

# Fistuloplasty in interventional radiology

The aim of this information sheet is to help answer some of the questions you may have about having a fistuloplasty. It explains the benefits, risks and alternatives of the procedure as well as what you can expect when you come to hospital.

## What is a fistuloplasty?

An AV (arteriovenous) fistula is the best means of access to the blood stream for long-term haemodialysis. It is created by connecting an artery to a vein, usually in your wrist or upper arm, and it helps to transfer blood into the dialysis machine and back again during haemodialysis.

Sometimes, even when you are very careful, your fistula may become infected, blocked or narrowed. If an infection occurs, you will need a course of antibiotics. If there is any blockage or narrowing in your fistula, you may need to have a fistuloplasty.

A fistuloplasty is performed by an interventional radiologist (a doctor who uses x-rays to diagnose and treat illnesses). He/she will use dye (contrast agent that shows up on x-rays) to help locate the blockage or narrowing in your fistula. The blockage is then relieved by stretching the blood vessels with a special balloon.

You will have the procedure under local anaesthetic (you will be awake but will feel no pain). You may also be offered sedation to help you relax. For more information about anaesthetic and sedation, please read our leaflet, **Having an anaesthetic**.

## Why should I have this procedure?

Over time, a fistula can age, and problems such as scarring or clots can decrease its function and the effectiveness of dialysis. Clots can cause blood to flow at a slower rate than the rate your doctor ordered or block a fistula completely. It is important to restore the recommended blood flow rate and treat clots that are forming at an early stage so that your fistula continues to work well and you get the amount of dialysis you need. If narrowing or blockage is left untreated, it may lead to your fistula failing.

## What are the risks?

Fistuloplasty is generally very safe but as with any procedure complications are possible. We have included the most common risks and complications on the next page of this information sheet. The risks vary for each patient and you will have a chance to discuss the risks specific to you before you sign a consent form.

- **Bruising:** There will be a bruise around the site where the needle has been inserted. This is normal and will usually go away on its own within a few weeks. There is a small chance that the bruise may become large and uncomfortable, but this does not happen very often.
- **Infection:** If a large bruise develops, there is a risk of it getting infected. This may then need treatment with antibiotics or surgery. This is a very rare complication.
- **Circulatory problems:** Sometimes damage can be caused to the artery or fistula by the catheter or balloon used to help with the blockage. For example:
  - Debris deposited in the artery wall, causing the narrowing/blockage of the artery, may be knocked off and cause further blockage/s of blood vessels further along.
  - Stretching the fistula or vein may accidentally cause a small tear (perforation). This may need to be treated by another procedure, such as placement of a covered stent or even an operation. If it is not possible to repair the damage within the vein, there is an extremely small and rare risk of amputation to the limb. If it is not possible to repair the damage within the fistula, it may no longer function properly so a dialysis line would be placed instead and a new fistula created in due course.
- Sometimes a problem with a fistula can be caused by a narrowing of a vein within your chest, which may need to be treated by stretching the vein. If injury occurs during this procedure, it may be very serious and even life-threatening. If this treatment is likely to be required, your doctor and radiologist will discuss this with you beforehand.
- **Allergic reaction:** Some patients may have an allergic reaction to the dye used to obtain the x-ray pictures. This reaction is usually minor, for example a skin rash, and normally clears up on its own. Rarely, it can be more serious and needs to be treated with steroids.
- **Treatment failure:** There is a small risk of failure of treatment in which case the doctor will discuss further surgical options with you.

Despite these possible complications, a fistuloplasty is normally very safe and carried out with no significant side effects at all.

## Are there any alternatives?

The main alternative to fistuloplasty is surgery to form a new fistula. However, as a fistula is often a preferred dialysis access route, it is worth preserving it as long as possible before creating a new one. It is especially important in patients on a long-term dialysis because there are limited blood vessels in the body that are suitable to form fistulas.

## How can I prepare for a fistuloplasty?

Unless you are already staying in hospital as an inpatient, you can come into hospital, have a fistuloplasty and go home on the same day. You will need to arrange for an adult to take you home by car or taxi and to stay with you overnight.

- You will need to fast, which means that you cannot eat or drink anything (except water) for six hours before the procedure. Continue to take your normal medicines (with sips of water if needed), unless you have been advised otherwise. You may drink water (not fizzy) up until two hours before the procedure.
- If you have **diabetes**, we recommend that you speak to your GP or diabetic nurse for advice on how to alter your treatment regimen. If you require **insulin** to control your diabetes, it may need to be adjusted according to your blood sugar levels.
- If you are taking any medicines containing **metformin**, you must stop taking them on the day of your fistuloplasty and for two days after the procedure.

- If you are taking any anticoagulants (such as **warfarin**), or any antiplatelets (for example **aspirin**), these may need to be stopped before the procedure. The doctor referring you should give you specific instructions about this. If they have not, please contact us for advice when you receive your appointment letter.

Please bring all of your medicines with you (any tablets/capsules, inhalers, sprays, liquids or patches), including anything prescribed by your GP or your hospital specialist, and anything you have bought yourself, such as herbal and homeopathic medicines.

## Giving my consent (permission)

We want to involve you in all decisions about your care and treatment. If you decide to go ahead, you will be asked to sign a consent form. This confirms that you agree to have the procedure and understand what it involves.

You should receive the leaflet, **Helping you decide: our consent policy**, which gives you more information. If you do not, please ask us for one.

