University Hospitals of Leicester
NHS Trust

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

Department of Radiology

Information for Patients

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Introduction

This leaflet tells you about the procedure called insertion of a vena cava filter. It tells you how the procedure is done and what the possible risks are. This will help you to decide whether or not to have 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. These clots are called a deep vein thrombosis (DVT). These clots can break off and travel up to your lungs. This is called a pulmonary embolism (PE). This can make you very sick.

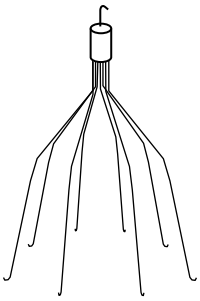
This problem can be treated well with drugs (anticoagulants) that thin the blood and stop clots from forming.

Some patients are not able to have blood thinner drugs. In some patients, taking blood thinners does not stop the clots passing to the lungs. For these patients, insertion of a vena cava filter is a different way to treat the problem.

Your doctor thinks your best option is to 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 near the top of your leg (your groin) or in your neck.

What is a vena cava filter?

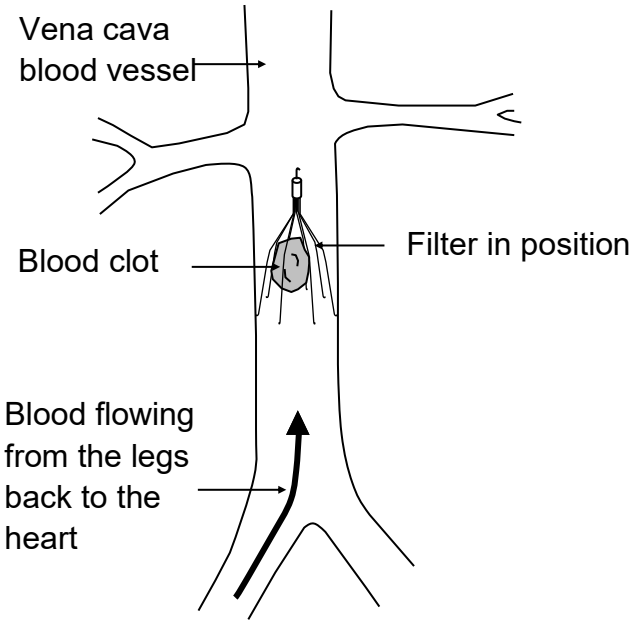
A vena cava filter is a small, metal device about 4 cm long. It is shaped like the spokes of an umbrella.



The filter is placed in a large vein called the vena cava. This vein takes blood from the lower tummy (abdomen) and legs to the heart.

A vena cava filter can catch any blood clots and stop them going your heart and lungs. This lowers your risk of having more blood clots in your lungs.

Most filters are designed to be removed at a later date. But 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.



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.

- **Do not eat for 4 hours before your appointment**
- Please continue to drink fluids until 1 hour before the procedure to keep hydrated.
- **Do not drink for 1 hour before your appointment.**
- We will ask you to put on a hospital gown.
- We will put a thin tube (cannula) into a vein in your arm. This will happen either on the ward or when you arrive for your procedure. This is so that we can give you medicines 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.

Important information about blood thinners:

If you are taking medicine that thins the blood (anticoagulants or antiplatelets) you may need to stop taking it or take a different one for a few days.

Please call the radiology department for advice as soon as possible. The phone number to call is on your appointment letter. It is also at the end of this leaflet. We will ask you what blood thinning medicine you are taking, how much you take (the dose), and what you are taking it for.

Common examples of these drugs include aspirin, warfarin, clopidogrel (Plavix®), apixiban (Eliquis), edoxaban (Lixiana), rivaroxaban (Xarelto), ticagrelor (Brilinta), dalteparin, enoxaparin and heparin.

You may have already been given instructions on blood thinners by the doctor who referred you for this procedure. Please still call the radiology department so we can check this.

