

Having a filter inserted in your vena cava vein to trap blood clots (vena cava filter)

Department of Radiology

Information for Patients

Produced: April 2021

Review: April 2024

Leaflet number: 30 Version: 6

Introduction

This leaflet tells you about the procedure called insertion of a vena cava filter. It contains an explanation of how the procedure is carried out and what the possible risks are. This will help you to decide whether or not to go ahead with the procedure.

Why do I need a vena cava filter inserted?

You have had tests that show that you have blood clots in the veins in your legs or pelvis, and these may have passed upwards into your lungs and are causing significant problems.

This problem can be treated well with drugs called anticoagulants which thin the blood and stop clots from forming. However, some patients are not able to have anticoagulant drugs, or the clots pass to the lungs despite the drugs. For these patients, insertion of a vena cava filter is a different method to treat the problem.

In your case, your doctor has recommended that you should have a vena cava filter inserted. This is put into the large vein in your tummy (abdomen) called the vena cava. It is inserted either through a vein in your groin or neck.

**Health information and support is available at www.nhs.uk
or call 111 for non-emergency medical advice**

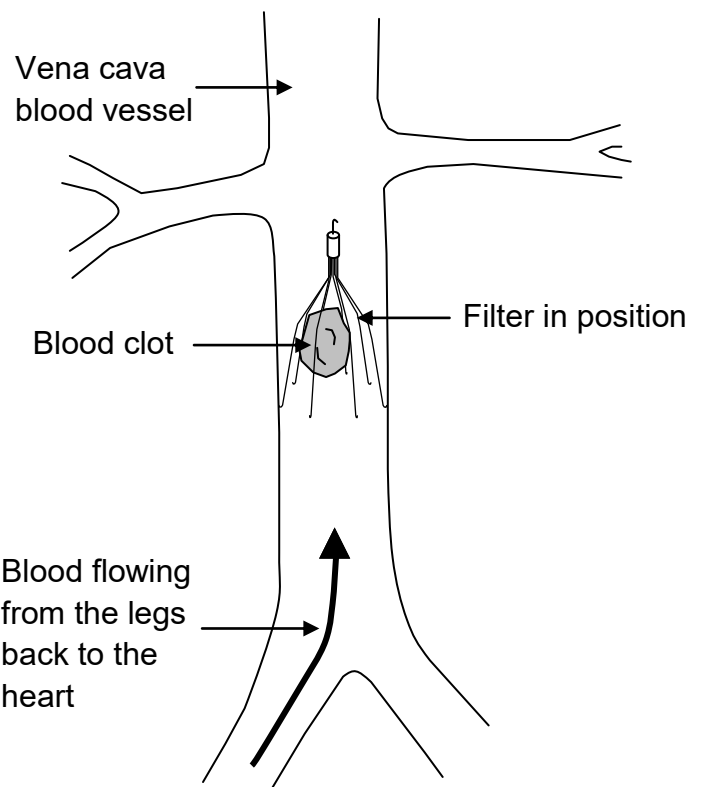
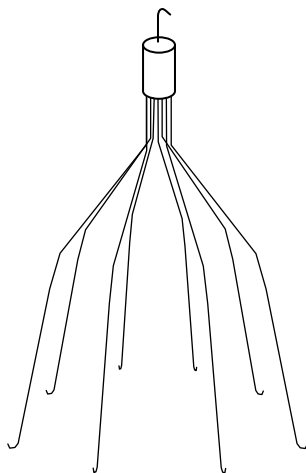
Visit www.leicestershospitals.nhs.uk for maps and information about visiting Leicester's Hospitals
To give feedback about this information sheet, contact InformationForPatients@uhl-tr.nhs.uk

What is a vena cava filter?

A vena cava filter is a small, metal device about 4 cm long, shaped like the spokes of an umbrella or a basket. The filter is placed in the vena cava, which is the large vein in the abdomen which brings blood back from the legs, towards the heart. If there are blood clots in the veins in the legs, these could pass up the vena cava and into the lungs. The filter will catch these blood clots and stop them going to the lungs and causing problems.

Most filters are designed to be removed at a later date, although sometimes this is not possible. Your doctor will talk to you about this. Please also see the information on pages 5 and 6 about how long the filter will stay in.

The filter looks a bit like the spokes of an umbrella:



Your referral and consent

The doctor who referred you should have discussed the reasons for this procedure and any other options with you.

