PATIENT INFORMATION

Abdominal Aortic Aneurysm

Endovascular Aneurysm Repair (EVAR) for my AAA

CIRCULATION FOUNDATION
The Vascular Charity

The following information is applicable to the majority of patients, but there may be additional specific considerations for you personally. The information provided here should be used to supplement any specific conversations your team have with you.

Some words and technical terms are coloured green, and have further explanation in the glossary - which can be found here.

WHAT IS AN ABDOMINAL AORTIC ANEURYSM (AAA)?

"Aneurysm" means a dilatation, or in other words a ballooning or bulge, affecting a blood vessel. The Aorta is the main artery that leaves the heart and delivers pressurised oxygen-rich blood to the various organs as it travels down through the body. Aneurysms can occur in most blood vessels in the body, but the Aorta is the most commonly-affected. When an aneurysm occurs in the segment of Aorta within the Abdomen (tummy), it is called an Abdominal Aortic Aneurysm (AAA).

What causes an AAA?

In general, this is a degenerative, age-related disease, most commonly affecting people over 65 years of age. Men are about 6 times more commonly affected than Women. Risk factors for developing an AAA are typically the same as those for other cardiovascular conditions like heart attacks and strokes; 90 out of 100 patients with AAA have a history of smoking, with other factors including high blood pressure and cholesterol. Genetic factors can play a role, so there may be a family history of aortic aneurysm, particularly if they develop at a younger age.

How do I know I have an AAA, and why are they important?

AAAs generally do not cause any symptoms, and usually grow very slowly over time. The ultimate concern with an AAA is the risk of it rupturing or "bursting", if it grows to a large size. If an aortic aneurysm ruptures, this is fatal for most people, although a small proportion of people may survive with emergency life-saving surgery.

The NHS offers screening to men over the age of 65, so that they can be detected early and monitored, although most aneurysms are still picked up by chance during scanning for other reasons.

What happens when an AAA is found?

Once an Aortic aneurysm is identified, regular surveillance scans are usually advisable; the type of scan and frequency of scanning is determined by a number of factors such as location and size of the aneurysm, and overall fitness of the individual.

Do I need treatment for my AAA?

Small aneurysms can be safely observed, as the risk of rupture is negligible. AAAs slowly grow over time, at an average of around 2mm per year; some will grow slower, while others may grow more quickly. The increased risk of rupture in a large aneurysm means you may be advised to undergo surgery if your AAA exceeds 5.5cm in diameter, when the rupture risk is around 1 or 2 in 100 chance per year; this slowly rises as the aneurysm continues to grow, if left untreated.

WHAT IS EVAR?

Endovascular Aneurysm Repair (EVAR) is a keyhole operation that can be used to treat your aneurysm. Unlike open aneurysm surgery, the aneurysm is not replaced with this technique but instead a stent graft is placed inside the Aorta to reline the blood vessels involved. The term "stent graft" represents a specially engineered self-expanding metal cage (stent), covered in a waterproof fabric tube (graft).

Currently, EVAR accounts for about 60% of AAA repairs in the UK.

Some aneurysms cannot be treated with a standard EVAR; these may be suitable for a more complex EVAR, if Open Surgery is not felt to be the right option for you.

How is the operation performed?

The standard EVAR operation involves inserting 2 or 3 stent grafts inside the Aorta via the femoral arteries in the groins. Inside the body, these stent grafts are then connected together to effectively divert blood through the aneurysm thereby reducing the pressure inside aneurysm.

Typically, the femoral arteries are punctured directly through the skin using needles (the so-called percutaneous approach). Sometimes it may be necessary to access the femoral arteries through surgical incisions. Next, special wires are routed inside the aorta, and over these wires the constrained stent grafts can be positioned into place. In order to "see" exactly where the stent grafts need to be placed inside the blood vessels, the procedure relies on x-rays and a special dye called contrast. Finally, once the stent grafts are lined up in the correct position, they are "deployed" (unconstrained). This allows the stent grafts to expand and make contact with the inside of the artery wall. By making contact with healthy artery walls above and below the aneurysm, these stent grafts create a "seal" which effectively excludes the aneurysm from the circulation.

