

# The Placement and Retrieval of IVC Filters

James F. Benenati, MD, provides his insight on the SIR guidelines regarding IVC filter use and reminds us that patient follow-up and appropriate retrieval are tantamount to success.



**What are the major issues surrounding the use of inferior vena cava (IVC) filters in the current practice of preventing pulmonary embolism (PE)?**

IVC filters are very important tools for physicians treating patients with deep venous thrombosis and PE. There is very good evidence that these filters are effective in certain patient populations. One of the issues that has arisen recently is that IVC filters tend to be overused and that the indications for the filters are starting to be expanded and stretched into areas where we don't have a lot of evidence to justify their use. Importantly, there may be some situations in which you can't wait for level I evidence. If something makes very good sense and it is believed that it may be best medical practice, it may be appropriate to use a device with an expanded indication. We do not want to deny patients a treatment that could possibly help them.

Any implantable device carries some risk with it, and if you are placing filters too liberally, you are putting some patients at risk either without benefit or with limited or unproven benefit. More and more retrievable filters are being used. Filter use in this country is increasing quickly, and one of the problems is that a majority of the temporary filters are not being retrieved. Retrievable filters are often being used as permanent devices, and many patients are not being followed closely enough with these devices. We must be cautious and make sure that if someone receives a temporary filter, the filter is removed when the patient's risk of PE has passed. We

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need better follow-up in this country, and that is exactly what the US Food and Drug Administration suggested in their warning letter in August 2010.

## How have these issues come to light?

These issues have come to light by looking at the overall use of a product. This type of information is easily attainable, and it has become apparent that the number of filters being placed annually is rising sharply. There may be good reasons for this and proper indications; I'm not stating that we are doing something wrong. I'm stating that we need to take a very close look at what we are doing and have very good follow-up with our patients. It may be that this is all very appropriate, but we need to have better follow-up and control of our patients.

## When is a retrievable device preferred over a permanent device?

A retrievable device is favorable over a permanent device when a patient's risk of having PE is limited to a short period of time. Patients who may be at high risk

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in a temporary situation, as, for example, those who possibly have a clot in their leg and are undergoing surgery or are exposed to certain risk factors that may be limited in time. When they are out of the period of risk, the filter should come out.

### **To what degree are the current devices of concern as to how they are used and monitored?**

There are a variety of devices available. They are all different, and the data on them are different. They all tend to work pretty well. Some of the filters seem to be more problematic than others, and those need to be examined more closely. Some filters tend to migrate more than others or tilt, bend, and fracture in the vena cava. It is probably best dealt with by a postmarket trial—not a registry—to look at the use and the safety profiles of the filters, either individually or all-inclusive. Some of the responsibility falls to the manufacturers to be aware of whether their devices are problematic, and if they are, it is their responsibility to issue warnings, report problems to the US Food and Drug Administration, and either modify the devices or pull them from the market.

### **What is the Society of Interventional Radiology (SIR) recommending within their guidelines specifically pertaining to the education of both interventionists and hospital staff who are involved in implanting, monitoring, and retrieving filters?**

The SIR recommends all interventionists be properly trained through accredited fellowships. To place a filter, one must have adequate training; this is attained by properly accredited fellowship training or post-fellowship educational activities that provide adequate training in imaging and device placement.

One must understand all the indications and risks of placing the filter, and physicians are obligated to obtain informed consent and explain these procedures to their patients along with risks, complications, and alternative therapeutic options. In the appropriate setting, when a filter can be removed, the patient should be followed closely, seen back by the implanting

physician, and have the filter removed at the first available time that the patient is out of the window of risk for PE.

### **What is the ideal timing and nature of follow-up for patients in whom an IVC filter has been placed?**

The ideal timing and follow-up depend on the indication for the filter and the patient's clinical status. A filter that is being placed permanently with no chance of coming out might not require close follow-up. A patient who has an opportunity to have the filter removed needs appropriate follow-up as determined by the implanting physician at the time the device is placed. It's the responsibility of the implanting physician to bring the patient back at an appropriate time for follow-up.

### **What types of imaging equipment should every center have available?**

Implanting filters requires good-quality imaging equipment with the ability to record and store permanent images and the ability to perform imaging runs. Documentation of location of placement and patency of the vena cava must be recorded.

### **How much or how often is continuing medical education (CME) required for interventionists who are placing these devices?**

This skill set needed to perform IVC filter placement requires specific training in the venous system. This should be obtained during fellowship training. CME is vital in all areas of intervention and should occur frequently. Specific CME in venous interventions should be obtained periodically in order to be qualified to place IVC filters. ■

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**For more information about IVC filters,  
please visit [SIRweb.org](http://SIRweb.org).**