East Kent Hospitals University NHS Foundation Trust

Endovascular (EVAR) repair of the abdominal aortic aneurysm

Information for patients from the Vascular Surgery Service

This leaflet tells you about the operation known as **endovascular repair of abdominal aortic aneurysm (EVAR)**; it explains what is involved before, during and after your operation. It also explains what the possible risks are and how you can help to make your operation a success. We would particularly ask you to read the sections headed **Is the treatment safe?, What do I do if I feel unwell at home?,** and **What should I do before I come into hospital?**.

This leaflet is not meant to replace the information discussed between you and your doctor but can act as the starting point for such a discussion or as a useful reminder of the key points.

What is an aneurysm?

An aneurysm is a weakened artery that has stretched and ballooned out (see figure 1). This has occurred in the main artery called the aorta.

The wall of the artery becomes thinned by the loss of elastic tissue and the artery expands making it likely to burst (ruptured aneurysm). Rupture is commonly fatal so an operation to repair the aneurysm before it bursts is normally recommended for patients fit enough for the surgery.

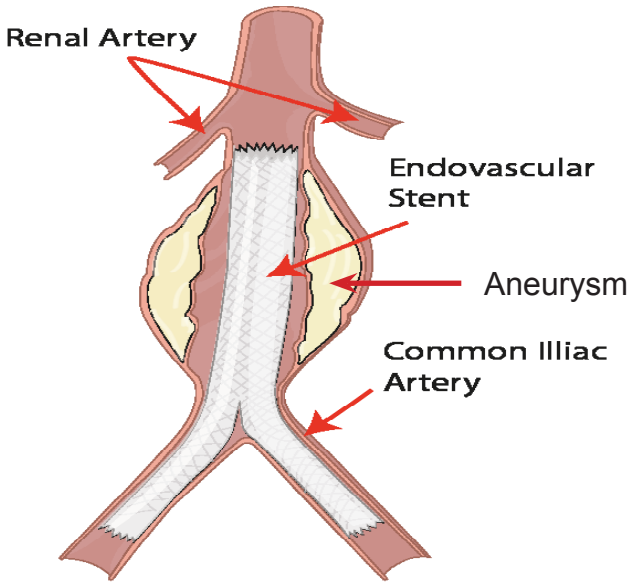

Figure 1

We care

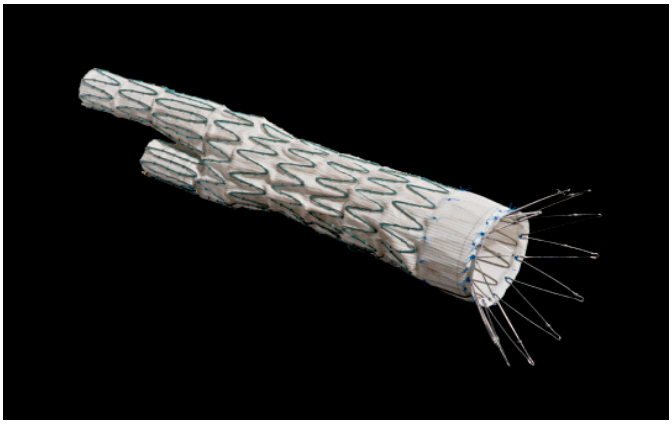

Figure 2

How will this operation help?

The operation is to repair the stretched section by placing a new inner tube inside so that it will not burst. It is carried out in a special theatre under x-ray control and involves making a small incision (cut) in both your groins. A wire is passed via the artery in your leg into the aorta and the stent graft (tube of graft material - see figure 2) is passed over the wire and into position.

Once in place the stent is expanded and it anchors to the artery wall with small metal hooks.

Do I need surgery?

Not all aneurysms need an operation. The risk of rupture and therefore the need for repair depends on the size of your aneurysm. If your aneurysm is large (usually more than 5.5cm (centimetres) in diameter) it is often safer to repair than leave it alone; this protects the aorta from rupture. Smaller aneurysms are usually monitored by repeating scanning at three to 12 monthly intervals in case they enlarge and become dangerous. Average enlargement is about two to three millimetres (mm) per year, so surgery may be needed at a later date.

