

## Angioplasty and arterial stent insertion

### Introduction

This leaflet tells you about the procedure known as angioplasty, explains what is involved and what the possible risks are. It is not meant to replace informed discussion between you and your doctor, but can act as a starting point for such a discussion.

If you are having the angioplasty as a pre-planned procedure you should have plenty of time to discuss the situation with your consultant and the interventional radiologist who will be doing the angioplasty and perhaps your own GP. If you need the angioplasty as an emergency there may be less time for discussion, but you should have had sufficient explanation before you sign the consent form.

### What is an angioplasty and stent insertion?

An angioplasty is a way of relieving a blockage or narrowing in an artery, without having an operation. A fine plastic tube, called a catheter, is inserted through the blockage in an artery and a special balloon on the catheter is then inflated to open up the blockage and allow more blood to flow through it. The balloon is then removed. Sometimes a “stent” (a small metal mesh tube) is used in addition to angioplasty. The stent is inserted into the artery to hold it open after it has been dilated with the balloon. This stent will remain in place permanently.

### Why do I need an angioplasty?

Your doctors know there is a problem with part of your circulation. You may already have had a CT, ultrasound or MRI scan, which has shown a blockage in an artery. It has been decided that an angioplasty is the best way of treating this narrowing/blockage.

### Who has made the decision?

The doctors in charge of your case and the interventional radiologist doing the angioplasty will have discussed the situation and feel that this is the next step. However, you will also have the opportunity for your opinion to be taken into account and if, after discussion with your doctors you do not want the procedure carried out, you can decide against it.

### Who will be doing the angioplasty?

A specially trained doctor called an interventional radiologist. Interventional radiologists have special expertise in using X-ray equipment, catheters, guide wires, balloons and stents and also in interpreting the images produced. They need to look at these images while carrying out the procedure.

### Where will the procedure take place?

In the X-ray Department in the Angiography Suite where there is a special X-ray machine for these procedures.

### How do I prepare for an angioplasty?

You will be given an appointment to attend a pre-procedure assessment. During the assessment the nurse will ask you questions and carry out some tests. All the preparation details will be discussed with you and you will be able to ask any questions of your own during this time. Angioplasty can be carried out as a day case or an inpatient (stay in overnight) procedure – this will be decided well in advance of the procedure according to the procedure, your medical condition and home circumstances.

### What happens on the day of the angioplasty?

Do not to eat anything for 6 hours before the procedure, although you will be able to drink clear fluids (water, tea or coffee without milk) up to 2 hour before.

If you are a day case will be required to stay for approximately 4 hours following the procedure and will need to be accompanied home with a responsible adult who will need to stay with you for 24 hours. You must not drive yourself.

The interventional radiologist will talk to you about the procedure and ask you to sign a consent form. This is an opportunity to ask any outstanding questions you may have. They will also ask your permission to enter the data from your procedure into a national registry to ensure we deliver a high quality service.

You will be asked to put on a hospital gown. The nurse will check your blood pressure again and confirm your details taken during the pre-assessment. A cannula (a plastic device) will be inserted into your arm so that we can administer sedation and/or painkillers if necessary. Once in place this will not cause any pain..

### What actually happens during an angioplasty?

You will lie on the X-ray table, generally flat on your back. You will have monitors attached to your chest and finger, as well as a blood pressure cuff. If you receive sedation and/or painkillers you will be given oxygen through small tubes in your nose.

The interventional radiologist will keep everything as sterile as possible and will wear a theatre gown and operating gloves. The skin near the point of insertion, often the groin, will be cleaned with antiseptic and then most of the rest of your body covered with a sterile theatre drape.

The skin and deeper tissues over the artery will be anaesthetised with local anaesthetic and then a needle will be inserted into the artery. Once the radiologist is satisfied that this is correctly positioned, a guide-wire is placed through the needle and into the artery. Then the needle is withdrawn allowing the fine plastic tube (catheter) to be placed over the wire and into the artery.

