

Title:

Analysis of the effectiveness of the introduction of an Interdisciplinary Approach to IVC Filter Stewardship at Beaumont Hospital

Authors:

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Introduction

Inferior vena cava (IVC) filters reduce pulmonary embolism risk by trapping thrombi and are primarily indicated when anticoagulation is contraindicated during acute venous thromboembolism. Retrieval is recommended once filtration is no longer required, as prolonged dwell time increases device related complications including thrombosis, migration, fracture and caval perforation ¹. The Society of Interventional Radiology (SIR) recommends documented assessment within 3 months of insertion regarding ongoing filtration or retrieval ².

Aims

To assess IVC filter activity at our centre, determine median time to retrieval, and evaluate documentation of a retrieval plan or rationale for permanent filtration before and after introduction of an interdisciplinary IVC filter stewardship programme.

Methods

The radiology database was reviewed for all IVC filters inserted between 2023 and 2025. An interdisciplinary stewardship committee involving nursing and medical colleagues from coagulation haematology and interventional radiology was established in July 2024, with bimonthly meetings and mandatory interdisciplinary approval for filter insertion. The database interrogation involved a comparison of the 18 month period prior to the establishment of the programme and the 18 month period afterwards. Date of insertion and retrieval were recorded. For filters remaining in situ, case notes were reviewed to establish the rationale for permanent placement.

Results

Fifty one filters were inserted during the 18 months preceding stewardship implementation and 39 during the subsequent 18 months. Median time to retrieval decreased from 53.5 to 33 days. Prior to stewardship implementation, 21/51 (41%) filters were retrieved, 19 patients died with filters in situ, and 9 filters remained permanently. A documented retrieval or permanency plan was present in 49/51 (96%). Following implementation, 28/39 (72%) filters were retrieved, 5 patients died with filters in situ, and 4 had a documented plan for permanent filtration. Documentation of a retrieval/permanency plan was present in 37/39 (95%).

Conclusions

IVC filter stewardship was associated with a substantial reduction in median dwell time. Documentation of a management plan was high both before and after implementation, although opportunities remain for improvement. A visual chart prompt incorporating a QR code linking directly to the interventional radiology ordering system for filter retrieval has been developed to further facilitate timely retrieval and communication (see figure 1).

References

1. Wang SL, Siddiqui A, Rosenthal E. Long-term complications of inferior vena cava filters. J Vasc Surg Venous Lymphat Disord. 2017 Jan;5(1):33-41.
2. Kaufman JA, Barnes GD, Chaer RA, Cuschieri J, Eberhardt RT, Johnson MS, Kuo WT, Murin S, Patel S, Rajasekhar A, Weinberg I. Society of Interventional Radiology clinical practice guideline for inferior vena cava filters in the treatment of patients with venous thromboembolic disease: developed in collaboration with the American College of Cardiology, American College of Chest Physicians, American College of Surgeons Committee on Trauma, American Heart Association, Society for Vascular Surgery, and Society for Vascular Medicine. Journal of vascular and interventional radiology. 2020 Oct 1;31(10):1529-44.

Figure 1 – Visual cue for medical documentation



An IVC filter has been placed for this patient

The IVC filter should be retrieved as soon as possible to reduce the risk of retrieval failure.

Retrieval should be considered when therapeutic anticoagulation has been established and/or the filter is no longer clinically indicated.

It is the responsibility of the primary team to schedule retrieval of this filter. Retrieval can be organised by contacting the IR suite via the Siilo app. See QR code above.

Date of filter insertion:

Name (block capitals):

Signature and reg. no.:

Date: / /

v1.0 (pilot) 22/09/2026