

Images in cardiovascular medicine

A new permanent and retrievable vena cava filter: its removal after five months

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Major indications for inferior vena cava interruption are to prevent pulmonary embolism in patients with deep vein thrombosis or pulmonary embolism who either cannot be anticoagulated or suffer from a recurrent venous thromboembolic disease despite adequate anticoagulation¹. Recently, filters for temporary, rather than permanent, use have been developed. These filters are attached to a tethering catheter or a wire for retrieval 1-6 weeks after implantation, although they can also be used as a permanent option, if necessary². Use of temporary filters is a promising form of treatment for inferior vena cava interrup-

tion, although appropriate clinical studies are necessary to validate their safety and clinical benefit.

References

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2. Linsenmaier U, Rieger J, Schenk F, Rock C, Mangel E, Pfeifer KJ. Indication, management, and complications of temporary inferior vena cava filters. *Cardiovasc Intervent Radiol* 1998; 21: 464-9.

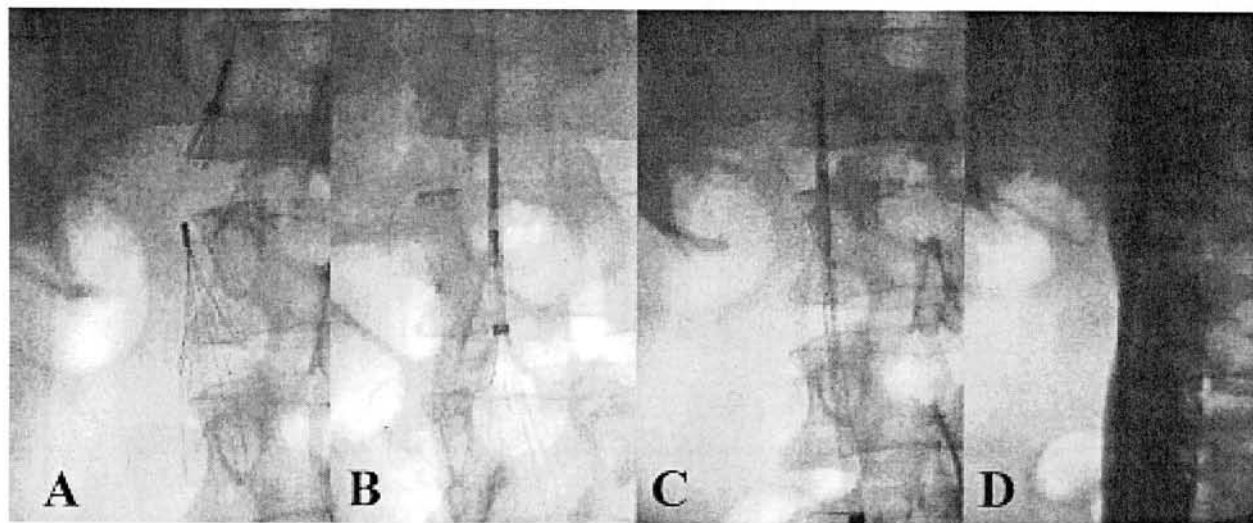


Figure 1. Successful removal of a temporary inferior vena cava filter (ALN, Implants Chirurgicaux, Ghisonaccia, France), 5 months after its implantation in a 57-year-old man, with a recent oral anticoagulant-related intracerebral hemorrhage, referred to our center because of pulmonary embolism (Miller's index 14) caused by a mobile thrombus located in his right common and superficial femoral vein. A: a radio-opaque 9F retrieval sheath is inserted via the right jugular vein with an inner retrieving catheter with stainless steel pliers at its end; the distal tip of the sheath is placed just above the apex of the inferior vena cava filter, and then the retrieving catheter is introduced. B: after engaging the cephalic cone-shape apex, a slight tension is applied to the retrieving catheter until it is partially advanced over the filter, which at this point is just collapsed. C: further caudal movement of the retrieval sheath disengages the filter barbs and wires completely from the inferior vena cava wall without peeling it and allows for a rapid and atraumatic filter retrieval. D: after the filter is retrieved, a vena cava angiogram is performed to exclude any injury to the inferior vena cava wall.

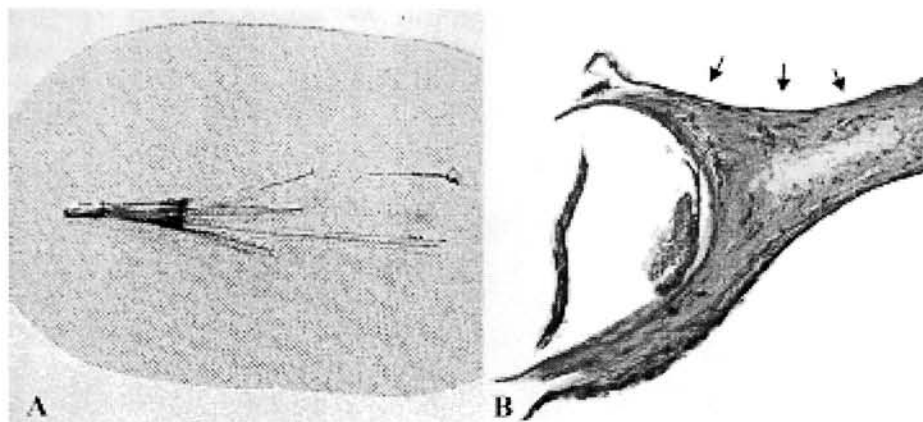


Figure 2. A: gross inspection of the removed device showed no alterations of the stainless steel struts, due to corrosion or fatigue, whereas a small trapped embolus was visible in the central part of the proximal filter. B: microscopic examination, at the site of the filter wire in contact with the caval wall, showed localized thin neointima hyperplasia and small fibrin deposits, with few adherent erythrocytes and thrombocytes, and without any signs of acute inflammation or foreign body rejection.