United Lincolnshire Hospitals NHS Trust

Inferior vena cava (IVC) filter placement & removal

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OUTSTANDING CARE personally DELIVERED

Aim of the leaflet

This leaflet tells you about having an inferior vena cava (IVC) filter inserted and removed. It explains what is involved and what the possible risks are. It is not meant to replace discussions between you and your doctor, but can act as a starting point. If you have any questions about the procedure please ask the doctor who has referred you or the Interventional Radiology department.

What is an IVC filter?

An IVC filter is a small metal ‘umbrella’ shaped device usually placed in a large vein called the inferior vena cava (IVC) that drains blood from the legs and lower part of the abdomen. The IVC filter allows blood to flow through normally but traps any large blood clots, stopping them from getting to your lungs.

An IVC filter is inserted and removed under X-ray guide. A dye (contrast agent), which usually contains iodine, is injected directly into the veins through a fine tube (catheter). The dye fills the blood vessels and makes them visible on X-ray allowing the IVC filter to be correctly inserted and removed.

What is it used for?

Blood clots (thrombosis) sometimes form in the veins of the legs and pelvis. They are known as a deep vein thrombosis (DVT). The clots can sometimes break free and enter with the blood flow into the lungs and make you very sick. This is called pulmonary embolism (PE). They can be fatal. An IVC filter prevents a large PE by trapping a clot before it reaches the lungs.

Who should have an IVC filter?

The usual treatment for DVT and PE is drug treatment to thin the blood. In some patients these drugs do not prevent PEs, in others thinning the blood is too risky. When this happens, patients are considered for an IVC filter. Very occasionally, a patient is advised to have an IVC filter inserted even though they do not have a DVT or PE at that time. Your doctor will explain the reason why they think you should have an IVC filter.

Should an IVC filter be removed?

Modern IVC filters can be left in permanently, however, it is becoming more common for these devices to be a temporary solution and removed when they are no longer

required. This is often after three months but may occasionally be longer. Every patient is different, it depends on the patients individual health and the reason the IVC filter was inserted. Your doctor will explain the reason why they think you should have your IVC filter removed or not.

Are there any risks?

IVC filter insertion and removal is a very safe procedure, but as with any medical procedure there are some risks and complications that can arise.

Rarely a small infection can occur at the needle site which can usually be treated with antibiotics.

A small bruise (haematoma) at the needle site can occur, but this is quite normal. The bruise might be sore for a few days but will disappear in a few weeks. Less commonly, ongoing bleeding in this area can lead to a short inpatient stay.

There is a small risk of damage to the vein, blockage to a vein or blockage of the inferior vena cava (IVC).

Extremely rarely, the filter can migrate which may require a further procedure to reposition the IVC filter or the filter can become imbedded into the wall of the vein.

The dye (contrast agent) used during the procedure is very safe, but occasionally can cause damage to the kidneys. This occurs mainly in patients whose kidney function is poor already and this will be identified on the blood tests that are performed before the procedure. Allergic reactions to the dye or other medications are also possible, but are very rarely serious.

On rare occasions it is not always possible to place or remove an IVC filter. If this is the case the reasons for this will be discussed with you on the day of your procedure and communicated with your doctor.

During the procedure you will receive a dose of radiation as a result of the X-rays used. There is a possible risk of cancer induction from exposure to X-rays. However, we are constantly exposed to radiation from the air we breathe, the food we eat, the ground and from space. This is known as background radiation and has a cancer risk of around 1 in 10,000 per year. Having the procedure could result in you receiving an additional dose of radiation equivalent to a few years of background radiation. The associated risk of possible cancer induction from receiving a dose of radiation equivalent to a few years of background radiation is considered to be low. Your doctor has agreed that this procedure is the best examination for you compared with others and that the benefit of having it outweighs the risks from radiation.

If you need a magnetic resonance (MRI) scan in the future, you should tell the person doing the scan that you have an IVC filter.

Are you required to make any special preparations?