Are there alternatives?

The alternatives are a more major open operation on your abdomen (tummy) or no treatment.

Is the treatment safe?

All operations carry risks. With this type of procedure there is a risk of the **aneurysm rupturing** during your operation, or failing to seal off the aneurysm, in which case you may need more major surgery. The main complication that can occur after the procedure is that of **the graft moving from position**. Scans can identify any potential problems which can then be rectified or monitored depending on how severe they are. The wounds in your groin can become **infected** and the usual treatment is antibiotics. Your **wounds may also fill with fluid** called lymph that may discharge between the sutures, but this usually settles down with time.

With EVAR the potential complications of the traditional repair are greatly reduced as it places far less stress on your heart. There is less risk of haemorrhage (bleeding) and/or respiratory complications (chest/lung) and general conditions such as deep vein thrombosis (blood clot in leg veins). There is a risk of loss of circulation to your legs, bowel, and kidney, and further surgery is occasionally needed to restore the blood supply to your legs. There is also a risk of the graft becoming infected and to reduce the chance of this happening you are given antibiotics during the operation.

The long-term durability and success may be reduced compared to open repair. Research has shown that one in every 10 patients has to undergo a further endovascular procedure due to complications.

EVAR offers the opportunity for repair in patients who might otherwise not have been fit enough for open surgery.

Before you come into hospital

How do I decide whether to have the operation?

Everyone varies in the risks they are willing to take. The doctors will explain about what they think the risks of the operation are for you and what the risks are of not having the operation. Only you can decide whether to go ahead and have the operation. Nothing will happen to you until you understand and agree what has been planned for you. You have the right to refuse if you do not want the operation.

What should I do before I come into hospital?

You will be invited to an anaesthetic preassessment clinic before your operation. One of our specialist vascular anaesthetists will explain your operation in futher detail, assess your fitness and potential risks for surgery, and give you a description of your anaesthetic. A vascular nurse practitioner will also assess you either at this time or in a separate clinic a week or so before your operation.

It is important to prepare well for the operation. There is a lot that you can do to improve your fitness.

Smoking - if you smoke, you should try to give up. The longer you can give up for the better. Your arteries and your bypass graft are more likely to stop working if you continue to smoke.

- If you can stop smoking for a day or two your blood cells can carry more oxygen around your body.
- If you can stop smoking for about six weeks before you come into hospital you are less likely to get a chest infection after your operation.

Gum - any patient having an operation must not chew gum/nicotine gum immediately before surgery.

Alcohol - if you are used to drinking a lot of alcohol, it is helpful to reduce the amount that you drink. Alcohol can reduce the function of your heart and it may also cause mild dehydration.

Losing weight - if you are overweight, some of the risks of the anaesthetic and the operation are increased; losing weight will reduce these risks. You should consider a change to your diet by reducing the amount of fat that you eat. If you need any advice about this, an appointment can be made for you to see the hospital dietician.

Exercise - regular exercise will increase your strength and fitness. There is no need to push yourself - a regular walk at your own pace will boost your stamina and improve your fitness for your operation.

Other medical problems - if you have long-standing medical problems such as diabetes, asthma, chronic bronchitis, high blood pressure, or epilepsy, it is helpful to have a check up from your own GP. In particular so that your blood pressure and these other conditions are as well controlled as possible.

Coming into hospital

What will happen when I arrive at hospital?

On admission you will be greeted by a member of the Kent Ward team and introduced to your named nurse. They will discuss with you the care that you will receive while you are in hospital. You will also be seen by your consultant or one of their team to explain anything you may be unsure about before you sign a consent form for your operation.

As part of your care whilst in hospital, every effort is made to make sure you are seen by the same hospital doctors who will be part of the vascular and interventional radiology team.

