

Improving IVC Filter Retrieval Rates Using a Filter Registry: A 2025 Update

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Background

IVC filters are used in patients with venous thromboembolism (VTE) and a contra-indication to anticoagulation (e.g. major bleed, perioperative period, late pregnancy) or recurrent VTE despite adequate anticoagulation.

We introduced a local IVC filter registry in 2014 which improved attendance rates for temporary IVC filter retrieval (previous audit cycle: Jan 2014 - Dec 2017). This audit aims to examine the ongoing effectiveness of the IVC filter registry and to assess contemporary indications, retrieval rates and complications of the IVC filters in our tertiary IR centre.

Why remove IVC filters?

Commonest reason for removal is that the indication for placement, contra indication to anticoagulation is no longer relevant. Furthermore, there are complications associated with IVC filters including IVC thrombosis, recurrent lower limb DVT, filter fracture and filter migration [1]. Therefore, IVC filters should be retrieved at the earliest opportunity to prevent these potential complications.

The advised time frame for retrieval is as per manufacturer guidelines. The RCR quotes 2 weeks – 6 months [1]. Prolonged filter dwell time increases risk of complicated retrieval [2].

IVC filter registry

We introduced a local IVC filter registry in Jan 2014 with aim of improving attendance rates for IVC filter retrieval in a timely manner. This is a database of patients who had IVC filters inserted in our centre. A letter is sent to the referring clinician at 1-month post-insertion, with a follow-up letter at 3 months post-insertion if no response. The letter contains date of insertion, guidelines for filter retrieval, and encourages communication regarding clinical decisions e.g. referral for filter retrieval or non-referral if it has been decided to make the filter permanent.

Standard, indicator, targets & methodology

Standard: Attempts should be made to retrieve all temporary IVC filters

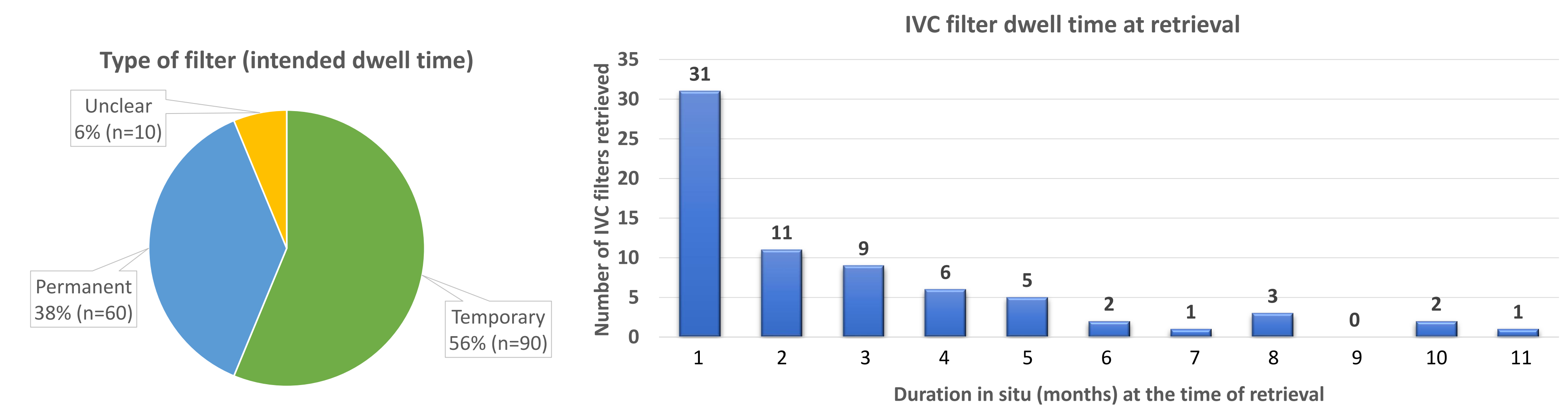
Indicator: Percentage of patients with temporary IVC filters attending for filter retrieval

Targets:

- 100% of the patients with temporary IVC filters should have a filter retrieval attempt
- Minimum technical successful retrieval rate of 80%

These are based on RCR recommendations [1]

Methodology: Retrospective audit of IVC filters inserted during 2018-2024 in our centre (n=160). Radiology PACS, IVC filter registry and Clinical Portal were searched for the relevant data.



