artery” prolongs life span.

Cardiac catheterization is also done for one or more reasons:

- To evaluate or confirm CAD for people who have chest pain or an abnormal stress test.
- To determine whether treatment (with balloon angioplasty or bypass surgery) can help a patient diagnosed with coronary heart disease.
- To see how well blood flows through the coronary arteries after angioplasty or bypass surgery
- After a heart attack, to find out how severely the coronary arteries are narrowed or blocked
- To evaluate the cause of heart failure
- To determine if there is significant heart valve disease that might require surgery
- To determine whether there is a congenital heart defect and evaluate how severe it is.

Preparing for the procedure

- Unless you are already in the hospital, you will most likely be asked to arrive in the morning on the day of the catheterization. You may have several routine tests, such as an ECG, X-rays, and blood tests.
- The doctor will review your medical history and examine you. The doctor or nurse will talk with you about the procedure and its purpose, risks and benefits. This is a good time to ask any questions and, most important, to share any concerns you may have. You will then be asked to sign a consent form.
- The nurse will shave and cleanse the area where the catheters will be inserted. This is usually at the groin (the fold between the thigh and abdomen). In some cases it may be your wrist or arm. Shaving and cleansing make it easier to insert the catheters and help prevent infection.
- An intravenous (IV) line will be inserted into a vein in your arm. This line allows drugs to be injected directly into the vein, if they are needed. To help you relax, you will be given a sedative.
- If you wear dentures, hearing aids, or glasses, you will most likely be allowed to keep them on.

Before Your Catheterization

- Generally, you'll be asked not to eat or drink anything for 6 to 8 hours prior to the procedure. This helps prevent nausea. You may have small sips of water to take your medications.
- Check with your doctor several days before the procedure. You may be asked to stop some medications (such as aspirin or anticoagulants) for a few days before your procedure.
- Make arrangements with a friend or family member to drive you to and from the hospital. You will not be permitted to drive home after the procedure, since you may be sedated.
- Pack a small bag in case your doctor decides to keep you in the hospital overnight. You may want to include a robe, slippers, pajamas, or toiletries.
- Bring a list of the names and dosages of medications you are taking.
- Tell the doctor or nurse if you have had any allergic reactions to medications or X-ray dye (contrast), iodine or seafood, or if you have a history of bleeding problems.

At Home

- Have someone drive you to your appointments the next few days.
- Adjust your lifestyle to light and easy activities for 2 or 3 days after the procedure. Avoid heavy or strenuous activity for 2 weeks after the procedure.
- Ask your doctor when you can expect to return to work.
- Take your medications exactly as directed, do not skip doses.
- Drink 6-8 glasses of water a day to prevent dehydration and to help flush your body of the dye that was used during your arteriography.
- Leave the dressing on your groin (or arm) until the day after the procedure. The nurse will tell you how to take it off and when it is ok to shower.
- A bruise or small lump under the skin at the catheter insertion site is quiet common. It should disappear within a few weeks.
- Eat a healthy diet that is low in fat, salt and cholesterol. Ask your doctor for menus and other diet information.
- Break the smoking habit. Enroll in a stop-smoking program to improve your chances of success.
- Exercise according to your doctor's recommendation.
- **Call our office for a follow up/questions or concerns at 214-544-7555.**

Call your doctor immediately if you have any of the following:

- Chest pain
- Constant or increased pain or numbness in your leg
- Fever above 100 degrees or other signs of infection (redness, swelling, drainage, or warmth at the incision site)