Trust Guideline for the Insertion of Vena Cava Filters

Document Control:

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	Medical/surgical/radiological staff		
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Version History:

Version	Date	Author	Reason/Change
V1.0	Pre-2009	T&T Committee	To originate document
V5.0	Feb 2020	Dr H Lyall	Minor changes - author amended, removal of filter section amended
V6.0	Nov 2023	Dr H Lyall	Document transferred to new Trust Procedural Document template and various sections updated

Previous Titles for this Document:

Previous Title/Amalgamated Titles	Date Revised
None	Not applicable

Distribution Control

Printed copies of this document should be considered out of date. The most up to date version is available from the Trust Intranet.

Consultation

The following were consulted during the development of this document:

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. Version 6 was reviewed and updated by Dr Hamish Lyall, Consultant Haematologist.

Monitoring and Review of Procedural Document

The document owner is responsible for monitoring and reviewing the effectiveness of this Procedural Document. This review is continuous however as a minimum will be achieved at the point this procedural document requires a review e.g. changes in legislation, findings from incidents or document expiry.

Relationship of this document to other procedural documents

This document is a clinical guideline applicable to the Norfolk and Norwich University Hospitals NHS Foundation Trust.

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1. Introduction

1.1. Rationale

The purpose of a VC filter is to prevent pulmonary embolus (PE) in patients with a contra-indication to anticoagulation.

Guidance is required regarding what constitutes a definite contra-indication to anticoagulation, when VC filter may be considered and aftercare of patients with VC filters in situ.

1.2. Objective

The objective of the clinical guideline is to provide health care professionals with guidance on the use and management of vena cava (VC) filters.

1.3. Scope

- 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
    - Patients with free-floating thrombus
    - Thrombolysis
- Anticoagulation should be resumed if the contraindication to anticoagulation is no longer present and ongoing thrombotic risk remains. The filter should then be removed.

1.4. Glossary

The following terms and abbreviations have been used within this document:

Term	Definition
DVT	Deep vein thrombosis
IRU	Interventional Radiology Unit
IVC filter	Inferior Vena Cava filter
MRI	Magnetic resonance imaging
NNUH	Norfolk and Norwich University Hospitals NHS Foundation Trust
PE	Pulmonary embolism
VC filter	Vena Cava filter
VTE	Venous thromboembolism

2. Responsibilities

The Thromboprophylaxis and Thromboprophylaxis Committee is responsible for reviewing and updating this document

3. Processes to be followed

3.1. Indications

- VC filters may be considered in the following:
    - Patients with acute 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 develop 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. Reasons for anticoagulation failure should be explored. Switching anticoagulant or increasing intensity of anticoagulation should be considered first.
    - Patients who are going to have a pulmonary endarterectomy for chronic thromboembolic pulmonary hypertension at the request of the surgical centre.

3.2. Type of filter

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

3.3. 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.

3.4. 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.

3.5. 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.

3.6. 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.

4. References

- 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
- Safety of Inferior Vena Cava Filter Retrieval in Anticoagulated Patients

CHEST July 2007 vol. 132 no. 1 31-36
http://chestjournal.chestpubs.org/content/132/1/31.full

- 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
- Society of Interventional Radiology Clinical Practice Guideline for Inferior Vena Cava filters in the Treatment of Patients with Venous Thromboembolic Disease 2020 Society of Interventional Radiology Clinical Practice Guideline for Inferior Vena Cava Filters in the Treatment of Patients with Venous Thromboembolic Disease - Journal of Vascular and Interventional Radiology (jvir.org)
- National Institute for Health and Care Excellence: Guideline NG158 Venous thromboembolic diseases: diagnosis, management and thrombophilia testing 2023 Recommendations | Venous thromboembolic diseases: diagnosis, management and thrombophilia testing | Guidance | NICE

5. Monitoring Compliance

Compliance with the process will be monitored through the following:

Key elements	Process for Monitoring	By Whom (Individual / group /committee)	Responsible Governance Committee /dept	Frequency of monitoring
Filter insertion numbers, indications and complication rates.	Audit	Thrombosis and thromboprophylaxis committee	Thrombosis and thromboprophylaxis committee	As clinically indicated

The audit results are to be discussed at relevant governance meetings to review the results and recommendations for further action.

6. Appendices

There are no appendices for this document.

7. Equality Impact Assessment (EIA)

Type of function or policy	Existing

Division	Medicine	**Department**	Haematology
Name of person completing form	Dr H Lyall	**Date**	06.11.2023

Equality Area	Potential Negative Impact	Impact Positive Impact	Which groups are affected	Full Impact Assessment Required YES/NO
Race	None		N/A	No
Pregnancy & Maternity	None		N/A	No
Disability	None		N/A	No
Religion and beliefs	None		N/A	No
Sex	None		N/A	No
Gender reassignment	None		N/A	No
Sexual Orientation	None		N/A	No
Age	None		N/A	No
Marriage & Civil Partnership	None		N/A	No
EDS2 – How does this change impact the Equality and Diversity Strategic plan (contact HR or see EDS2 plan)?		This policy does not discriminate		

- **A full assessment will only be required if: The impact is potentially discriminatory under the general equality duty**
- **Any groups of patients/staff/visitors or communities could be potentially disadvantaged by the policy or function/service**
- **The policy or function/service is assessed to be of high significance**

IF IN DOUBT A FULL IMPACT ASSESSMENT FORM IS REQUIRED

The review of the existing policy re-affirms the rights of all groups and clarifies the individual, managerial and organisational responsibilities in line with statutory and best practice guidance.