You will usually be admitted early on the day of your operation. Any final tests, such as blood tests, will be completed then. Please do not shave any hair from your stomach or groins as this will be done for you in theatre before your operation. This will be discussed when you attend for the preassessment clinic.

You will meet the anaesthetist, who is a doctor with specialist training in anaesthesia and in the treatment of pain. They will visit you before your operation to talk to you about the anaesthetic and methods of pain relief, taking into consideration any other medical conditions that you have and also previous anaesthetics you have had. They may ask you about your health, look at all your test results, listen to your heart and breathing, and look at your neck, jaw, mouth, and teeth. They will be happy to answer your anaesthetic questions and discuss any worries that you have.

You will be given clear instructions about when to stop food and drink; it is important to follow this advice. If there is food and liquid in your stomach during your anaesthetic, it can get in to and seriously damage your lungs. Usually, you should have no food for six hours but non-milky drinks are allowed until two hours before your operation. You should continue to take all your regular medications even on the morning of the operation, except, if you are taking clopidrogel in combination with aspirin, you would have been advised to stop this if and when you attended the preassessment clinic. You must also temporarily stop anticoagulants, for example warfarin.

A physiotherapist may see you before your operation. They will advise you of exercises to perform after the operation that will help your circulation whilst lying in bed and of deep breathing exercises that will help keep your lungs clear, together with movements of your legs and feet to help prevent blood clots developing in your leg veins. It is very important that you can breathe deeply and cough effectively to help you avoid a chest infection or pneumonia.

You will be asked to have a bath or shower and put on a theatre gown on the day of your operation before you go to theatre.

The procedure will take place in the vascular centre at Kent and Canterbury Hospital, Canterbury.

Will I have an anaesthetic?

The operation is usually performed under a spinal anaesthetic where you are awake but your body is temporarily numb from the waist down. You will usually have an epidural anaesthetic as well, to provide pain relief after your surgery. This is where a small tube is inserted into your back through which painkillers can be given to numb the lower half of your body during the operation and for several days after, if needed.

EVAR can also be carried out with local anaesthetic injections in your groin.

What happens in the anaesthetic room?

The anaesthetist's assistant will attach machines which measure your heart rate (sticky pads on your chest), blood pressure (inflatable cuff on your arm), and oxygen levels (small peg on your finger or ear lobe).

The anaesthetist will numb your skin with local anaesthetic before using a larger needle to insert thin plastic tubes (cannulas) into a vein on the back of your hand or forearm (usually known as a drip) and also in the artery at your wrist (arterial line to measure your blood pressure). These are attached to a bag of fluid.

For a spinal/epidural, you will be asked to lie on your side or sit up, bending forward to curve your back. Local anaesthetic will be injected into a small area of the skin on your back. A special needle is pushed through the numb area and a thin plastic tube (catheter) is passed through the needle into your spine. The needle is then removed, only leaving the catheter in your back. Through this you will receive the spinal anaesthetic which will make you numb from the waist down to your toes, so you will not be able to feel pain from the surgery.

As you are numb, you will be unaware of when you want to pass urine so a tube will also be passed into your bladder (catheter) to empty your bladder and measure the amount of urine that your kidneys produce.

You may be asked to breathe extra oxygen through a mask covering your nose and mouth.

After your operation

How will I feel afterwards?

Following your operation you may be transferred to the high dependency unit (HDU) for close monitoring overnight or you will be returned to the ward if you are well enough and free of pain.

With this type of procedure the recovery rate is much quicker than the traditional open operation and you will be able to eat and drink immediately. The drips in your artery and vein, used to monitor blood pressure and to give you fluids, will be removed once the nurses are happy that you are stable, tolerating diet and fluids, and not feeling sick.

The epidural and bladder catheters are usually removed on the first night following your operation. It is usual to experience some discomfort and numbness around your groin wounds for several weeks after your operation. It is not uncommon for men to experience some swelling to their penis and scrotum following this type of surgery with cuts to both groins. This will go down in time and should not cause you any problems with passing urine. We will aim to get you on your feet and ready for home within 24 to 48 hours. The groin wounds are usually closed with dissolvable stitches which do not need removing.

