



Radiology department

Vena cava filter

Introduction

This leaflet tells you about the procedure known as vena cava filter insertion. It explains what is involved and what the benefits and risks are. It may help you think of things you would like to discuss with your doctor.

What is a vena cava filter?

A vena cava filter is a small wire mesh about 5cm (2 inches) long. The filter is placed in the vena cava. This is the large vein in the abdomen which brings blood back to the heart from the legs and pelvis. If there are blood clots in the veins in the legs or pelvis, these could pass up the vena cava and into the lungs. The filter will trap these blood clots and help prevent them entering the lungs and causing problems.

Why do I need a vena cava filter?

You are at risk of pulmonary embolism which is a blood clot on the lung coming from the veins in your legs or pelvis. These problems can usually be treated effectively with blood thinning drugs called anti-coagulants. However, the doctors feel that you need a further method of dealing with these blood clots.

What to tell the doctor

- If you have any allergies.
- If you have had a previous reaction to intravenous contrast medium (the dye used for some x-rays and CT scanning).
- It is important to tell the doctor or the radiology department **before attending for admission** if you are taking medication to prevent blood clots. Below is a list of some of the medications which are used to thin the blood and help to prevent blood clots.

If you are currently taking any of these medications, please contact your referring doctor or the radiology department on 0161 446 3325 as soon as possible, as these may need to be stopped prior to your procedure. Failure to do so may result in your procedure being postponed.

Apixaban	Dalteparin
Aspirin	Enoxaparin
Clexane	Fragmin
Clopidogrel	Rivaroxaban
Dabigatran	Warfarin

Is there any preparation for my filter?

- You will need to have your blood tested a few days before, or on the day of the filter being inserted. This is just to check that it is safe for us to go ahead.
- We will ask you to not eat for six hours beforehand, though you will be allowed to drink water up to two hours before the procedure.
- The radiologist will explain the procedure and any possible risks to you and ask you to sign a consent form.

Who has made the decision?

Your doctors and the radiologist inserting the vena cava filter will have discussed the situation, and feel this is the best treatment option.

Who will be inserting the vena cava filter?

A radiologist (specialist doctor) will insert the filter. Radiologists have special expertise in using x-ray equipment, and also in interpreting the images produced. They need to look at these images while carrying out the procedure.

Where will the procedure take place?

In the radiology department (x-ray department), in the special procedure room.

How do I prepare for insertion of a vena cava filter?

You need to be an inpatient in the hospital. We will ask you not to eat for six hours beforehand, though you can drink clear water up to two hours before the procedure. You may receive an injection of a painkiller and a sedative to make you more relaxed. We will ask you put on a hospital gown. As the procedure is generally carried out using a vein in one of your groins, we will also ask you to shave these areas. Alternatively a vein in your neck can also be used for insertion of a vena cava filter.

You **must** let your doctor know if you have:

- any allergies or
- a previous reaction to intravenous contrast medium (the dye used for kidney x-rays and CT scanning)

Agreeing to treatment

We will ask you to sign a consent form agreeing to accept the treatment that you are being offered. The basis of the agreement is that you have had The Christie's written description of the proposed treatment and that you have been given an opportunity to discuss any concerns. You are entitled to request a second opinion from another doctor who specialises in treating this cancer. You can ask your own consultant or your GP to refer you. Your consent may be withdrawn at any time before or during this treatment. Should you decide to withdraw your consent then a member of your treating team will discuss the possible consequences with you.

What actually happens during insertion of a vena cava filter?

- On arrival at the radiology department you will have the opportunity to discuss the procedure with the radiologist.
- The radiologist will explain all the benefits and possible risks associated with this procedure and we will ask you to sign a consent form.
- You will lie on the x-ray table, generally flat on your back. You will already have a needle in the vein in your arm, so that we can give you a sedative or painkillers.
- You will have monitoring devices attached to you and have oxygen through small tubes in your nose.
- The radiologist needs to keep everything as sterile as possible, and will wear theatre gown and gloves. He or she will swab the skin around the puncture site with antiseptic, and cover the area with theatre towels.
- The skin and deeper tissues over the vein will be anaesthetised with local anaesthetic and then a needle will be inserted into the vein. The radiologist will use the x-ray equipment and small amounts of dye to make sure that the catheter is in the right position. Once the radiologist is satisfied that this is correctly positioned a guide wire is placed through the needle into the vein. Then the needle is withdrawn and a fine plastic tube, called a catheter, is placed over the wire into the vein. This catheter has the filter in it.
- The radiologist uses the x-ray equipment to make sure that the catheter and the wire are moved into the right position, and then the filter is released from the catheter.

Will it hurt?

You may feel some discomfort in the skin and deeper tissues during the injection of the local anaesthetic. After this, the procedure should not be painful. There will be a nurse or another member of clinical staff looking after you. You will be awake during the procedure and able to tell the staff if you are uncomfortable in any way. As the dye passes around your body, you may get a warm feeling. However, this soon passes and should not worry you.

How long will it take?

Every patient's situation is different, and it is not always easy to predict how long it will take. As a guide, expect to be in the x-ray department for about an hour.

What will happen afterwards?

The staff will take you back to your ward on a trolley. Nurses on the ward will carry out routine observations, such as your blood pressure and pulse at regular intervals. They will also look at the puncture site to make sure there is no bleeding from it.

Are there any risks or complications?

Vena cava filter insertion is a safe procedure, but there are some risks and complications that can arise.

- There may occasionally be a bruise or bleeding from the site where the needle has been inserted.

- Very rarely, some damage can be caused to the vein or the nearby artery by the catheter, and this may need to be treated by surgery or another radiological procedure.
- The filter is supposed to break up large clots floating from the legs into smaller pieces which are less likely to cause problems. In about 3 out of 100 procedures the filter can become blocked by a clot. This may cause swelling of the legs.
- As with any mechanical device, there is also the possibility that the filter will eventually fail to work properly or may move.
- There is a very small risk of the filter moving to the wrong place or even to the heart or lungs.
- Some filters can be removed but if we plan to remove the filter this will be discussed.

Despite these possible complications, the procedure is normally very safe, and the benefits are likely to outweigh the risks.

What are the benefits of the procedure?

The benefit is to reduce the risk of large clots on the lung (pulmonary embolus).

What are the alternatives?

Other treatment options include doing nothing or continuing with blood thinning medication alone.

What happens next?

Usually once the filter is implanted it stays in place indefinitely. However if your doctor decides that the filter is no longer needed it can be removed in the radiology department. Your doctors will discuss other treatments you may need.

Further information

This is available from the radiology department on the phone numbers below or from the following websites:

Macmillan Cancer Support: www.macmillan.org.uk

British Society of Interventional Radiology: www.bsir.org

