Trust Guideline for the Insertion of Vena Cava Filters

For Use in:	NNUH
By:	Medical/surgical/radiological staff
For:	Patients at risk of life threatening pulmonary embolism
Division responsible for document:	Medical
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If Yes - does the strategy/policy deviate from the recommendations of NICE? **If so why?**	N/A

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Objective/s

To provide health care professionals with clear guidance on the use and management of vena cava (VC) filters.

Rationale

The major purpose of a VC filter is to prevent pulmonary embolus (PE) in **patients with a contra-indication to anticoagulation.** VC filters should not be considered as a substitute for anticoagulation in any other situation.

There is evidence from randomised trials that the use of VC filters in addition to anticoagulation in patients with venous thromboembolism does not reduce the risk of recurrent symptomatic PE. Evidence for the use of VC filters in the majority of patients with contra-indications to anticoagulation is grade 2C only. Confusion exists amongst healthcare staff as to what is a definite contra-indication to anticoagulation, when VC filter may be considered and aftercare of patients with VC filters in situ; this guideline addresses some of these problems

Broad recommendations

- Patients who are being considered for VC filter insertion should be discussed with a consultant haematologist AND an interventional radiologist before filter insertion to ensure all anticoagulant options have been explored.

- VC filters are not indicated in:
    - Unselected patients with VTE who will receive conventional anticoagulant therapy (Grade 1B)
    - Patients with free-floating thrombus (Grade 2B)
    - Thrombolysis (Grade2C)

- Anticoagulation should be resumed if contraindication to anticoagulation is no longer present and ongoing thrombotic risk remains. The filter should then be removed.

<u>Indications</u>

- VC filters may be considered in the following:
    - Patients with proximal DVT or PE who have a contraindication to anticoagulation e.g. intracranial, GI bleeding or patients with an underlying bleeding tendency.
    - Pregnant patients who have contra-indications to anticoagulation or who develop extensive VTE in advanced stages of pregnancy to cover delivery.
    - Pre-operative patient with proximal DVT or PE within 1 month in whom anticoagulation must be interrupted to cover the operation.
    - Selected patients with PE despite therapeutic anticoagulation.

Increasing target INR to 3.5 or using alternative anticoagulation e.g. LMWH should be considered first.

- Patients who are going to have a pulmonary endarterectomy for chronic thromboembolic pulmonary hypertension. These filters are left in permanently.

Type of filter

- Optionally retrievable filters should be used – currently Cook Celect™ and Bard Denali.

Positioning of filter

- Careful consideration needs to be given to the placement of filters infrarenally in situations where deformation of the filter may hamper subsequent retrieval attempts e.g: pregnancy, large neoplasms.

Removal of filter

- Anticoagulation should be restarted if thrombotic risk persists and contraindication to anticoagulation no longer present.
- An IRU referral to remove the filter should be made prior to discharge for all filters which are intended to be temporary. If it is not known how long the filter requires to remain in situ at the point of discharge follow up is required
- The IRU and VTE clinic provide a safety net to ensure IVC filter removal. Where a filter removal decision has not been made the responsible clinician at the time of filter insertion will be contacted. A haematology outpatient appointment to review duration of filter can be arranged if required. Arrangements for filter removal identified by this route are made by the VTE clinic.
- Filter removal can be performed on therapeutic anticoagulation.

Anticoagulation following insertion of filter

- Anticoagulation should be considered in patients in whom the filter remains in situ but the decision to introduce anticoagulation should be based on the perceived thrombotic versus bleeding risk. There is insufficient evidence to suggest that all patients with a permanent VC filter should be on life-long anticoagulation. (Grade 2C).

Complications of VC filter placement include

- Immediate complications e.g. misplacement (1.3%), haematoma (0.6%) and air embolism (0.2%)
- Early complications e.g. insertion site thrombosis (8.5%)
- Late complications e.g. recurrent DVT (21%), VC thrombosis (2 to 10%) and post thrombotic syndrome (15-40%)
- Failure of removal

- Theoretical risk of filter migration with MRI scanning; discuss with radiology if patient requires MRI scan.

Clinical audit standards

Filter insertion numbers, indications and complication rates.

Summary of development and consultation process undertaken before registration and dissemination

The original guideline was drafted on behalf of the Thrombosis and Thromboprophylaxis committee. During its development and subsequent versions it was circulated for comment to the Thrombosis and Thromboprophylaxis committee; suggestions have been incorporated.

This version endorsed by the above.

Distribution list/ dissemination method

Via the Trust intranet.

References/ source documents

- **Guidelines on use of Vena Cava filters. British Committee for Standards in Haematology 2006** http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2141.2006.06226.x/full
- **Cochrane review:** http://summaries.cochrane.org/CD006212/vena-caval-filters-for-the-prevention-of-pulmonary-embolism
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- **The PREPIC2 Study Group.** Effect of a retievable filter plus anticoagulation vs anticoagulation alone on risk of recurrent pulmonary embolism. A randomised clinical trial. JAMA, 313(16): 1627-1635