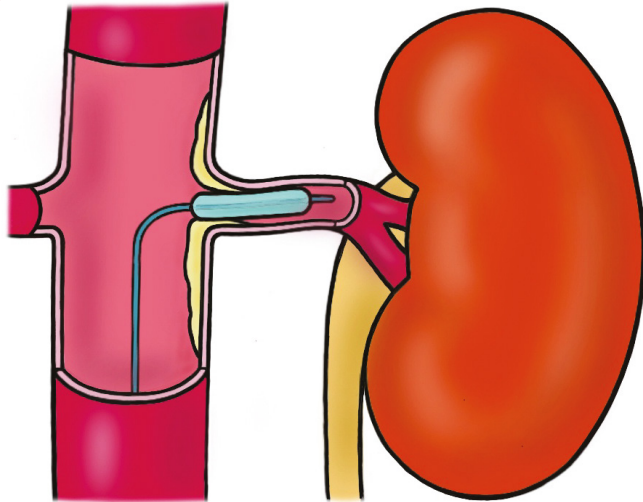


Renal Artery Angioplasty and Stenting

Information for patients



The aim of this information leaflet is to explain the process of stretching the narrowing in your artery to the kidney (renal artery), by angioplasty and or stenting.

What is renal artery stenosis?

Narrowing or blockage of the blood vessel carrying blood into your kidneys is called renal artery stenosis. This is usually caused by the hardening of your blood vessels. The narrowing may be mild to severe, or rarely complete blockage.

When a kidney receives blood at a good blood pressure it can clean the blood, forming urine. When the pressure drops due to a narrowing in the blood vessel, the kidney function reduces, leading to kidney failure. The kidneys react by producing chemicals that in turn increase blood pressure. Stretching the artery improves blood flow to the kidneys and may improve high blood pressure and kidney function.

What is renal artery angioplasty?

The stretching of the narrowing in the renal artery using a small balloon is called renal artery angioplasty. However, the narrowing usually bounces back straight away or within a few months so it is not considered the ideal method in hardened vessels. It is useful in soft narrowing.

What is renal artery stenting?

To open a narrowing and keep it open for a longer time, a stent or metal scaffold is inserted. In hardened vessels, this

is often the first choice. The metal scaffold or stent comes loaded on a balloon so both the stretching and stenting are done in one step. Occasionally a further stretch may be required after the stent is in place.

Where is it done?

The procedure is usually done in the X-ray department by a vascular interventional radiologist (a doctor who uses X-rays to see what he or she is doing inside a blood vessel). If you are referred by a cardiologist, the procedure will take place in the Radiology Angio theatre, B Floor, Jubilee Wing at the Leeds General Infirmary (LGI). If you are referred by a renal physician or a renal transplant surgeon, then it will take place in Radiology Angio theatre, ground floor, Lincoln Wing, St James's Hospital (SJUH).

Will I be seen in another clinic?

Yes, the vascular interventional radiologists will see you in their radiology clinic. They will show you your MRI or CT scan and explain the procedure and its complications. This will help you understand the process and allows you to ask any questions.

What do I need to do beforehand?

If you are on blood-thinning medication, such as warfarin, you may be asked to stop a few days before and take alternative injections if required. It is important to keep yourself well hydrated and take all your medications as normal on the morning of the procedure. Inform the staff of any allergies that you may have.

Do I need to stay in the hospital?

While the procedure is performed under local anaesthetic, due to risks involved in the procedure and changes that can happen in your circulation and kidney function following the procedure, it is recommended you stay in hospital overnight.

How is it done?

You will be seen and your consent taken for the procedure in Angio theatre. At this time the interventional radiologists may decide on the entry point for the procedure, which can be in the groin or the arm. They may examine your left wrist and elbow if they are planning to approach from the arm. The arm approach gives better entry into the renal artery if it is angled and allows you to sit up straight away.