It is quite common to feel a bit low after having an operation; this can be caused by a number of factors such as pain, feeling tired, and not sleeping well. The nurses can help you with this so please do not hesitate to let them know how you are feeling. It may be as simple as changing your painkillers or having a light-sleeping tablet that may help to make you feel better.

How long will I be in hospital?

We aim to have you home 24 to 48 hours after surgery. Your surgeon and nursing team will decide when you are ready to go home. Please do not leave until you have been given instructions, your medication, and discharge letters for your GP.

What should I do when I go home?

You should aim to ease yourself back to normal activity within a month. You will be safe to drive when you are able to perform an emergency stop comfortably. This will normally be two weeks after your surgery, if in doubt please check with your doctor. Driving too soon after an operation may affect your insurance so we advise you to check your insurance policy details or to contact your insurance company.

It is important to keep your wound areas clean, after 48 hours this can be done with a daily bath and shower patting the area dry with a clean towel. If your wound becomes red and there is a discharge you should speak to your GP as you may need antibiotics. You will be sent home on a small dose of aspirin if you were not already taking it; this is to make the blood less sticky. If you are unable to tolerate aspirin an alternative drug will be prescribed. In some cases you will be asked to take warfarin, a blood-thinning drug instead. Also, you will be taking a statin, a drug to lower cholesterol, together with any other of your normal medications.

What do I do if I feel unwell at home?

In general, call your GP or out of hours doctors service. If you develop sudden pain or numbness in the leg(s) that does not get better within a few hours, then contact the hospital immediately. If you experience any pain or swelling in your calves, any shortness of breath or pains in your chest, you must go to accident and emergency (A&E) immediately.

Will I have to come back to hospital?

As an outpatient, you will have a follow-up CT scan after three months and, if your consultant thinks it is necessary, further yearly scans. These are to check that the new graft is working well and has not moved.

You will be seen in the outpatients clinic six to eight weeks after your procedure but only if a problem is detected on the scans after that.

When can I return to work?

You should be able to return to light work or jobs at home after two weeks and heavier jobs after a month. If in doubt please ask one of the vascular team or your GP.

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 your procedure before you sign the consent form giving us your permission to operate.

Source of information

The information within this leaflet is based on current practice undertaken by your consultant and from national guidelines. If you have any comments regarding this leaflet, we would appreciate your feedback.

Where can I get more information?

If you have any questions or concerns, please contact one of the following: during the working day, first try the vascular nurse or, if unable to get through or out of hours ask the hospital switchboard for the vascular registrar on call.

• Vascular Nurse Practitioners	Telephone: 01227 864137 Email: ekh-tr.vascular-nurse@nhs.net
• Kent and Canterbury Hospital (K&C)	Telephone: 01227 766877 (out of hours for Registrar on call)

or your consultant's secretary

• Mr Rix, Kent and Canterbury Hospital	Telephone: 01227 864259
• Mr Senaratne, Kent and Canterbury Hospital	Telephone: 01227 783196
• Mr Shirazi, Kent and Canterbury Hospital	Telephone: 01227 864255

Useful web addresses

- National Institute for Health and Care Excellence www.nice.org.uk
- Vascular Society of Great Britain and Ireland www.vascularsociety.org.uk
- Circulation Foundation www.circulationfoundation.org.uk

This leaflet has been produced with and for patients

If you would like this information in **another language, audio, Braille, Easy Read, or large print** please ask a member of staff.

Any complaints, comments, concerns, or compliments please speak to your doctor or nurse, or contact the Patient Advice and Liaison Service (PALS) on 01227 783145 or 01227 864314, or email ekh-tr.pals@nhs.net

Further patient leaflets are available via the East Kent Hospitals web site www.ekhuft.nhs.uk/patientinformation

Information produced by the Vascular Surgery Service
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