You have been referred to a doctor who specialises in imaging and X-ray treatments (radiologist) for this procedure. They will check that you understand why the procedure is being done, what the chances of success are, and the potential risks. You will be asked to sign a consent form to confirm this. **You should feel that you have had enough information before you sign the consent form.**

If after talking to your hospital doctor or radiologist you do not want to have the procedure then you can decide against it.

If the radiologist feels that your condition has changed they will talk to you about whether the procedure is still needed. They may then ask you to return to your referring doctor for review.

Important information

Please tell the X-ray staff when you arrive if:

- you are allergic to iodine or rubber (latex), have any other allergies or have asthma.
- you have ever had a reaction to the dye used for kidney X-rays and CT scanning and X-rays of your heart and blood vessels (intravenous contrast liquid). This liquid is used to check that the filter is placed in the correct position.
- you are on renal dialysis or have any problems with your kidneys.
- you have diabetes.
- there is any possibility that you may be pregnant.

The radiographer will ask you some questions about your health before the procedure starts to check if you might be allergic to the contrast liquid.

Some patients get a warm feeling and a metallic taste when the contrast liquid is given and sometimes may feel sick. If you do get these feelings they usually last about 1 minute. Please let the staff who are with you know if you get these feelings. Some patients will also have the feeling that they are passing urine but are not actually doing so. This is also normal.

How do I get ready for the procedure?

The procedure can be done as an overnight stay in hospital (inpatient), or as a day patient (day case). This will depend on your health and home circumstances.

- No special preparation is needed.
- You should continue to drink clear fluids (water or fruit juice) until 1 hour before the procedure.
- You may be given a sedative to relieve anxiety.
- You will be asked to put on a hospital gown.
- A thin tube called a cannula will be put into a vein in your arm, either on the ward or when you arrive for your procedure. This is so that you can be given medication if needed.

If you are having the procedure done as a day case, you will need someone to drive you home when it is finished.

What happens during the procedure?

The procedure will usually take place in the X-ray Department. You will lie on the X-ray table flat on your back. You will be attached to a blood pressure monitoring machine and have a small monitoring device (peg) attached to your finger to check your heart rate (pulse).

Everything will be kept clean (sterile). Your skin will be cleaned with antiseptic and you will have some of your body covered with sterile sheets.

The filter is usually inserted through the vein in your groin. Sometimes it may need to be inserted

through the vein in your neck. If this is the case it will be explained to you and you will be able to ask any questions that you have.

The skin and deeper tissues over the vein will be numbed with local anaesthetic. When the local anaesthetic is injected it will sting to start with, but this soon wears off, and the skin and deeper tissues should then feel numb. If the procedure does become uncomfortable you should tell the member of staff who will be with you throughout the procedure.

The radiologist will insert a thin tube called a catheter through the skin and into the vein in your groin/ neck. Images from the X-ray camera are then used to guide the catheter until it reaches the vena cava vein in your tummy. A small amount of a colourless liquid that shows up on X-rays (contrast liquid) will be injected through the catheter into the vena cava to confirm that it is in the right place. The filter will then be inserted through the catheter into the vena cava. The filter will expand and attach to the walls of the vena cava vein.

How long will the procedure take?

Each patient's situation is different, so it is not always easy to know how straightforward or complex the procedure will be. The procedure will usually be completed in about 30 minutes but you could be in the department for about 1 hour altogether.

What happens after the procedure?

You will be taken back to your ward. A nurse will carry out routine observations, such as taking your pulse and blood pressure, to make sure that there are no problems. They will also check the insertion entry point on your groin/ neck to make sure there is no bleeding from it.

You will stay in bed for a few hours until you have recovered. You may be allowed home on the same day, or kept in hospital overnight. If you have any problems after the procedure please speak to the staff on the ward or the radiology nurse.

You will need someone to drive you home.

Are there any risks or complications?

As with any procedure or operation complications are possible. We have included the most common risks and complications in this leaflet, although they are different for each person. Your risks will be discussed with you before you sign the consent form.

Complications associated with having a vena cava filter inserted are usually minor and include:

- **Bleeding** where the needle is inserted (the access site).
- **Haematoma** - you can get a bruise or small collection of blood inside you.
- **Puncture of an artery** (inadvertent arterial puncture).
- **Infection** - to keep this risk small the procedure is done under sterile conditions.