Results

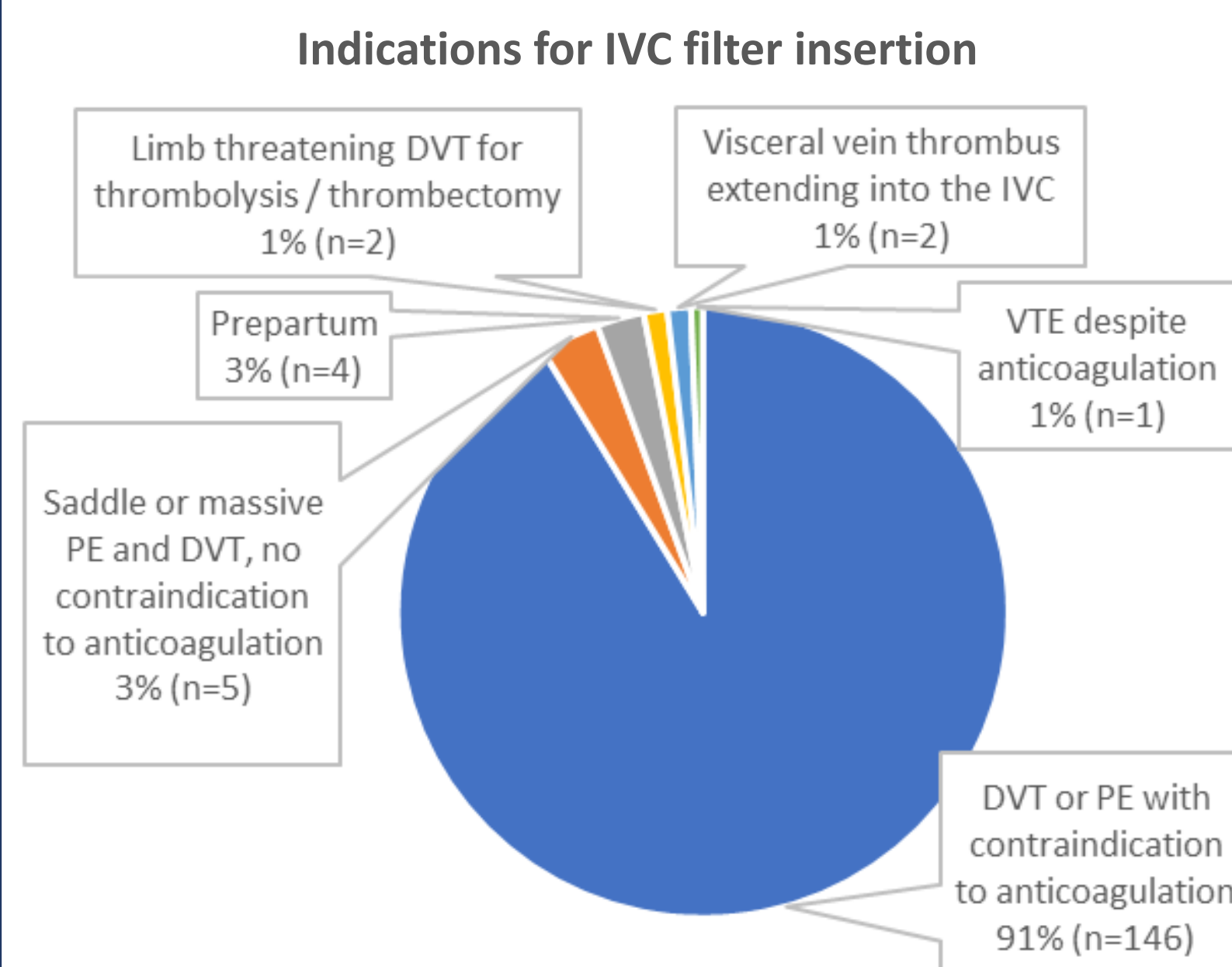
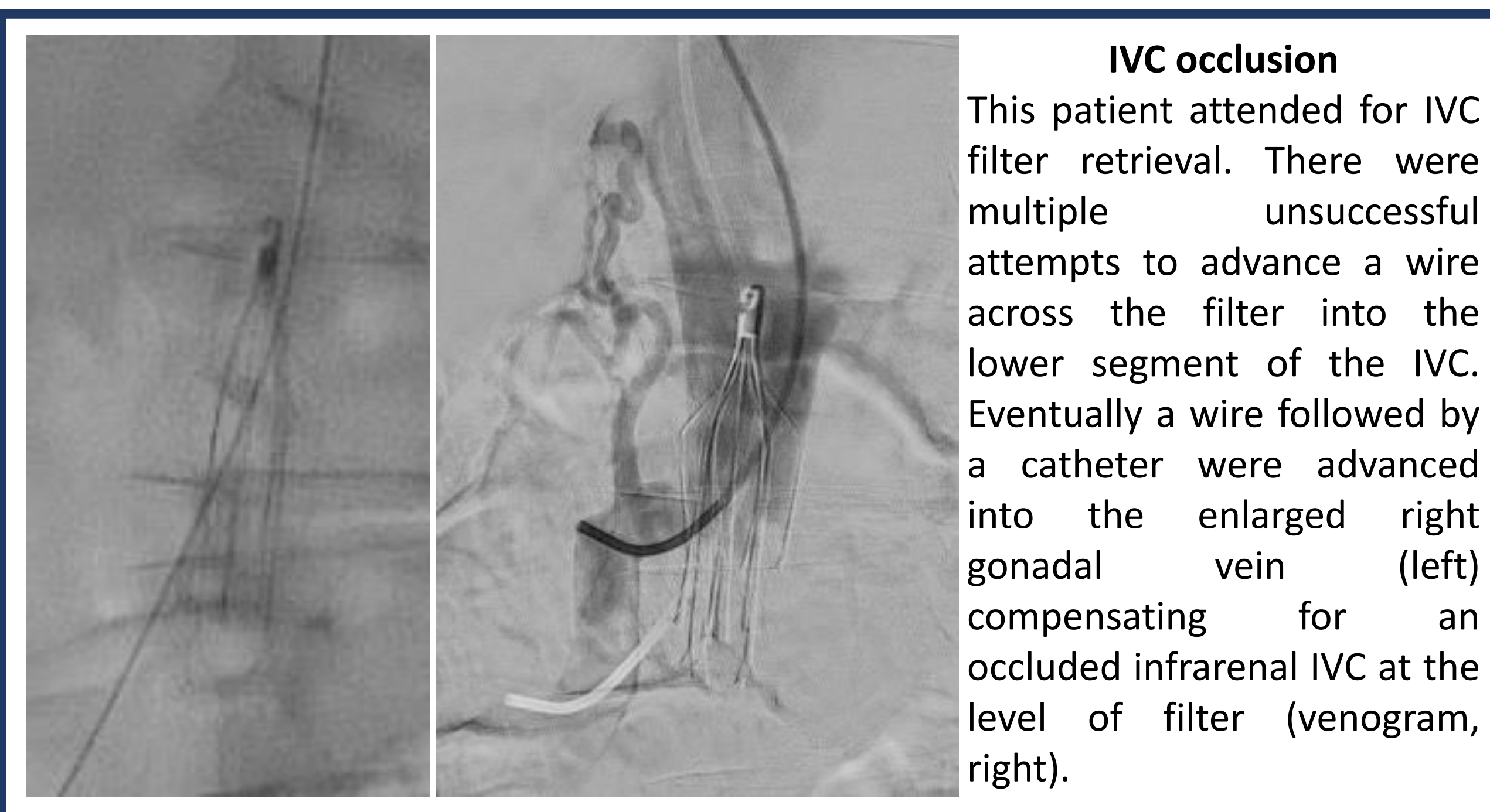
- Mean patient age was 61 years (range 15 to 92).
- 84/87 (96.6%) temporary IVC filter patients attended for retrieval (3/90 were excluded due to mortality within one-week post-insertion).
 - 71/84 (84.5% technical retrieval rate) were successfully retrieved (mean retrieval time 69 days, range 4-318 days).
 - 13/84 (15.5%) could not be retrieved: contraindications to retrieval (e.g. filter / IVC clot burden or procedure intolerance) in 9 patients, technical retrieval failure (e.g. embedded hook etc.) in 4 patients.
- 45/160 (28.1%) IVC filters were not included in the database, many of these were intended to be permanent, with 9/10 patients with filters of unclear intended dwell time not included in the registry.
- Lower mean time to retrieval was seen among the cases captured on the registry compared to the uncaptured cases (68 vs 76 days).
- A small number of patients had filter related complications e.g. IVC occlusion in 7/160 (0.4%).

