

## Angiography Department Bon Secours, Tralee

### Cardiologists:

Dr. L. Keary  
Dr. Y. Smyth

### Services:

Coronary Angiography

Right Heart Catheterisation

Percutaneous Coronary Intervention, (Angioplasty/ Stenting)

Permanent Pacemaker Insertion

Loop Recorder Insertion and Removal

IntraVascular Ultrasound, (IVUS)

Patent Foramen Ovale, (PFO) closure

### Contact:

Colm Patton,  
CNM 2, Cath Lab.  
Tel: 0667164508  
Email: [cpatton@bonsecours.ie](mailto:cpatton@bonsecours.ie)  
Fax: 066 7149853

Anne Ryan,  
Clinical Specialist Radiographer.  
Tel.: 066 714 9800, Ext. 619  
Email: [Aryan@bonsecours.ie](mailto:Aryan@bonsecours.ie)  
Fax: 066 7149853

## **CORONARY ANGIOGRAPHY**

Cardiac Catheterisation, (also known as Coronary Angiography), is an invasive test to find out whether or not there are any narrowings or blockages in the coronary (heart) arteries and how well the heart is pumping.

### **PURPOSE OF THE PROCEDURE:**

The purpose of Cardiac Catheterisation is to determine whether any narrowings of the coronary arteries have occurred and if so, to determine the most appropriate treatment for you. It is also possible to obtain information about the pumping efficiency and valves of your heart.

### **PREPARATION:**

Cardiac Catheterisation can be done as a day case.

You must be fasting for four hours prior to the procedure. The Cardiac Nurse will advise you in advance what time to fast from.

**All medications should be taken as normal, except:**

**WARFARIN**, which should be stopped as advised by the Cardiac Nurse

And

**GLUCOPHAGE / METFORMIN**, which should not be taken the day before the procedure and for two days after it, or as advised by the Cardiac Nurse.

You must arrange to be collected on discharge, as you should not drive or travel home unaccompanied.

You must have a responsible adult staying with you the night following the procedure.

### **PROCEDURE:**

The test is performed in a specially equipped room called a Cardiac Catheterization Laboratory (Cath Lab) and will typically take about 20 - 30 minutes to perform. The scheduling of your test is an approximate estimate only. You will be awake for the procedure as it is performed under local anaesthetic. Light sedation may be given if required. Usually the blood vessel at the top of the right leg (groin) is used to access the arteries. (Sometimes the left leg or arm may be used.) A local anaesthetic is given to numb the area over the blood vessel in the right leg. The vessel is punctured with a needle and then a small plastic tube, called a catheter is passed up to the heart arteries under x-ray guidance. A special x-ray dye is then injected which allows pictures of the heart to be seen and information is recorded permanently. This dye is excreted by the kidneys after a couple of hours.

## **RIGHT HEART CATHETERISATION**

Sometimes it is necessary to assess the valves function on the right side of the heart, measure the blood pressure and blood flow in the heart chambers and take blood samples. This can be done as part of the procedure and involves placing a second tube in another blood vessel in the right leg; this is known as right heart catheterization. Your doctor will decide if this is necessary for you.

## **PERCUTANEOUS CORONARY INTERVENTION, (PCI).**

This is also known as coronary angioplasty. PCI and the insertion of a stent is a way of opening up blocked / narrowed coronary arteries and increasing the blood flow to the area of heart muscle they supply.

### **PREPARATION:**

The preparation is the same as for a coronary angiogram and is performed in the same department.

### **PROCEDURE:**

PCI may take about 1 to 1.5 hours and is performed under local anesthetic. A doctor and nurse will be present to explain the procedure to you. The initial part of the procedure is the same as for coronary angiography. Once the catheter is in place a thin wire called a guide wire is threaded through the catheter towards the narrowed section of the artery. Over this the doctor will advance the angioplasty catheter that has a balloon at the tip. When the balloon is inflated you may experience some angina-type symptoms. These symptoms are normal but tell your doctor if you experience this. The pain usually disappears after the balloon is deflated.