You will be asked to lie on your back and the skin over your groin or arm will be cleaned with antiseptic liquid and sheets placed around the area to keep everything clean. A local anaesthetic is then injected into your skin. This will sting like a bee sting at first. A needle is used to puncture the blood vessel and then a thin plastic tube is inserted into your artery. X-ray dye is injected through the tube to obtain pictures of the blood vessel. If your kidney function is poor, carbon dioxide gas instead of x ray dye is used to get the pictures. While the gas is safe, it can make you feel sick temporarily. Your blood will also be mildly thinned to reduce clot formation. The tube is guided through the narrow section of your artery and replaced with another tube fitted with a tiny balloon or balloon with a stent, which can be blown up to stretch the narrowing.

The tube with a balloon is then removed leaving the stent in place. To seal the hole in your groin or arm, and to stop the bleeding from the artery, someone will press on your skin over the artery for 10-15 minutes.

Once recovered you will be taken to the ward where the staff will keep a close eye on the puncture site and monitor your blood pressure, urine output and fluid intake.

How long will it take?

The angioplasty and stent procedure usually takes about an hour.

Will it hurt?

At the start of the procedure, the local anaesthetic stings for a minute or two. You may feel a little discomfort in your back when the balloon is blown up, but this should not be unbearable and it will pass. If you feel persistent pain, please tell the radiologist or the other staff looking after you.

What are the immediate complications?

All procedures carry some risk and in the case of renal artery angioplasty or stenting it's important to know that while the procedure may not improve the blood pressure, it may worsen the kidney function.

The overall risk of a major complication is 1 in 20 and extremely rarely death has been reported. There is a list of complications on the next page.

The complications are:

1. Bleeding from the puncture site. Usually settles by manual pressure but rarely may require blood transfusion or further procedure.
2. Allergic reaction to x-ray dye. A severe reaction is uncommon nowadays but can still happen. It is therefore important to tell us about any allergies.
3. The contrast agent (x-ray dye) used in creating the X-ray images may affect the function of the kidneys.
4. Damage to the lining of the blood vessel due to passage of tubes and wires which may need a stent to fix it.
5. The layer (plaque) causing the narrowing may split during procedure sending small particles (embolisation) deeper into the kidney that may reduce kidney function.
6. Rarely, clotting of the newly inserted stent. This is may require clot bursting medication or further stent.
7. Rarely, the artery may rupture during the procedure requiring relining of the vessel from inside with a stent graft and/or needing major open surgery.
8. Rarely, loss of kidney due to loss of blood supply may occur if the renal artery is damaged beyond repair or if we are unable to clear the clot in it.
9. A small risk of stroke to the back of the brain if the entry site is in your arm.

What are the late complications?

Over the months and years, the stent may grow cells inside narrowing it. Usually, your original symptoms start returning. Your GP or hospital doctor may send you for further tests and scans to confirm.

How do I manage dressings, drains etc.?

There are no dressings or drains for you to manage. The hole in your groin or arm is very small, but you need to keep an eye on it for further bleeding.

What are the alternatives to renal angioplasty and stent insertion?

It may be possible to have an operation to repair the narrowed renal artery, but this is a much bigger procedure and could have other complications. You may be able to control blood pressure with tablets and treat renal failure with dialysis or transplant. You should discuss the above alternatives with your doctor.

Will I be on any medication afterwards?

Yes, we may prescribe tablets such as Aspirin to keep your blood thin depending on the procedure.

Who can I contact with any query:

If you have any questions about your procedure, you can contact any of the vascular interventional radiologists.

Please telephone the secretaries on: **0113 392 3504.**

Who should I contact if any problem arises afterwards?

Our specialist nurse will contact you within a month of the procedure to make sure there are no issues. If you have any problems you may contact them within the first month.

Tel: **0113 392 0390**.

If any problems arise after the first month, please contact your own GP. However, if you have any concerns you can also contact us on: **0113 392 3504**.



What did you think of your care?

Scan the QR code or visit bit.ly/nhsleedsfft

Your views matter

