Are there alternative investigations or treatments

Your medical team should have discussed any alternative treatments or investigations that may be applicable in your case. If you are not aware of your alternative treatment options, or have decided not to have this procedure done, then please contact cardiac administration team on 0300 019 4723, 08.30-16.00hrs (answer machine outside office hours) and ask to speak to a Pre Assessment Cardiac Nurse Specialist who will inform your Cardiologist.

University Hospitals Dorset NHS Charity
Registered Charity No.1057366

Facilities and equipment within cardiology at UHD have been kindly supported by donations (charity no. 1057366) which are greatly needed and appreciated. If you would like to contribute please make cheques payable to 'UHD NHS Charity' and write 'Heart Fund' on the back of the cheque.

Cheques should be sent to:

UHD NHS Charity Office, Royal Bournemouth Hospital
Castle Lane East BH7 7DW

To read this leaflet in a different language, please visit our website: **www.uhd.nhs.uk/visit/patient-information-leaflets** and use the language and accessibility function available along the top of the site.

To ask for this leaflet in larger print, please contact the patient experience team on **0300 019 8499** or email **uhd.patientexperienceteam@nhs.net**.

The Royal Bournemouth Hospital,
Castle Lane East, Bournemouth, Dorset, BH7 7DW

Author: **Dr Jonathan Hinton**
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t: 01202 303626 w: www.uhd.nhs.uk
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Cardiac Catheterisation and Cardiac Angioplasty

Cardiac Intervention Unit

This booklet is to help you understand about your Cardiac Catheterisation (often called a Coronary Angiogram) and Cardiac Angioplasty

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Some of our hospital services are moving.
Visit **www.uhd.nhs.uk/future** to find out more.

Important points to remember prior to your hospital admission

- Please read this information booklet carefully. Prior to your cardiac catheter you will be given a pre-assessment appointment to discuss the procedure with a Cardiac Nurse Specialist.
- If you take Warfarin, you must:

  Stop taking the Warfarin 5 days before your cardiac catheter or 10 days before an angioplasty.

  Unless:

  - **Your hospital doctor or nurse specialist at pre-clerking has told you to keep taking it OR**
  - **You have a metal valve replacement**
- If you are diabetic you may be asked to stop Metformin on the day of your procedure and for 48 hours after the procedure depending on kidney function. The nurse specialist will advise you.
- Please bring all tablets/medication you are taking to the hospital with you.
- Your admission text/email will give you details of where you will be admitted on the day.
- You may wish to leave out your 'water tablets' (known as diuretics) on the day of the test and take them after you have had your cardiac catheter.
- Instructions concerning when to eat and drink before your procedure can be found in your appointment letter/text.

- X ray screening is used during angiography and angioplasty. This means that patients are exposed to ionizing radiation. Such exposure carries a very small risk in the long term of tissue damage. More information is available from your Consultant/ team.
- You may get palpitations during angiogram, your heart is monitored and if an abnormality is detected it will be treated as necessary.
- Very rarely the cardiac angiogram may cause a heart attack or stroke, but this is only a 1 in 2,000 risk.
- There may be damage to the artery at the top of the leg, resulting in a large bruise and possible bleeding. This is called a false femoral aneurysm. Applying extra pressure to the artery can treat this, but 1 in 500 patients who have a false femoral aneurysm may need to have a small operation to repair this.

Complications following Angioplasty

- Approximately 1 in 555 people* having an elective angioplasty and stent will die whilst in hospital because of the procedure. Your doctor will not proceed with angioplasty and stenting unless the benefits that can be gained from performing this procedure far outweigh the sum of the risks involved.
- Heart attack or stroke that do not result in death, occurs in approximately 1 in 1000 patients* having an angioplasty or stent.
- If an emergency situation occurs during the procedure, we will do whatever is possible to treat it. Although extremely rare, approximately 1 in 2000 patients* who have elective angioplasty, may require urgent action such as an emergency bypass operation.
- There is a small risk for any stent to clot and obstruct. To avoid this we give you Aspirin and another tablet called Clopidogrel (or occasionally an alternative tablet called Ticagrelor or Prasugrel).

Cardiac Catheterisation and Coronary Angioplasty

What is a Cardiac Catheter (Angiogram)?

A cardiac angiogram is a diagnostic test that uses x-rays and contrast (dye) to look at the coronary arteries.

The heart specialist will be able to tell if there are any significant areas of narrowing within your coronary arteries. This test will show how severe, and exactly where, the narrowing's are. However, the angiogram alone may not be fully diagnostic and other tests may still be required.

Where is the Cardiac Catheter carried out?

- The heart doctor (Consultant or Registrar under supervision) who will perform the test.
- Two nurses, one to stay with you and one, to help the doctor.
- A Radiographer. This is the person who takes the x-ray films.
- A Cardiac Technician will monitor your heart while you have the test.

If you have had an angioplasty, you **may** need to stay in hospital overnight. The doctor will tell you when you can go home.

