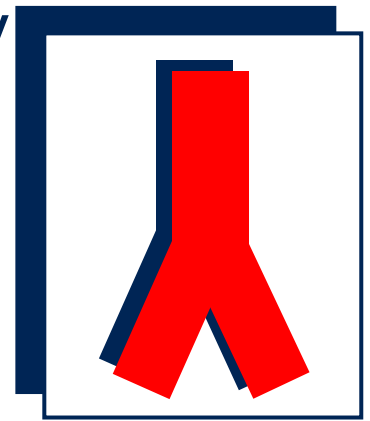


Will Butcher – Vascular Surgery

Patient information

Arterio venous fistulas

.....and some of the other operations on fistulas



An arteriovenous fistula is an artificial connection between an artery and a vein. This operation is usually undertaken to provide access for a renal patient so that dialysis may be undertaken without a catheter. In a small group the fistula is created because access for cannulas and taking blood is extremely challenging.

When we connect an artery and vein the vein becomes enlarged and it is much easier to get needles into the fistula, this is important for haemodialysis.

Haemodialysis is the type of dialysis where your blood is circulated through a machine and cleaned before being returned to you. For effective dialysis the machine must be able to draw blood and return it at a higher flow than a normal vein would manage.

Why a fistula?

There are a couple of different ways to do dialysis. A common way is for us to put a tube into a patient's tummy. When "water" is put into the tummy cavity the bad salts that are normally removed by the kidney move into the water and can be removed when the water is drained. This is peritoneal dialysis. Some patients who can not have a fistula or in whom the need for dialysis is too pressing to allow us to make a fistula in time may have a catheter placed into a large vein in the neck. The patient may be dialysed through this. Unfortunately these catheters can block and get infected. The advantage of a fistula is that because it is your own tissue it is resistant to infections.

What preparation is necessary?

Usually a few blood tests are required. A pre-operative duplex scan (jelly scan) of the arms is required before surgery. This is to work out exactly which vein and artery we will use.

Will I have to stay in hospital?

Depending on what time of day the operation finishes, you may be able to go home on the same day. Most patients will be able to go home on the

same day. Occasionally a patient is not well enough and will therefore stay over. Some people do not have enough support at home and are also kept over night

What sort of anaesthetic will I have?

Most people will have this operation under a some type of local anaesthetic. Either we will give you some injections around the site where the fistula will be made so I can operate in this area. More commonly we might use an ultrasound machine and inject the local anaesthetic around the nerves in the neck or shoulder area. This will numb the whole arm allowing the surgery to go ahead. Mostly we will also give you some sedation so it is important that you do not eat or drink for 6 hours before the operation. Some people who take regular medication should still take this before the surgery. If you have any doubts you should ask.

Before the operation

You will get a call detailing what is required, and we will explain what time and where to arrive. You will come along to the day surgery ward where you will be met by a member of the nursing staff. Later the surgeon and anaesthetist will see you.

The Surgeon will go through the operation one last time. If you have any questions you should bring them up now. He or she may ask you to sign a consent form if this has not been done, or at least confirm your consent. He or she will mark the veins on your leg(s). This is done so that we can be sure what needs to be removed once you are under an anaesthetic. It is important that you are comfortable that all the veins are marked. If the surgeon has missed some you should bring this up.

The Anaesthetist will ask some questions about your medical history just to check you are fit and to make any decisions regarding the anaesthetic that you will have.

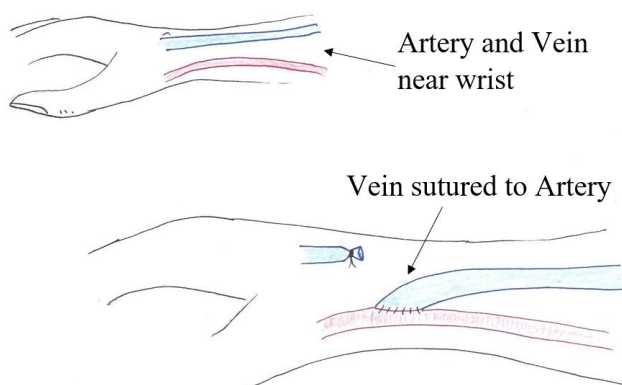
What will happen during the operation?

When your turn comes, you will be brought through to the operating room where the anaesthetist will put

a needle into your arm or hand and give you an anaesthetic. This can be quite a frightening time, but rest assured modern anaesthetics are very safe.

What exactly does the operation involve?

Before the surgery, I will usually use an ultrasound to confirm the vein and artery I will use. Then once the arm or the area is numb I will carefully dissect out the artery and vein and join them together with fine sutures. The operation takes between 30 and 40 minutes. Occasionally a patient does not have any suitable vein and I will use a man made graft to join the artery to a deep vein in the arm. This graft is then tunnelled into a loop on the forearm and we call this a loop graft. It is a more complicated process and takes a bit longer. Any wounds are stitched with dissolving sutures which will not need to be removed. Another group of patients will be having other types of fistula surgery to repair or restore a fistula that is causing problems, these also can take quite a bit longer than the normal surgery.