The radiologist will use the x-ray equipment to make sure the catheter and the wire are moved into the correct position, very close to the blockage in the artery. Then the wire and

the catheter will be moved so that they pass through the narrowing or blockage. The catheter is replaced by a special balloon which is inflated inside to blockage. This may need to be done several times in order for the narrowed area to open up sufficiently to improve the blood flow. Occasionally, despite inflating the balloon several times, the narrowing is so severe that it does not open up sufficiently and it may be necessary to place a stent across the narrowing to hold it open.

The interventional radiologist will check progress by injecting contrast medium (a dye visible on X-ray) down the catheter to show how much the narrowed artery has opened up. When he is satisfied that a good result has been achieved, the balloon is removed. The radiologist will then either insert a closure device (to seal the hole in artery at the groin) or will press firmly on the skin entry point for several minutes to prevent bleeding.

### Will it hurt?

When the local anaesthetic is injected it will sting to start with, but this soon wears off and the skin and deeper tissues should then feel numb. After this the procedure should not be painful. There will be a nurse monitoring your progress throughout the procedure. If the procedure does become uncomfortable for you, then they will be able to arrange for you to have some painkillers through the cannula in your arm.

As the contrast medium passes around your body you may get a warm feeling, which some people can find a little unpleasant. However, this soon passes off and should not concern you.

### How long will it take?

Every patient's situation is different and it is not always easy to predict how complex or how straightforward the procedure will be. Some angioplasties take about half an hour, while others may be more involved and take rather longer, sometimes well over an hour.

### What happens afterwards?

You will be taken to the recovery room on a trolley. Nurses in there will carry out routine monitoring observations, such as your pulse and blood pressure to make sure there are no problems. They will also look at the skin entry site to make sure there is no bleeding from it. You will generally stay in bed for a few hours until you have fully recovered. If you are an inpatient you will be taken from the X-ray recovery unit back to the ward. If you are a day case you will stay for approximately 4 hours in X-ray recovery unit and will need to be accompanied home with a responsible adult who will need to stay with you for 24 hours.

### Are there any risks or complications?

Angioplasty is a very safe procedure, but there are some risks and complication that may arise.

- There may occasionally be a small bruise, called a haematoma, around the site where the needle has been inserted and this is quite normal. If this becomes a large bruise

then there is the risk of it getting infected and this would require treatment with antibiotics.

- Very rarely, some damage can be caused to the artery by the catheter or the balloon and this may need to be treated by surgery or another radiological procedure.
- Sometimes, it is not possible to manoeuvre the wire or balloon through the blockage.
- If the angioplasty is unsuccessful then it might be necessary to have surgery to relieve the blockage.
- Very rarely, the balloon or catheter may worsen the blood flow down by damaging the artery and causing some of the material causing the blockage to fall off and block the artery further downstream. This may also necessitate another radiological or surgical procedure. It is possible that this could result in loss of the limb – but this is extremely rare.
- Very occasionally, the artery ruptures during ballooning which is very serious but it can usually be treated using a special stent or occasionally surgery.

Despite these possible complications the procedure is normally very safe and in the majority of cases carried out with no significant side effect.

### Finally...

Some of your questions should have been answered by this leaflet, but remember that this is only a starting point for discussion about your treatment with the doctors looking after you.

Make sure you are satisfied that you have received enough information about the procedure before you sign the consent form.

Angioplasty is considered a very safe procedure, designed to improve your medical condition and save you having a larger operation. There are some slight risks and possible complications involved and although it is difficult to say exactly how often these occur, they are generally minor and do not happen very often.

### Further information

The Royal College of Radiologists has a patient information section that includes a leaflet on angioplasty. [www.rcr.ac.uk](http://www.rcr.ac.uk)

For further information about the Trust, visit our website [www.royalberkshire.nhs.uk](http://www.royalberkshire.nhs.uk)

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