The anaesthetic

Standard EVAR is generally performed with you awake with local anaesthesic injected into the groins, but a spinal anaesthesia or general anaesthesia may also be used; the exact type of anaesthetic used to perform your operation will be discussed with you by your anaesthetist and surgeon. If you are awake during your operation, your surgeon may ask you to hold your breath for short periods during critical steps of the operation.

What should I do before EVAR Surgery?

- **Stop smoking**
  - If you are a smoker, the single most important thing you can do to help yourself is to give up.
  - Stopping smoking before surgery will reduce the chances of complications.
  - This will help to protect all your arteries, making it less likely that you will suffer from heart attacks, strokes and problems with the circulation in your legs.
- **Take the medications you are prescribed**
- **Increase your activity levels** – brisk walking, swimming or an exercise bike are all excellent
- **Prepare your home** (see later)
- You will usually be given some **body wash and nasal ointment** to use for a few days prior to the operation. Please use this, as it reduces the risk of infections.

Recovery and aftercare

You are most likely to return to a regular ward for observation after your operation. You can usually eat and drink and often can get out of bed on the same day as your procedure as the incisions are very small. Following a 1 or 2 night stay in hospital, most patients can go home (provided that their blood tests are satisfactory and they satisfy certain criteria).

GOING HOME AND AFTERCARE

Once discharged, you should keep your wounds clean until the skin has healed which usually takes about 2 weeks. You should avoid heavy lifting for about 6 weeks. Unless your surgeon tells you otherwise, once your EVAR procedure has been completed your AAA is regarded as repaired therefore you can drive when you can safely perform an emergency stop and can fly as normal. You will however require regular scans of your EVAR graft to ensure the stent grafts continue to exclude the aneurysm from the circulation and you are not developing a problem.

WHAT ARE THE BENEFITS OF EVAR SURGERY?

Whilst most of the same complications that can happen following Open surgery are also possible after EVAR, they tend to be less frequent or less severe when they do occur. EVAR generally has a shorter stay in hospital and a quicker return to normal activities than after Open surgery.

The trade-off for these short-term benefits is the need for long-term surveillance and a chance of needing further procedures in the future.

What are the risks?

Your operation and the aftercare will have been planned very carefully by an expert team who are fully equipped to perform the procedure and manage complications that might arise. The National Vascular Registry (link) keeps a record of all EVAR operations and their outcomes.

Complications can be divided into those that happen during the initial hospital stay, and those that might happen later.

Short-term (in hospital)

- Breathing problems
- Bleeding
- Heart attack
- Disturbance in kidney function
- Infections – chest, wound and urine infections are quite common. Infections of the aortic graft are exceptionally rare
- Blood clots or disturbance of blood flow to legs or bowel– may require additional procedures
- Venous Thromboembolism (VTE): this can include a Deep Vein Thrombosis (DVT), or Pulmonary Embolism (PE).

These issues may prolong your hospital stay, require additional treatments including surgery, and delay your recovery to some degree.

Overall, the risk of death in hospital following a Standard EVAR procedure is about 1 in 200 chance.

Longer-term:

- Readmission after discharge – a "Short-term" issue might rarely occur a bit later and require a further hospital admission after you have gone home.
- Wound healing issues might affect a small number of people
- Endoleak: the stent grafts used to perform EVAR can lose their seal, allowing the aneurysm to become repressurised. Other blood vessels can continue flowing into the aneurysm, which may or may not require treatment in the future
- Stent grafts can kink, become narrowed or block-off altogether.

As a result of endoleak, kinking or blocking-off, around 10 to 15 in every 100 patients who have had an EVAR will require a further procedures to treat one of these problems. For this reason, it is recommended that people who have had an EVAR should have lifelong surveillance thereafter.

There is also a very small increase in the lifetime risk of abdominal cancer following EVAR, for reasons that are not completely clear as yet.

Surveillance

After an EVAR, most people will receive a further CT scan after a month, to ensure everything is running as expected. Assuming that is the case, then typically another scan after 12 months will be followed by an annual ultrasound scan and XRay. If problems are identified on these scans, then the team may recommend another detailed CT scan before discussing any potential further treatments with you.

What are the alternatives?

