

Angiogram and angioplasty (including stent insertion)

Reference Number: ULHT-LFT-1672 v3

Issued: August 2026

Review Date: August 2028

Aim of the patient information

This patient information tells you about having an angiogram, angioplasty and stent insertion. It explains what is involved and what the possible risks are. It is not meant to replace discussions between you and your doctor but can act as a starting point. If you have any questions about the procedure, please ask the doctor who has referred you or the Interventional Radiology department.

What is an angiogram?

An angiogram is a special diagnostic X-ray examination designed to show the arteries in your body relevant to your problem. A dye (contrast agent), which usually contains iodine, is injected directly into the artery through a fine tube (catheter). The dye fills the arteries and makes them visible on X-ray.

What is an angioplasty?

An angioplasty is a way of treating a narrowing or blockage in an artery without having an operation. Whether this is possible or not usually depends on the findings of the initial angiogram.

Following the initial angiogram a thin plastic tube (catheter) is inserted into the artery and through the narrowing/blockage. A special balloon on the end of the catheter is placed across the narrowing or blockage. This balloon is inflated from outside the body momentarily and then deflated to improve the flow through the blood vessel.

If blood flow is improved unfortunately, we cannot guarantee how long this will last. It is important that you follow your referring doctor's recommendations regarding lifestyle change e.g. stop smoking, medication and exercise. These increase the procedure's success rate.

What is a stent?

A stent is a special device made of metal mesh that is placed across a narrowing or blockage and remains in the artery to keep it open. They can only be used in certain arteries.

Why do you need an angiogram?

Your doctor needs detailed images of the arteries to determine the most appropriate treatment for you. Angiograms are most commonly performed to investigate blockages, areas of bleeding and to depict the blood supply to abnormal areas.

Why do you need an angioplasty (+/- stent)?

Your doctor has identified that there is a narrowing or blockage in one of your arteries that is causing you a problem. If the arteries in your legs are affected, this may be causing pain in your calf or thigh.

Are there any risks?

Angiograms and angioplasties (+/- stents) are safe procedures, but as with any medical procedure there are some risks and complications that can arise.

A small infection can occur at the puncture site which can usually be treated with antibiotics.

A small bruise (haematoma) around the puncture site can occur, but this is normal. The bruise might be sore for a few days but will disappear in a few weeks. Rarely a large bruise may develop and require a small operation to drain it. Occasionally, a tender pulsating swelling, called a false aneurysm, may develop over a few days due to ongoing leakage from the vessel into the surrounding tissue. This can usually be treated by an injection of a blood-clotting agent under ultrasound and/or X-ray guidance.

Very rarely, arteries can be damaged (ruptured) by the catheter. Or some of the material blocking the artery can be displaced and cause a blockage in another artery. This may require a stay in hospital, medication, a small operation and/or another procedure.

In extremely rare cases, where a blockage does not respond to treatment, in the lower limb, there is an extremely rare chance amputation could be necessary.

The dye (contrast agent) used during the procedure is very safe but occasionally can cause damage to the kidneys. This occurs mainly in patients whose kidney function is poor already and this will be identified on the blood tests that are performed before the procedure. Allergic reactions to the dye or other medications are also possible but are very rarely serious.

Unfortunately, it is not always possible to perform an angioplasty (stent). It depends on the findings of the initial angiogram. Sometimes the blockage is too severe to attempt an angioplasty, or the catheter cannot pass through the blockage.

During the procedure you will receive a dose of radiation as a result of the X-rays used. There is a possible risk of cancer induction from exposure to X-rays. However, we are constantly exposed to radiation from the air we breathe, the food we eat, the

ground and from space. This is known as background radiation and has a cancer risk of around 1 in 10,000 per year. Having the procedure could result in you receiving an additional dose of radiation equivalent to a few years of background radiation. The associated risk of possible cancer induction from receiving a dose of radiation equivalent to a few years of background radiation is considered to be low. Your doctor has agreed that this procedure is the best examination for you compared with others and that the benefit of having it outweighs the risks from radiation.

