Information for patients

Vena Cava Filters

Sheffield Vascular Institute

Northern General Hospital
You have been given this leaflet because you need a procedure known as **Vena Cava Filter** insertion. This leaflet explains more about Vena Cava Filter insertion and answers some of the most frequently asked questions.

If, after reading this leaflet, you have any questions or concerns, you should write them down and discuss them at your next appointment with your consultant, or the radiologist. It is important that you understand the procedure, along with the potential benefits and risks before you agree to it.

Sometimes the procedure to insert a vena cava filter is performed urgently, but you should still be aware of all the information, and have the opportunity to ask questions, before you decide to go ahead with it.

**Where will my hospital appointments take place?**

Your appointments will be at the Sheffield Vascular Institute at the **Northern General Hospital**. Consultants from the Sheffield Vascular Institute also liaise with consultants at Rotherham and Barnsley District hospitals, and some patients are seen at these hospitals.

The Sheffield Vascular Institute is one of the largest vascular centres in Europe. We specialise in the treatment of all circulatory conditions affecting the arteries, veins and lymphatics. If you wish to find out more about the Sheffield Vascular Institute then look under the Guide to Services of the Sheffield Teaching Hospitals NHS Foundation Trust website (http://www.sth.nhs.uk)
What is a vena cava filter?

A vena cava filter is a small metal device about one to two inches long. There are a number of different types, but most look a little like the metal frame of an umbrella. They are designed to stay in the body for the rest of a patient’s life, although some types can be removed if required. They are placed in the vena cava and catch large blood clots before they can pass to the lungs.

Why do I need a vena cava filter?

The **inferior vena cava** is the main vein in the abdomen (tummy) and brings blood back to the heart and lungs from the legs and pelvis. **Blood clots** can sometimes form in the veins in the legs or pelvis, and these clots can occasionally break up. They can then be carried, via the veins and lodge in the blood vessels in the lungs. This is called a **pulmonary embolism** (PE) and is potentially life threatening.

The vena cava filter is designed to prevent the passage of large blood clots to the lungs, and therefore reduce the risk of a large embolism.

A vena cava filter is required:

- if you have a blood clot which can not be treated with blood thinning medication (anticoagulants)
- if a blood clot forms despite blood thinning treatment
- occasionally as a temporary measure around the time of a major operation where the risk of a blood clot forming in the leg or pelvis veins is high
The decision to insert a vena cava filter is usually made between your doctor and a specialist X-ray doctor (a radiologist) who inserts them. Your doctor should discuss the reasons why you would benefit from a vena cava filter and together you can decide whether to go ahead with the procedure.

**Before your operation**

If you are not an inpatient, you will be admitted to hospital either on the day of the procedure, or possibly the day before. There is no special requirement to starve. You will be asked to change into a hospital gown and taken down to the X-ray department, usually on a chair or trolley.

You should let the doctor or nurse know if you have any **allergies**, particularly reactions to X-ray dye (contrast medium). If you take anticoagulants, for example, warfarin, these may need to be stopped or adjusted - you should tell your doctor about all the medication you are taking.

We must seek your consent for any procedure or treatment beforehand. Staff will explain the risks, benefits and alternatives where relevant before they ask for your consent. If you are unsure about any aspect of the procedure or treatment proposed, please do not hesitate to ask for more information.

**How is it done?**

The vena cava filter is usually inserted by the radiologist, in the X-ray department. You will be in an X-ray room, usually lying on your back on the X-ray table.

The majority of vena cava filters are inserted through a tiny
hole in the big vein in your groin. Occasionally, it is necessary to put in a vena cava filter through a vein in the bottom of your neck.

It is important that vena cava filters are put in under sterile conditions. The radiologist will wear sterile gloves and a gown, and your skin will be cleaned with antiseptic.

Local anaesthetic is used to numb the skin and deeper tissues over the vein in the groin or neck. The vein is then punctured using a small needle, and various wires and tubes (catheters) are fed up the inside of the vein. These allow the radiologist to take X-ray pictures of the vena cava and accurately position the vena cava filter.

At the end of the procedure, the wires and catheters are removed, and you will be left with the filter in position inside the vena cava. The radiologist will press on your skin for a short time to stop bleeding from the small puncture hole made in the vein, and the skin will heal over the next few days.

**How long does it take?**
The whole procedure usually takes between 30 minutes to an hour.

**Will it hurt?**
Local anaesthetic stings when first injected, but soon numbs the skin. You may be aware of some pushing and pressure where the doctor is working, but you are very unlikely to have discomfort otherwise. However if you feel discomfort, you should tell the doctor or accompanying nurse, and they may provide additional pain relief.
What happens afterwards?
You will return to the ward on a trolley. The nursing staff on the ward will perform routine pulse and blood pressure measurements, and occasionally check the groin puncture site. You will recover in bed for a few hours.

Are there any risks or complications?
Vena cava filter insertion is generally a very safe procedure. There are, however, some risks and complications that can occur. You may get a small bruise in the groin where the vein has been punctured, but this should settle over the following weeks. Rarely, this bruise can be large and cause problems because of added infection. In this case, you may need a course of antibiotics.

Occasionally, the artery in the groin (which sits next to the vein) is inadvertently punctured. This is usually recognised by the radiologist who will remove the needle and press firmly for 5 minutes or so, before continuing with the procedure.

Very rarely, the vein can be damaged by the catheter, and this may require an operation or a further radiological procedure to fix it.

The filter can sometimes fill with the blood clot it has caught, blocking the vena cava, and this may result in swelling of your legs. This can occur after many years, in up to 1 in 10 to 1 in 5 (10-20%) of patients.

As with any implanted device, there is also a possibility that the filter will stop working properly or become dislodged with time. Approximately 1 in 20 (5%) patients will have an embolism even with a filter in place.
Despite these risks and potential complications, the vast majority of patients have no problems at all.

**What happens if the Vena Cava Filter needs to be removed?**

All of the filters can be left permanently inside the body. However, in certain circumstances, a *retrievable filter* may be considered which can be removed in the future. These are used as temporary protection against a large embolism. In order to remove a retrievable filter, local anaesthetic is injected into the skin on one side of the bottom of the neck and a small, special tube is inserted into the vein at that site. The tube is used to grasp the filter from above and remove it. Occasionally, it is not possible to remove a retrievable filter, particularly if there is still some blood clot caught within it.

**What if I think there is something wrong when I get home?**

If you think there is something wrong when you get home, you should contact the ward from which you were discharged or the angiography suite.

Firth 2  (0114) 2714685 / 2712602
Vascular Angio Day ward  (0114) 2716972
Vascular Radiology Secretary  (0114) 2269084