

# Great Lakes Heart Center of Alpena

## Patient Education Handout

### Definition

Cardiac catheterization and coronary angiography are invasive, diagnostic procedures that are performed to obtain information about the heart or its blood vessels. These procedures involve directing a catheter or catheters into the right and/or heart chambers and into the origin of the coronary arteries.

During cardiac catheterization the pressure and blood flow in the cardiac chambers are measured. Blood in these different chambers can also be collected to look for shunts or abnormal connections between chambers. During coronary angiography contrast material is directly injected into the coronary arteries and the subsequent image recorded on x ray.

### Indications

Cardiac catheterization is performed:

- To determine whether the coronary arteries are obstructed or narrowed.
- To determine the severity of the coronary stenosis, the number of coronary arteries involved and their location.
- To evaluate the severity of valve dysfunction.
- Determine the need for cardiac surgery.
- To evaluate congenital cardiac abnormalities.

### How the test is performed

- An intravenous (IV) line is started.
- The skin over the groin, wrist or arm or neck is then thoroughly shaved and cleaned.
- A sedative is then given intravenously to help the patient relax.
- The area is then anesthetized using a local anesthetic.
- A small catheter called a sheath is then inserted through the skin and into IV the blood vessel. The catheters that actually go to the heart are placed through this sheath.
- The catheters are carefully advanced to the heart using fluoroscopy, an x-ray technique that produces live or real-time images.
- Once the catheter is in place, pressure measurements are then made and contrast material is injected and the resulting images recorded.
- In a typical procedure several catheters are used to evaluate the different coronary arteries and different heart chambers.
- At the end of the procedure the sheath is removed. To prevent bleeding at the point of entry direct pressure is applied as the sheath is pulled out. Alternatively a small plug or stitch is placed.
- If the procedure is performed through the groin, the patient will need to lie flat for a few hours to avoid bleeding.
- Percutaneous coronary intervention (PCI) maybe performed to open obstructed coronary arteries.

## **Preparing for the Procedure**

- Do not eat or drink 6 to 8 hours before the test.
- Admission the night before the test maybe required. Otherwise, the patient is admitted on the morning of the procedure.
- The procedure and its risks should be explained.
- Tell the doctor or nurse what medications the patient is taking, what medications the patient is allergic to, whether the patient is allergic to seafood, if the patient has had a bad reaction to contrast material in the past or if the patient might be pregnant.
- A witnessed, signed consent for the procedure is required.

## **Possible Complications**

- Discomfort at the site where the procedure is performed.
- Some back discomfort from having to remain still for a long time.
- Bleeding at the entry site.
- Hematoma formation.
- Injury to the artery causing a pseudoaneurysm or an AV fistula.
- Nerve injury.
- Hemorrhage.
- Low blood pressure.
- Reaction to contrast medium.
- Reaction to the sedative.
- Cardiac arrhythmias.
- Kidney failure.
- Cardiac tamponade
- Stroke.
- Heart attack.
- Death.

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