Other fistula operations:

Some things can go wrong with fistulas in time requiring other surgeries common problems and their solutions are:

The fistula is very big and lumpy – If this happens, I sometimes do an operation where I expose the whole fistula and narrow it down so it is smaller, we call this a plication. After this surgery you will not be able to use the fistula for a few weeks and we will have to make an alternative plan for dialysis.

The fistula is too deep to access – If this happens, I do an operation where I free up the fistula and make it more superficial (Superficialisation) and easier to access.

There is too much blood going through a fistula – This is bad because it may put too much stress on your

heart or “steal” blood from your hand. There are several operations to slow down or choke the fistula. The commonest one I use is called a distalisation, in this surgery a take a small bit of vein from your leg and use it to connect the fistula to an artery a bit further down the arm, this slows the fistula down.

You no longer need the fistula – Some patients have a successful transplant and want the fistula removed. After a year and with your kidney doctors permission this can be arranged.

After the surgery?

Immediately after the operation you will go through to the recovery area where the nursing team will check everything is OK and plans will be made to send you home or get you up to the ward where you will spend the night. The recovery nurse will make sure that any pain you have is under control before the next phase.

Pain killers - All patients are sent home with a selection of pain killers, which will be explained to you before you leave. You should plan to take 2 paracetamol tablets every 6 hours for the first few days. Stronger medication can then be used to top up if required. Most patients do not need much after the first two or three days are past

Dressings – The wound will have a sticky plastic dressing on it. This should remain in place for five days or so. Once the wound is dry, no dressing is needed.

Sutures: Most patients will have dissolving stitches that do not need to be removed.

Washing – It will not really be possible to wash the wound properly for the first few days. The rest of the arm can be washed. It is quite usual for there to be some residue of blood and the antiseptic solution left after the surgery.

Bruising and lumpiness – In some people the wound can bruise quite a lot especially the patients who have a loop graft or other surgery, this is quite normal and should settle down over 2 to 4 weeks.

Getting back to normal – This is relatively minor surgery and apart from some pain at the operation site you should get back to normal quite quickly. If you work, depending on what you do a few days or up to a week off may be required. IN time the fistula should not stop you getting on with all your normal activities. Driving, working exercising and washing will all be quite normal..

COMPLICATIONS

Unfortunately although surgery of this type is very safe, all surgery may have complications:

What WILL happen after the surgery?

Bruising - initially there may be a little bruising around the operation site, this will settle. There will also be some cuts on your arm as described either in the elbow crease or more usually near the wrist

Swelling – this is normal and will settle down with time.

What MIGHT Happen?

Blood transfusion - very rarely this may be necessary.

Nerve injury – Rarely a nerve running alongside one of the veins may be injured. If this does happen, it usually affects a sensory nerve and causes some numbness in the hand. It does not affect function, and mostly settles down within a few weeks.

Infection – You might get an infection in any of the wounds we make. The risk is rare. If any of the wounds become red and painful they may be infected. As long as this is mild it should settle down soon, if the redness persists or you start to feel unwell you should see your GP or come to hospital as you may need antibiotics.

Anaesthetic complication – no operation is completely safe and anaesthetic accidents can happen. The risk is of the order of 1 in 10,000.

What will happen to the fistula?

After a few hours the fistula should begin buzzing or vibrating, this is a good sign. It means there is a lot of blood passing through the fistula. You should monitor this daily. Light exercises will help the fistula to grow bigger – squeezing a squishy ball or a pair of socks for ten minutes twice a day is all that is needed. As time passes the fistula will get bigger and become useable. If you are on dialysis already they nurses will decide it is time to start using it and begin, when things are stable the catheter in your neck can be removed. It usually takes between 6 weeks and 3 months for the fistula to “mature”.

Are there any problems with a fistula?

Later on the fistula can grow and become quite noticeable in the arm in some people it can be quite lumpy, although a bit unsightly this is not really a problem. Injury to a fistula is rare but very occasionally does happen – bruising is usually the

only problem. Sometimes a fistula “steals” blood from the hand, this can cause pain and numbness in the hand. If this happens early in the fistula's life it will usually settle down, if it happens later we may need to do something to fix it or even sacrifice the fistula. Fistulas also periodically narrow down requiring an angioplasty to open them up again, this is when we put a small balloon into the fistula to stretch open the narrowed segment or stenosis. This is done under local anaesthetic as a day case.

Follow up

I will normally arrange to see you in the rooms about a week or two after your surgery. If you live far away or have to come in for dialysis this may not be necessary

More information

The first sensible step is to discuss your problem with your Kidney doctor or surgeon, they will be best positioned to explain what to expect.

If you need more information you can go to one of these vascular organisation's websites:

The Australia and New Zealand Society for Vascular Surgery.

www.anzsvs.org.au/patientinformation/

The Vascular Surgical Society for Great Britain and Ireland.

www.vascularsociety.org.uk/patients/