Are you required to make any special preparations?

Angiograms and angioplasties are usually carried out as day case procedures under local anaesthetic. You will be asked to attend the ward early in the morning so all required paperwork can be completed. You will also be asked not to eat for four hours before the procedure, although you may take small sips of water up to an hour prior to the procedure.

You may be sent a blood form and asked to arrange a blood test prior to the procedure to check your bloods are within safe limits to have the procedure.

If you are taking anti coagulation or anti platelet medication, such as warfarin, you will be given instructions detailing if this medication needs to be stopped and for how long. If you have not been given this information, please contact the Interventional Radiology department. Unless advised otherwise please continue to take all other medication e.g. for blood pressure.

If you have previously had a reaction to the dye (contrast agent) or a local anaesthesia please contact the Interventional Radiology department.

If you are a diabetic, you may be given instructions detailing if the medication you take needs to be stopped/altered following the procedure and if you require additional blood tests.

You should have someone to drive you home following the procedure. Someone should be at home with you for 24 hours. If you do not, please let the Interventional Radiology department know.

Who will you see?

A specially trained team led by an interventional radiologist or vascular surgeon who have special expertise in reading the images and using imaging to guide catheters and wires to aid diagnosis and treatment.

Where will the procedure take place?

In the Interventional suite, which is located within the X-ray department and is similar to an operating theatre.

What happens during an angiogram?

Before the procedure, a member of the interventional team will explain the procedure and ask you to sign a consent form. Please feel free to ask any questions that you may have and remember that even at this stage, you can decide against going ahead with the procedure if you so wish.

On the ward you will be asked to get undressed and put on a hospital gown. A small cannula (thin tube) will be placed into a vein in your arm in case you need any medication.

You will be asked to lie flat on your back on the X-ray table. The X-ray machine will be positioned above you. You will have monitoring devices attached to your arm, chest and finger.

Angiograms and angioplasties are performed under sterile conditions and the interventional team members performing your procedure will wear sterile gowns and gloves.

Your skin at the region of interest, e.g. groin, will be cleaned with a cold antiseptic and you will be covered with sterile drapes. The skin and deeper tissues will be numbed with local anaesthetic. A small incision will be made. A needle, a wire and finally a catheter (fine plastic tube) will be inserted into the artery and guided to the correct position to obtain the images required for the angiogram.

For angioplasties, once the narrowing or blockage has been identified on the angiogram, a balloon is inflated to open up the artery. Occasionally, the interventional radiologist will decide to place a stent. This is placed in exactly the same way as the balloon.

Once the doctor is satisfied with the images, the catheter will be removed. Firm pressure will be applied to the puncture, for about ten minutes, to prevent any bleeding. Sometimes a special device may be used to close the hole in the artery.

Will it hurt?

It may sting a little when the local anaesthetic is injected. You may feel a warm sensation for a few seconds when the dye is injected and feel like you are passing urine. An angioplasty is not painful although you may feel a little discomfort when the balloon or stent is being inflated but this passes when the balloon is deflated.

How long will it take?

Every patient is different and it is not always easy to predict, however, expect to be in the interventional suite for 1 to 2 hours.

What happens afterwards?

You will be taken back to your ward. Nursing staff will carry out routine observations. You will generally be required to stay in bed, initially lying flat (usually for a maximum of 4 hours). If you have an issue lying flat, please contact the Interventional Radiology department. After which you will be allowed to sit up, then to walk around the ward, until you have recovered and are ready to go home, usually 4 to 6 hours post procedure. You will be informed following the procedure when dressings should be removed and when normal daily activities should recommence.

If you have any concerns after discharge; for non-urgent issues please contact your GP or 111, for urgent issues please come to A&E.

Finally, some of your questions should have been answered by this patient information 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.

Interventional Radiology

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