- **Malposition of the filter** - although the filter is inserted under X-ray guidance, there is a small risk that the filter can be put in a position that is not perfect. It is usually acceptable to leave the filter where it is as it will still be able to function. If it is not in an acceptable position then the filter will need re-positioning or removal.
- **Contrast liquid** - you may get a warm feeling and/ or a metallic taste when the injection of the X-ray dye (contrast liquid) is given and sometimes can feel sick. If you do get these feelings they usually last about 1 minute.
- **Reaction to contrast liquid** - some patients may be allergic to the contrast liquid and may have symptoms such as feeling sick or being sick (nausea and vomiting) or a rash. You will be asked some questions about your health before the procedure starts to see if you might be allergic to the X-ray dye. If you develop symptoms at home you should contact your GP or call the NHS helpline on 111.
- **Blood clots in the lungs** – filters are good but not perfect and there is a risk that you may still have blood clots passing into your lungs even though you have a filter fitted. The risk of this happening is less than 1.3 in 100 patients (1.3%).

Delayed complications of vena cava filters:

- **Blockage in the veins (thrombosis)** - there is a possibility that the filter will actually cause blockage of the vena cava or leg veins. This may be because the filter has done its job and captured a blood clot that would have gone to the lungs, or in the long term the filter itself can cause the vein to block. If this was to happen you might suffer with swelling of the legs. It may also cause the valves in the veins to not work properly and this can lead to painful leg ulcers in later life. This may happen in 3 in 10 cases (30%).
- **Filter fracture or migration** - there is a chance that the vena cava filter can lodge in the wrong place, change position or penetrate through the vein (which can rarely lead to injury of a nearby organ). The vena cava filter or a piece of the vena cava filter may break loose and travel to the heart or lungs causing injury or death. The risk of this is less than 1 in 300 patients.
- **Infection** - rarely the filter can become infected.

The overall risk of any complication including a minor complication is between 5 and 8 patients in 100 (5 to 8%).

The risk of a major complication is usually less than 1 in 100 patients (less than 1%).

How long will the filter stay in?

We aim to remove the filter when it is no longer needed. Usually vena cava filters are only kept in for a short length of time—around 6 weeks. This is to avoid the complications mentioned.

When it will be removed will depend on why the filter was inserted in the first place, the results of treatments done so far and plans for further treatment.

In some cases, retrievable filters become stuck to the vein wall and cannot be removed, in which case they are left in permanently (as they are also designed for this).

Will I need to take anticoagulant medication afterwards?

Yes, unless there is a reason why you cannot take blood thinning medication (anticoagulants). The filter only works to prevent blood clots from reaching the lungs, it does not prevent them forming. Your doctor will tell you if you need to take blood thinning medication.

What are the risks from radiation in this procedure?

The risks from having X-rays are very small. We are all exposed to natural background radiation every day of our lives. This comes from the sun, food we eat, and the ground. Each X-ray examination gives a dose on top of this natural background radiation. The risks from radiation are slightly higher for an unborn child so we need to ask female patients aged 10 to 55 years about their last period and if there is any possibility of being pregnant.

The radiation from the X-rays during a vena cava filter insertion is about the same as getting 14 months of natural background radiation.

The benefits of this procedure are likely to outweigh any potential risk, and the risk from not having the procedure could be greater. We will follow our procedures and take safeguards to minimise the amount of X-rays you receive.

What if I need to talk to someone?

If you have any questions or concerns, or cannot make your appointment please contact the Radiology Department on 0116 258 8765 (option 7) - Monday to Friday, 9am to 5pm.

If you have any problems after your procedure when you have gone home, please see your GP or call the NHS helpline on 111.

اگر آپ کو یہ معلومات کسی اور زبان میں درکار ہیں، تو براہ کرم مندرجہ ذیل نمبر پر ٹیلی فون کریں۔
على هذه المعلومات بلغة أخرى، الرجاء الاتصال على رقم الهاتف الذي يظهر في الأسفل

જો તમને અન્ય ભાષામાં આ માહિતી જોઈતી હોય, તો નીચે આપેલ નંબર પર કૃપા કરી ટેલિફોન કરો

ਜੇ ਤੁਸੀਂ ਇਹ ਜਾਣਕਾਰੀ ਕਸਿ ਹੋਰ ਭਾਸ਼ਾ ਵਿਚ ਚਾਹੁੰਦੇ ਹੋ, ਤਾਂ ਕਰਿਪਾ ਕਰਕੇ ਹੇਠਾਂ ਦਿੱਤੇ ਗਏ ਨੰਬਰ 'ਤੇ ਟੈਲੀਫੋਨ ਕਰੋ।

Aby uzyskać informacje w innym języku, proszę zadzwonić pod podany niżej numer telefonu

If you would like this information in another language or format such as EasyRead or Braille, please telephone 0116 250 2959 or email equality@uhl-tr.nhs.uk