Insertion and removal of IVC filters are usually carried out as day case procedures under local anaesthetic. You will be asked to attend the ward early in the morning so all required paperwork can be completed. You will also be asked not to eat for four hours before the procedure, although you may take small sips of water up to an hour prior to the procedure.

You may be sent a blood form and asked to arrange a blood test prior to the procedure to check your bloods are within safe limits to have the procedure.

If you are taking anti coagulation or anti platelet medication, such as warfarin, you will be given instructions detailing if this medication needs to be stopped and for how long. If you have not been given this information please contact the Interventional Radiology department.

If you have any allergies or have previously had a reaction to the dye (contrast agent) or local anaesthesia please contact the Interventional Radiology department.

If you are a diabetic you may be given instructions detailing if the medication you take needs to be stopped/altered following the procedure and if you require additional blood tests.

You should have someone to drive you home following the procedure. Someone should be at home with you for 24 hours following the procedure. If you do not please let the Interventional Radiology department know.

Who will you see?

A specially trained team led by an interventional radiologist who has special expertise in reading the images and using imaging to guide catheters and wires to aid diagnosis and treatment.

Where will the procedure take place?

In the Interventional suite, which is located within the X-ray department and is similar to an operating theatre.

What happens during an IVC filter insertion/removal?

Before the procedure, a member of the interventional team will explain the procedure and ask you to sign a consent form. Please feel free to ask any questions that you may have and remember that even at this stage, you can decide against going ahead with the procedure if you so wish.

On the ward you will be asked to get undressed and put on a hospital gown. A small cannula (thin tube) may be placed into a vein in your arm in case you need any medication.

You will be asked to lie flat on your back on the X-ray table. The X-ray machine will be positioned above you. You will have monitoring devices attached to your arm, chest and finger.

The procedure is performed under sterile conditions and the interventional radiologist and radiology nurse will wear sterile gowns and gloves to carry out the procedure.

The skin near the point of insertion or removal, usually the neck or groin, will be cleaned with a cold antiseptic and you will be covered with sterile drapes. The skin and deeper tissues will be numbed with local anaesthetic. A small incision will be made, a needle, a wire and finally a catheter (fine plastic tube) will be inserted into the vein.

A fine tube (catheter) will be inserted and guided, using the X-ray equipment into the correct position. Small amounts of dye (contrast agent) are used to check the position of the catheter. During insertion the filter is passed through the tube to the exact site and released. Small hooks grip the wall of the vein and stop it moving. During removal a small hook at the top of the filter is used to pull the filter into the catheter, closing it like an umbrella.

Once the interventional radiologist is satisfied with the images, the catheter will be removed. Firm pressure will be applied to the skin entry point, for about ten minutes, to prevent any bleeding. Sometimes a stitch may be used. You will be advised at the end of the procedure about wound/dressing care.

How long will it take?

Every patient is different and it is not always easy to predict, however, expect to be in the radiology department for about an hour.

Will it hurt?

It may sting a little when the local anaesthetic is injected. You may feel a warm sensation for a few seconds when the dye is injected and feel like you are passing urine.

What happens afterwards?

You will be taken back to your ward. Nursing staff will carry out routine observations. You will generally be required to stay in bed, initially lying flat. If you have an issue lying flat please contact the Interventional Radiology department. After which you will be allowed to sit up, then to walk around the ward, until you have recovered and are ready to go home usually 4 to 6 hours post procedure. You will be informed following the procedure when dressings should be removed and when normal daily activities should recommence.

If you have any concerns after discharge; for non-urgent issues please contact your GP or 111, for urgent issues please come to A&E.

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 the procedure.

Interventional Radiology

Pilgrim Hospital: 01205 445486
Lincoln County Hospital: 01522 573266

United Lincolnshire Hospitals NHS Trust has worked with AccessAble to create detailed Access Guides to facilities, wards and departments at our sites.
www.accessable.co.uk/united-lincolnshire-hospitals-nhs-trust

References

If you require a full list of references for this leaflet please email patient.information@ulh.nhs.uk

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