Click on the following for more information

- Open Surgery
- Deferred or no operation

OTHER THINGS TO EXPECT IN HOSPITAL

Throughout your hospital stay you will receive regular review from the surgical team and other healthcare professionals like Physiotherapy, who will get you back to full mobility. It is important that you can move about. This will help minimise the risk of issues like chest infections, pressure sores, constipation, and Deep Vein Thrombosis (DVT). You will usually be given a daily injection and perhaps some special stockings to wear, which aim to reduce your DVT risk.

You will be advised what medications to take; this may include what you were taking before but there might be some amendments and you will receive advice about your medicines going forward. When you leave hospital, your GP will be informed of what has happened, and any ongoing medicines advice will be communicated to them.

Will I need a blood transfusion?

A small number of people may be recommended to have a blood transfusion following the procedure.

Pain control

It is quite normal to feel some discomfort after EVAR, but for most people it does not slow down their recovery and simple painkillers are only needed for a few days.

Eating and drinking

Most patients are able to eat and drink immediately after returning to the ward following the procedure. Your appetite might be affected for the first few days. Sometimes the bowels take a bit longer to get going.

What can I do to help my recovery in hospital?

- Once you are able, a warm shower may help you feel more normal.
- Relaxing: you may find this difficult to do but simple breathing exercises may help.
- If your appetite is not good, try to eat little and often.

What should I expect with my wounds?

- Take showers rather than baths to avoid soaking your wounds
- Do not scrub your wounds
- Pat the wounds dry after a shower

Do not use perfumed products on your wounds, including moisturisers and talcum powder

Your groin wounds should be dry and healed within 2 weeks. Wound infections do occasionally occur and may require a course of antibiotics. If you develop redness or swelling of the wound after your discharge, you should see your GP.

If clips have been used to close your wound, the team will usually liaise with a practice or community nurse to remove them after you have been discharged.

PLANNING FOR WHEN YOU LEAVE HOSPITAL

It's a good idea to have your home prepared for when you return from hospital.

You may want to rearrange your furniture to make it easier to move around and put any items that you use a lot at a convenient level in easy reach. This will mean you won't have to strain to reach them.

You may want to stock up on easy-cook meals, arrange for someone to do your shopping or order online, as you will be tired for a few weeks after your operation.

If you are on your own, you may wish to enlist the help of family / friends.

Medications

You will usually be sent home on a small dose of Aspirin and a Statin, if you are not already taking them. These two medications are taken for cardiovascular protection, helping reduce the risk of heart attacks and strokes, which are related to the underlying condition responsible for most AAAs.

Activities

- Although it is "keyhole" surgery, EVAR can make you feel a bit lethargic or low in energy; It can take a couple of weeks (sometimes a bit longer) to get back to your normal levels of activity.
- Whilst you are recovering, you should plan periods of rest into your day, gradually reducing them as you get stronger.
- Continued gentle exercise such as walking or cycling are recommended to help improve your overall level of fitness.
- You may resume sexual relations as soon as you feel comfortable.

WILL I NEED TO COME BACK TO HOSPITAL FOR A CHECK-UP?

You will usually receive an appointment to be seen in the Outpatient Clinic in about 6 - 8 weeks, to check you over and make sure everything else is ok. You will be enrolled in a surveillance programme, as described above.

OTHER INFORMATION FOR YOUR RECOVERY

Work

If this applies to you, you should normally be able to return to work withina few weeks of surgery. Your surgical team can give you more advice, arrange for fitness to work certificates and so forth.

Driving

Following your EVAR, you can resume driving when you can perform an emergency stop safely. This will normally be by about 2-4 weeks after surgery. You should inform your insurers that you have undergone the procedure in case they have their own rules on this. If you are in doubt, check with your surgical team.

Flying

You should wait at least 4 - 6 weeks before flying after your operation, but check with your surgical team before you make any travel plans.

Please feel free to ask your Doctors and nurses about anything that is unclear, or if you have any unanswered questions about your care.

What if I think there is something wrong when I get home?
Please contact your Vascular Unit

SOURCES OF MORE INFORMATION AND HELP

CF links to General AAA info, Open, and Non-operative info

Please click on the following for more information:

- NICE decision support tool
- Smoking
- Exercise
- Diet
- Alcohol

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