

Cardiac Catheterization

Overview:

- Cardiac catheterization is a medical procedure used to diagnose and treat certain cardiovascular conditions.
- Cardiac catheterization rarely results in serious complications.
- The procedure is done to diagnose and treat certain problems with the heart valves or arteries.
- It is important to follow the doctor's instructions before, during, and after the procedure.
- Cardiac catheterization is usually performed while the patient is awake. However, in certain cases, the procedure is performed while the patient is under general anesthesia.

Cardiac Catheterization Definition:

Cardiac catheterization is a common medical procedure that rarely results in serious complications. It is used to examine the function of the cardiac valves and arteries, as well as the cardiac muscle. It is also used to treat certain heart conditions. During cardiac catheterization, a long thin tube called a catheter is inserted in an artery or vein in the groin, neck, or arm and threaded through the blood vessels to the heart. The procedure also includes taking X-ray scans of the coronary arteries that transport blood to the cardiac muscle.

Other Names:

Heart catheterization - Coronary angiogram.

Why It's Done:

- To locate coronary arteries that were narrowed or blocked due to plaque buildup.
- To evaluate or confirm the presence of valve disease.
- To evaluate heart muscle function.
- To perform an arterial angioplasty to open up narrowed or blocked segments of an artery.
- To measure the oxygen content in the four chambers of your heart.
- To locate congenital defects in the cardiac valves or between heart chambers.
- To remove a small piece of heart tissue to examine it under a microscope (biopsy).
- To take X-rays to evaluate the blockage in the coronary arteries.

How It Is Performed:

1. The patient is given an injection of local anaesthetic to numb the needle puncture site.
2. A long thin tube called a catheter is inserted into the patient's blood vessels through the groin or arm.
3. The catheter reaches the arteries of the heart.
4. A video screen will show the position of the catheter as it is threaded through the blood vessels and to the heart.
5. When the catheter is in place, a small amount of dye is injected so that the coronary arteries can be seen more clearly.
6. When a catheter is used to inject a dye that can be seen on X-rays, the procedure is called angiography.

Interventional Procedure:

An interventional procedure (also called angioplasty) is a non-surgical treatment used to open narrowed coronary arteries to improve blood flow to the heart. An interventional procedure can be performed during a diagnostic cardiac catheterization when a blockage is identified, or it may be scheduled after a catheterization has confirmed the presence of coronary artery disease. Interventional procedures include balloon angioplasty and stent placement depending on what the patient needs.

Preparing for Cardiac Catheterization:

- Tell your doctor about any medications you take.
- Make sure that all the necessary tests are conducted before undergoing cardiac catheterization.
- Don't eat or drink anything for at least 4 hours before the procedure, or as directed by your doctor.
- Tell your doctor if you are allergic to anything, especially iodine.
- Don't stop taking your medications or change the dosage without consulting your doctor (such as: aspirin, diabetes medication, and others).
- Try to stay relaxed and avoid stress and tension.
- Make sure to remove dentures and any jewelry, especially necklaces.

After Cardiac Catheterization, When Should You See Your Doctor?

- After one week to make sure that the wound is healing properly.
- If you notice any bleeding near the catheter insertion site.
- If you experience unusual pain, swelling, redness, or other signs of infection near the catheter insertion site.
- If your feet feel cold or turn blue.
- Talk to your doctor about whether certain activities such as weight lifting should be avoided for a short time after catheterization.

Frequently Asked Questions (that need to be answered by a specialist)

- **Will the patient be awake during the procedure?**

Yes. The patient will be given a mild sedative to relax them and the doctor will use a local anesthetic to numb the catheter insertion site. Cardiac catheterization is not considered a major surgical procedure because there is no large incision used to open the chest and the recovery time is much shorter than that of an open-heart surgery.

- **How long does the procedure last?**

The diagnostic cardiac catheterization procedure itself generally takes 30 minutes. However, if an interventional procedure is performed, it may take an hour or more.

- **Is it possible to undergo the procedure again?**

Yes, if the patient's condition necessitates getting another procedure.

- **Does the procedure have any side effects or serious complications?**

Yes, one of the procedure's rare complications is cardiac arrest or a blood clots in the heart or brain. The risk of these serious complications is estimated to be less than 1 in every 100,000 cases.

- **How safe is the procedure for the elderly?**

It is safe. It is always advisable to weigh the pros and cons of getting such procedures depending on the case.



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- **Are there any alternative procedures available?**

For diagnosis, a CT scan of the arteries can be performed but it is less accurate than a diagnostic cardiac catheterization. However, for an interventional procedure for the coronary arteries, there are no alternatives other than open heart surgery.

References:

- [The American Heart Association \(AHA\)](#)
- [Mayo Clinic](#)
- [National Heart, Lung, and Blood Institute \(NHLBI\)](#)
- [Cleveland Clinic](#)
- UK's [National Health Service \(NHS\)](#)

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