Summary & further action plan

Our IVC filter registry remains successful. A higher proportion of patients with temporary IVC filters attended for retrieval, compared to the 2014-2017 cycle and significantly higher than before the registry had been implemented. Technical successful filter retrieval rate remains high with a low complication rate. Lower mean time to retrieval was seen among the cases captured on the IVC filter registry. However, a significant proportion of the patients were not captured on the registry, similar to the last cycle – this is being addressed by cross referencing IVC filter registry with PACS data on a monthly basis and by reinforcing operator awareness about the IVC filter registry. A re-audit will be conducted in due course.

References

1. The Royal College of Radiologists. (2025). AuditLive (Clinical radiology). Retrieved April 21, 2025, from <https://www.rcr.ac.uk/career-development/audit-quality-improvement/auditlive-radiology/attempted-retrieval-of-temporary-ivc-filters/>
2. Shah, A. H., Lichliter, A., & Cura, M. (2016). Inferior vena cava filter removal after prolonged dwell time of 2310 days. Proceedings (Baylor University. Medical Center), 29(3), 292–294. <https://doi.org/10.1080/08998280.2016.11929440>



Comparative indicator	2012-2014 (pre-registry)	2014-2017 (post-registry)	2018-2024 (post-registry)
Proportions attending for filter retrieval	71%	91%	96.6%
Patients not captured on IVC filter registry	NA	29.2%	28.1%