Going home

- You cannot drive yourself home. You must have an adult collect you from the ward.
- We do not advise using public transport.
- You should not drive for the next 48 hours if you have had an angiogram.
- If you have had an angioplasty procedure, The DVLA state that you must not drive for one week. You will not be insured during this time.
- You must have an adult stay with you for the first night, just in case your wound bleeds or you begin to feel unwell.
- You must have two days off work if you have had an angiogram.
- You will need one week off work following an angioplasty.Please check with your Cardiologist at the hospital.

You will be given instructions by the nurse about what you can do, depending whether your leg, wrist or arm was used before you leave the ward.

Metformin must be restarted **48 hours after** the procedure, unless the doctor has told you otherwise.

If you have stopped taking Warfarin prior to an angiogram, this may be restarted the evening of your procedure, unless the doctor has told you otherwise.

If you have stopped Warfarin prior to an angioplasty, your doctor will inform you if this is to be restarted.

If you are on a DOAC (blood thinners Apixaban, Rivaroxaban, Edoxaban and Dagigatran) you're Consultant or a member of their team will advise you if this needs to be stopped prior to your procedure and when to restart if applicable.

You should continue to take all your other medications as normal, unless the doctor has told you otherwise.

If you have any worries, you should first contact your own GP.

Cardiac Catheterisation and Coronary Angioplasty

Our contact numbers

For wound complications, Monday-Friday 8am-5pm, telephone the Advance Practitioner service on **0300 019 6284**.

(You may be asked to leave a message on an answer phone which is checked frequently for messages and your call will be returned as soon as possible).

Out of these hours (evenings/nights/weekends) Telephone Ward 23 on: **0300 019 4085/0300 019 4516**

The above numbers should be used for wound complications. For any other concerns please contact your GP or in the event of an emergency please dial **999** and ask for an ambulance.

Other useful numbers:

Out of Hours Service: **111**

Complications following Cardiac Catheterisation

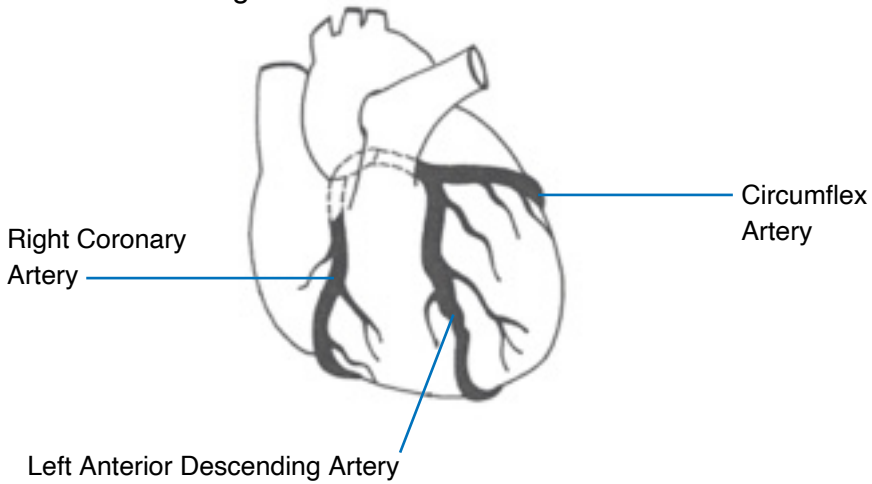
- Commonly bruising and very occasionally bleeding or a small blister may occur at the wound site if the wrist was used. This usually settles after a short while, but we would advise this it reviewed by a Cardiology Advanced Practitioner on the Cardiac Intervention Unit, who are familiar with this complication.
- If the wrist is used there is a small risk of radial artery occlusion, which can restrict the blood flow to the hand. This is not usually a problem as the hand is also supplied with blood from the ulnar artery.
- A few people can have an allergic reaction to the dye, but the team will closely observe you during and after the test to see if you are reacting to the dye. We have antidotes and treatments for dye allergy.
- In some people the colorless dye used during the angiography/ angioplasty can cause damage to the kidneys. If your kidney function is normal this is highly unlikely. If your kidney function is not normal, we will take special measures to protect your kidneys, but despite these measures kidney damage can still occur.

Contents

The heart

The heart has four chambers, two on the right side and two on the left side. The right side of the heart pumps the blood to the lungs to get oxygen, the blood then goes to the left side of the heart to be pumped around the body.

The heart gets its own blood supply from the coronary arteries. These are the right and left coronary arteries. The left coronary artery splits into two branches that are called the circumflex and anterior descending.



What is an Angioplasty?

The doctor performing your angiogram may find that there is a narrow area within one or more of your coronary arteries (arteries which supply the heart muscle), which would benefit from being opened. In most patients this is performed immediately after the angiogram unless further investigations or discussion is required. This procedure is called an angioplasty and patients are pre-prepared to have their treatment performed on the same day.

The angioplasty procedure will be performed at the Royal Bournemouth Hospital. If you do not wish to have the procedure done at the Royal Bournemouth Hospital it could be arranged elsewhere (in accordance with patient choice).

