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Inferior Vena Cava Filter Insertion & Removal

An inferior vena cava (IVC) filter is a small device that can stop blood clots from going up into the lungs causing a pulmonary embolism (PE). The inferior vena cava is a large vein running through your abdomen (belly) into your chest, heart and lungs. The (usually temporary) device is put in during a short procedure to prevent these clots. Veins are the blood vessels that bring oxygen-poor blood and waste products back to the heart. Arteries are the blood vessels that bring oxygen-rich blood and nutrients to the body. A deep vein thrombosis (DVT) is a blood clot that forms in a vein deep inside the body. A clot occurs when blood thickens and clumps together. In most cases, this clot forms inside one of the deep veins of the thigh or lower leg.

DVT is a serious medical condition that can cause swelling, pain, and tenderness in your leg. In some cases, a deep clot in a leg vein can break free and travel to the lungs. This can cause a blockage in the vessel called a pulmonary embolism. Pulmonary embolism can cause severe shortness of breath and even sudden death.

An IVC filter is one method to help prevent pulmonary embolism. Your inferior vena cava (IVC) is the major vein that brings oxygen-poor blood from the lower body back to the heart. The heart then pumps the blood to the lungs to pick up oxygen. An IVC filter is a small, wiry device. When the filter is placed in your IVC, the blood flows past the filter. The filter catches blood clots and stops them from moving up to the heart and lungs. This helps to prevent a major, life threatening pulmonary embolism. **It is important to understand that an IVC filter does not protect against DVT.** You may still get a DVT. The filter helps to protect you from a life-threatening pulmonary embolism if you have a DVT.

Why might I need an inferior vena cava filter placement?

Mr Ponosh is normally requested to discuss and undertake an IVC filter implantation or implantation at the request of one of your treating specialists such as a haematologist, physician or surgeon.

You might need an IVC filter if you have a DVT or pulmonary embolism, or have had either of these in the past. You might need an IVC filter if you have a high risk of getting a DVT. Anything that slows the movement of blood through your veins increases your risk of DVT. Anticoagulant (blood thinning) medication such as warfarin, clexane or apixaban are also used to treat people who are at risk of pulmonary embolism. Blood thinners may be used alone to prevent pulmonary embolism. But in some cases, they may be used along with the IVC filter.

Indications for an IVC filter include:

- DVT with a contraindication (can't use) to anticoagulation use
- DVT with a complication (adverse outcome) of anticoagulation use
- Progressive DVT or Pulmonary Embolus (PE) whilst on anticoagulation
- Patients with DVT and limited cardiopulmonary reserve
- Trauma patients
- High risk patients with recurrent PE

Procedure

The IVC filter is placed through a small incision in a vein in your groin, conducted usually as a day case procedure with X-ray guidance under local anaesthetic and sedation. The procedure usually takes approximately 45 minutes. An IV line will be put in your arm or hand before the procedure starts by your treating anaesthetist. You'll be given sedation through the IV line. This will make you relaxed during the procedure. A small incision (2-3mm) is made in your groin to access a major vein leading to the IVC. A long thin tube (catheter) will be inserted into this vein. Using continuous X-rays (fluoroscopy), this tube will be moved up into the IVC. X-ray dye (contrast material) may be sent through into the catheter. This helps show the IVC clearly on the X-rays. The filter will be deployed in the correct position in the IVC. Here the filter will expand and attach itself to the walls of your IVC. The catheter will be removed. Pressure is applied to the groin and you will be transferred to recovery.

What happens after an inferior vena cava filter placement?

After the procedure, you will spend several hours in a recovery room. Most patients are able to go home the same day. Pain following the procedure is minimal.

Mr Ponosh will not normally see you following the filter insertion or removal as these are very low risk procedures. He will correspond with your referring team and update them with your progress. If the filter needs removal, Mr Ponosh's rooms, following consultation with your referring team, will organize this procedure. Of course, if any concerns arise, please contact Mr Ponosh's rooms, your treating hospital, or your referring team at your earliest convenience.

IVC Filter Removal

In almost all cases the filter will be removed as soon as it is not required. This is normally undertaken 2-3 weeks following its insertion. The procedure to remove it is a similar procedure to its insertion. This may be done after your risk of DVT has decreased. The filter should ideally be removed as there can be some long term consequences of prolonged filter placement. Filter removals can be undertaken several months following insertion but this makes the risk of failed removal higher. In some rare cases, the filter is left in place. This may happen if scar tissue grows around the filter and it cannot be removed or if there is significant clot inside the filter.

What are the risks of an inferior vena cava filter placement?

All procedures have risks. The risks of this procedure include:

- Infection
- Bleeding
- Allergic reaction
- Damage to the blood vessel at the insertion site - bruising, bleeding or leak from vein
- Blockage of blood flow through the vena cava, which can cause leg swelling
- A filter that travels to the heart or lungs, causing injury or death - extremely rare
- A filter that pierces through the inferior vena cava, causing pain or damage to other organs - rare
- Problem with placement of the filter
- Continued risk of a blood clot that travels to the lungs

Your risks may vary based on your overall health, the severity of your condition, and other factors. These risks are small and relatively rare.

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