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 had a reaction in the past to a contrast liquid injected into a vein (intravenous contrast). This is the dye used for kidney X-rays, CT scanning and X-rays of your heart and blood vessels. This liquid is used to check that the filter is put in the correct place.
- you are on kidney dialysis or have any problems with your kidneys.
- you have diabetes.
- there is any chance 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 pee (urine) but are not actually doing so. This is also normal.

What happens during the procedure?

- The procedure will usually take place in the X-ray Department. You will lie flat on your back on the X-ray table.
- We put a blood pressure cuff (strap) on your arm. We also put a small peg on your finger. These will all be attached to a monitoring machine. This is so we can check your blood pressure, your heart rate and your heart health.
- Everything will be kept clean (sterile). We clean your skin with antiseptic. This may feel cold. We cover some of your body with sterile sheets.
- We usually put the filter in through the vein in the groin. We may decide that it needs to be inserted through the vein in your neck. We will talk to you this is the case. You can ask any questions that you have.
- We use local anaesthetic to numb your skin and deeper tissues over the vein. You will feel a stinging pain to start with when the local anaesthetic is injected. 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.
- We put a thin tube called a catheter through the skin and into the vein in your groin or neck.
- We take X-ray pictures so the radiologist can see where the catheter is inside you. They use the pictures to help guide the catheter until it reaches the vena cava vein in your tummy.
- We inject a small amount of a colourless liquid. It shows up on X-rays (contrast liquid) through the catheter into the vena cava. This is so we can check it is in the right place.
- We put the filter through the catheter into the vena cava. The filter will expand and attach to the walls of your vena cava vein.

How long will the procedure take?

Every patient's situation is different. It is not always easy to know how difficult or how straight forward the procedure will be. The procedure will usually be done in about 30 minutes. 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 do routine checks such as taking your pulse and blood pressure. This is to make sure that there are no problems. They will also check the skin entry point on your groin or 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. The chance of these happening is different for each person. We will talk to you about your risks before you sign the consent form.

Complications linked to 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.
- **Filter not in right place** - 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 work. 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. You can 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. You could get symptoms such as feeling or being sick (nausea or vomiting), or a rash. If you get any of these symptoms at the hospital, tell the doctor, nurse or other staff looking after you. If you develop symptoms at home you should contact your GP or call 111.
- **Blood clots in the lungs** – filters are good but not perfect. 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 chance 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. This can lead to painful leg ulcers in later life. This may happen in 3 in 10 patients (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. If this happens, you may be given antibiotics to treat the infection. We may also need to take the filter out.

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. If this happens, they are left in permanently (as they are also designed for this).

Your referral and consent

The doctor who referred you should have talked to you about the reasons for this procedure and any other options.

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, the potential risks and the chances of success. You will 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 at any time.

If the radiologist feels that your condition has changed they will talk to you about whether the procedure is still needed. They may ask for the doctor who wanted you to have the procedure to talk to you and review your condition.

Will I need to take blood thinners 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 exposure to radiation in this procedure?

The main risk from exposure to X-rays is a higher risk of getting a cancer in the future. This risk is thought to be very small.

We are all exposed to natural background radiation every day of our lives. This comes from the sun, the food we eat, and the ground. Each test that uses X-rays gives a dose on top of this natural background radiation.

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 risks of radiation are slightly higher for an unborn child. We must ask all patients age 10 to 15 years registered female and all patients aged 16 to 55 years about their periods and/or possibility of being pregnant.

The benefits of having this test are likely to outweigh any possible risks. The risks of not having the test could be greater. We try to keep your exposure to X-rays as low as possible.

What if I need to talk to someone?

If you have any questions or concerns, or cannot make the appointment:

please contact the Radiology Department on **0116 258 8765 (option 7)** - Monday to Friday, 9am to 5pm, but not on bank holidays.

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 براہِ کرم مندرجہ ذیل نمبر پر ٹیلی فون کریں۔
على هذه المعلومات بلغةٍ 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

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

Previous reference:

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

LEICESTER'S RESEARCH

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