The procedure is performed in the same type of room as the Cardiac Catheter and takes approximately one hour (but this can vary significantly depending on the complexity of the narrowing that needs to be treated). The difference between an angiogram and angioplasty is that a wire is passed through the catheter. The wire is moved to the area of the artery that is narrowed and a balloon is passed over the wire and positioned at the point of narrowing. The balloon is then inflated and deflated. It is very common to feel chest discomfort when the balloon is being inflated. The balloon is then deflated and removed.

After opening up the artery the doctor will then implant a stent (a metal scaffold)to hold the artery open or a drug coated balloon, which leaves the same drug as the stent has but without the metal scaffold. Both these strategies allow the artery to heal. Many of these procedures will be guided by intracoronary imaging (IVUS/OCT) which provides additional information from inside the heart artery that helps guide the medical team.
Occasionally it is necessary to use additional equipment to help prepare the artery for stenting such as intravascular lithotripsy (this delivers ultrasonic shockwaves to break up calcium, it is extremely safe but often gives a clicking sensation in your mouth), rotational/orbital/laser atherectomy (devices to help break up calcium in the heart arteries).

Sometimes a special wire (pressure wire) is used to measure the blood flow in heart arteries to assess whether you will benefit from having the artery fixed with stents or balloons. These wires are also sometimes used to assess for micro vascular dysfunction (flow limitation in the small blood vessels that supply blood to the heart that cannot be seen during an angiogram).

After discharge from hospital your doctor will prescribe a drug called Clopidogrel (or occasionally Prasugrel or Ticagrelor). These tablets are given to you before the procedure and you should follow your doctor's instruction regarding length of this treatment.

You should only be taking one of these medications (Clopidogrel / Ticagrelor / Prasugrel) at any one time.

There is a serious risk of clots forming in the stent (stent thrombosis) if either Aspirin or Clopidogrel are stopped early following stenting.

Therefore, you must take both drugs for the prescribed course.

You will be given a Clopidogrel card on discharge, which will specify exactly how long you would need to continue with the drug. Aspirin will have been given to you prior to your procedure and will be for the rest of your life.

Before coming into hospital

For both angiogram and angioplasty patients you do not need to shave your wrist or groin before coming into hospital.

Please shower on the morning of your admission.

Please take all your medications as normal.
If you are diabetic you may be advised to stop your Metformin on the day of your procedure and for 48 hours after the procedure.

If you have had a metal heart valve replacement you will be given full instructions about when to take your Warfarin, and any other necessary medications, at your pre-assessment appointment.

If you are on DOAC your consultant or member of their team will advise if the medication needs to be stopped and when to restart the medication.

Please drink plenty of fluid (avoiding alcohol) the day before coming into hospital. Further guidance regarding eating and drinking pre and post procedure will be included in your booking letter and as part of your pre assessment in accordance with the Trust's Conscious Sedation in Adult Cardiac Catheter Lab Policy.

After the Cardiac Catheter (Angiogram) or Angioplasty

If your wrist is used, a small band with an inflated disc will be placed over the very small hole in your wrist. After a period of bed rest the disc will be deflated at regular intervals (over 1-2 hours) by the ward nurse until it is safe to remove it.
If the top of your leg was used the very small hole can be closed in two ways:

- Commonly the doctor will seal the small hole with an Angioseal. This is a little collagen plug put in the artery to close it. The nurse will explain this in more detail if you have this device.
- Occasionally a member of clinical staff may press over the small hole in your leg for 10 tell you what minutes.

At this time, the doctor may the initial results of the test are, before you go back to the ward.

On the ward

When you get back to the ward, your blood pressure, pulse and wound will be checked frequently by the nurse.

You can eat and drink as normal. A sandwich and drink will be available on your return to the ward. If the doctor used your wrist, you should try not to use your arm for three hours after the test. The nursing staff will get you up and moving about as soon as possible after your initial recovery and the nurse will let you know when you can go home.

If the doctor used your leg, you will lie flat afterwards for up to 1 hour with an angiogram and 2-4 hours with an angioplasty and then you can sit up in bed. The wound may bleed a little bit afterwards, so you will have to stay in the bed until the nurse says you can gently walk around the ward. A small plaster will then be placed on your wound.

How is the Cardiac Catheter (Angiogram) performed?

This test normally takes about 30 to 40 minutes. You will be awake during the test.

You will lie as flat as you are able to on the x-ray table, with a pillow. It is normal practice for you to be offered sedation at this point. To gain access to your coronary arteries the doctor will need to make a small hole in either the radial artery (top of wrist) or the femoral artery (top of leg). The skin area will first be cleaned with an antiseptic, and the doctor will then inject a local anesthetic to this area. This may sting a little to begin with but the area will then go numb.

A small tube called a catheter is then put into the artery and guided towards your heart using x-rays. Contrast is then passed down this catheter.

The x-ray machine will move around you to take pictures from different angles.

Occasionally a larger quantity of contrast is given in one go and this can cause a hot flushing sensation as if you have passed water. You will not have done. These are only feelings that last a few seconds.

Sometimes a vein is used to obtain pressure measurements from the heart and this will involve a small hole in the vein just like the artery.

If you have angina, you may get some chest pain during your test. You must let the nurse or doctor know immediately if you feel any chest pain.