This may be repeated a few times until the artery is opened adequately. When necessary, a coronary stent is implanted in the same way. A stent which is like a metal coil is designed to prevent the opened section of the artery from narrowing again. The stent remains in place permanently.

### **WHAT HAPPENS AFTERWARDS?**

Following Coronary Angiography, Right Heart Catheterisation or PCI, you will need to stay on bedrest for a period of time. The amount of time will depend on the procedure you had and whether or not a closure device was used to close the artery at the top of the leg at the end of the procedure. You will be given instruction on this by the nursing staff looking after you. The doctor will discuss the results with you before you are discharged and make recommendations for further treatment. You are advised not to drive, operate machinery or undertake heavy physical activity as advised by your Cardiologist.

If you have had a PCI, you will need to stay in hospital overnight.

### **RISKS AND COMPLICATIONS:**

Due to the invasive nature of the test, Cardiac Catheterization and PCI carry a slightly higher risk than other heart tests, but they are very safe when performed by an experienced team.

Tell your doctor if you have any allergies, especially if allergic to seafood or if you have had a bad reaction to x-ray dye or iodine in the past, or if you might be pregnant.

## **INTRAVASCULAR ULTRASOUND**

Occasionally, the cardiologist will deem it necessary to perform Intra-vascular Ultrasound, (or IVUS). This procedure gives ultrasonic pictures of the coronary artery which are sometimes necessary to aid the Cardiologist to determine the appropriate treatment. It is similar to Angioplasty in that a very small catheter is placed into the artery to provide these images. There are no extra needles or tubes inserted in the top of the leg for this and patients feel no added discomfort.

The post procedural care will be the same as that following PCI.

## **PERMANENT PACEMAKER**

Permanent Pacemakers are inserted in the Cath Lab. Your Cardiologist will decide if you need a pacemaker. This device may be indicated for people whose own heart is beating too slowly or irregularly to allow them to comfortably perform the activities of daily living.

A Pacemaker is roughly the size of a matchbox and sits underneath the skin, normally in the left shoulder area.

Gentle sedation is given at the start of the procedure which takes around an hour to perform. The Pacemaker is inserted under local anaesthetic. You will be required to lie flat and still for the duration of the insertion. You will be given information and instructions after the procedure. Pacemaker insertion usually requires an overnight stay in hospital.

## **PATIENT ACTIVATED CARDIAC EVENT RECORDER**

This is a device which allows irregular or unusual heart rhythms to be recorded. The Event Recorder, or Loop Recorder, is a small device implanted under the skin in the left shoulder area under local anaesthetic. The patient is given a hand-held telemetry unit that he or she activates whenever there are symptoms to initiate ECG (heart rhythm) recording and storage. The device can stay in place for up to 14 months and is also removed in the Cath Lab, under local anaesthetic. The information this device provides aids the Cardiologist in deciding upon the appropriate treatment.

## **PATENT FORAMEN OVALE, (PFO) CLOSURE**

The Foramen Ovale is a small opening between the left and right atria in the heart. This opening is normal during fetal development and usually closes after birth. However, in a minority of people, it remains open after birth and this is known as a Patent Foramen Ovale, (PFO). This may cause a disruption of the heart's pressures which may need to be treated.

Following other tests, (ECG, Echocardiography), the Cardiologist will decide if a PFO closure procedure is necessary. This procedure involves putting an introducer sheath into the vein at the top of the right leg and inserting a narrow catheter through this. The Cardiologist will steer a small closure device towards the PFO in the heart through this catheter.

This procedure is done under local anaesthetic and the patient is given sedation at the commencement. The patient does not feel the closure device or catheter in the heart.

The preparation is similar to that for Coronary Angiography.

An overnight stay in hospital is required after a PFO Closure procedure.