## What happens before the procedure?

You will need to come to the Renal Day Unit (Patience Ward) at Guys' Hospital. A cannula (a thin tube) will be inserted into a vein in your arm and blood sample will be taken. You will be then transferred to the interventional radiology (IR) department. You will have a chance to ask the radiologist any questions that you have before you sign a consent form.

### Please tell the x-ray staff on arrival if you:

- are allergic to iodine, have any other allergies or suffer from asthma
- have previously reacted to the dye used for x-rays and CT scanning
- are or might be pregnant
- suffer from diabetes.

## What happens during a fistuloplasty?

You will be asked to lie flat on your back on an x-ray table. Monitoring equipment will be attached to you to measure your blood pressure and heart rate.

The interventional radiologist will usually start by looking at your fistula using an ultrasound machine. This is called a fistulogram and allows the radiologist to see the fistula more clearly. A small needle is placed in your fistula and dye (contrast agent) is injected. This dye provides an image (similar to a map) of the blood vessels that would otherwise be invisible on x-ray. The interventional radiologist interprets the images and locates the blockage or narrowing.

A special tube called a catheter is then passed through a blood vessel in your arm to the site of the blockage inside the fistula. The catheter has a small balloon at the tip. Once the catheter has reached the site of the narrowing or blockage, the balloon is inflated from outside the body and deflated several times. This will stretch the blood vessel and should relieve the blockage. Occasionally, a permanent stent may be used to open up the blockage if the balloon does not improve the fistula or if there is a complication related to the balloon expanding.

After the procedure, a stitch will be placed at the puncture site to help prevent bleeding. One of the dialysis nurses will remove the stitch next time you come for your dialysis. You do not usually need a dressing over the puncture site.

Fistuloplasty usually takes about one hour but you will need to stay in hospital for about three to four hours after the procedure for observation.

## **Will I feel any pain?**

Some patients get a warm feeling and a metallic taste when the dye is injected, and some patients may also feel sick. These feelings will only be temporary, usually lasting about one minute. Local anaesthetic will numb the area so you will not feel any pain during the procedure; this may sting before it starts to work. In addition, further pain relief may be given if you need it.

## **What happens after the fistuloplasty?**

You will be taken back to the Renal Day Unit where you will be observed closely to make sure that there is no significant bruising. Your blood pressure and pulse will be checked at regular intervals and a clip on your finger will measure the oxygen level in your blood. You may eat and drink as normal.

If you had your fistuloplasty as a day patient, the nurse will tell you when you can get up and move around, and when you can go home. You will need a responsible adult to take you home by car or taxi. We do not recommend that you use public transport.

## **When can I use my fistula?**

Your fistula should be ready for use immediately after the procedure.

## **If I am a day patient, what do I need to do after I go home?**

- You should rest for the remainder of the day and possibly for the next day, depending on your recovery. You can then resume your normal activities.
- You can eat and drink as normal.
- Take your usual pain relief, as prescribed or instructed on the packet, if you have any pain.
- Continue with your normal medicines as prescribed. If you usually take metformin, this should not be restarted until two days after the procedure.
- You can have a shower or bath the next day.

## **Is there anything I need to look out for at home?**

If you experience any of the symptoms listed below, please contact the interventional radiology (IR) department or if it is out of office hours, go to your local A&E:

- bleeding at the puncture site
- a lot of bruising and swelling
- a lot of pain at the puncture site that is not improved by your usual painkillers
- a change in the colour of your arm
- fever/chills
- pus, discharge or lump at the puncture site
- chest pain or finding it hard to breathe
- inability to feel the bruit (thrill or buzz) in your fistula arm.

## Contact us

If you have any questions or concerns, or if you need advice, please contact the interventional radiology (IR) department at Guy's Hospital on **020 7188 5525**, Monday to Friday, 9am to 5pm.

You can also contact your renal nurse specialist or doctor for advice. If you are worried about anything outside of normal opening hours, please:

- contact your own GP
- go to your nearest A&E department.

For more information leaflets on conditions, procedures, treatments and services offered at our hospitals, please visit [www.guysandstthomas.nhs.uk/leaflets](http://www.guysandstthomas.nhs.uk/leaflets)

### Pharmacy Medicines Helpline

If you have any questions or concerns about your medicines, please speak to the staff caring for you or call our helpline.

**t:** 020 7188 8748 9am to 5pm, Monday to Friday

### Patient Advice and Liaison Service (PALS)

To make comments or raise concerns about the Trust's services, please contact PALS. Ask a member of staff to direct you to the PALS office or:

**e:** 020 7188 8801 at St Thomas'      **t:** 020 7188 8803 at Guy's      **e:** [pals@gstt.nhs.uk](mailto:pals@gstt.nhs.uk)

### Language Support Services

If you need an interpreter or information about your care in a different language or format, please get in touch using the following contact details.

**t:** 020 7188 8815      **fax:** 020 7188 5953

### NHS Choices

Provides online information and guidance on all aspects of health and healthcare, to help you make choices about your health.

**w:** [www.nhs.uk](http://www.nhs.uk)

### Become a member of your local hospitals, and help shape our future

Membership is free and it is completely up to you how much you get involved. To become a member of our Foundation Trust, you need to be 18 years of age or over, live in Lambeth, Southwark, Lewisham, Wandsworth or Westminster or have been a patient at either hospital in the last five years. To join:

**t:** 0848 143 4017      **e:** [members@gstt.nhs.uk](mailto:members@gstt.nhs.uk)      **w:** [www.guysandstthomas.nhs.uk](http://www.guysandstthomas.nhs.uk)

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