

Rigid Forceps Technique for Complex Inferior Vena Cava Filter Retrieval: a systematic review and meta-analysis

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Mei, T; Chen, JH; Zhang, L; Lu, YM; Zhang, YS.

Corresponding author:

Tong Mei

7703@enzemed.com

Author Affiliation:

Taizhou Hospital of Zhejiang Province affiliated to Wenzhou Medical University.

ADMINISTRATIVE INFORMATION**Support -** No.**Review Stage at time of this submission -** Preliminary searches.**Conflicts of interest -** None declared.**INPLASY registration number:** INPLASY202470127**Amendments -** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 31 July 2024 and was last updated on 31 July 2024.**INTRODUCTION**

Review question / Objective We searched MEDLINE, Cochrane and Pubmed from February 2006 to December 2023 for case series or clinical trials concerning complex IVC filter removal. Retrieval rate of filter, main complications and mortality are analysed.

Condition being studied Some centers have reported their initial experience about rigid forceps technique for complex Inferior Vena Cava (IVC) filter retrieval, but most of the current studies are single-center studies with small sample size. In addition, it is difficult to form a definite conclusion about the technical success rate, the rate of IVC injures and other complications and exposure time. Therefore, we performed this meta-analysis to evaluate the safety and outcome of rigid forceps technique for complex IVC filter retrieval.

METHODS

Search strategy The literatures search for relevant articles was performed using the following keywords alone and in combination: “endobronchial forceps”; “rigid forceps”; “rigid forceps”; “biopsy forceps”; “Inferior Vena Cava filter”; “complex filter removal”; “filter retrieval”; “filter removal”. Browse article abstracts, exclude irrelevant reports, select relevant literatures to download and read the full text. Check the related literature of the full-text literature similar literature and references to avoid omission.

Participant or population Patients IVC filters were successfully removed via rigid forceps technology when Standard methods were unpracticable between February 2006 and November 2023.

Intervention Rigid forceps technology was used when Standard methods were unpracticable.

Comparator No.

Study designs to be included Randomised control trials (RCTs), case series, case control series, cross sectional studies, cohort studies, prospective studies, retrospective studies.

Eligibility criteria The inclusion criteria for this Meta-Analysis included published original articles reporting more than 5 patients in whom complex IVC filters were removed using rigid forceps technique.

Information sources We searched the available literatures in Medline, Embase, Pubmed and Cochrane databases.

Main outcome(s) The technical success rate; major main complications rate, minor complications mortality and mortality are analysed.

Quality assessment / Risk of bias analysis The quality of included articles was assessed through the Newcastle-Ottawa guidelines.

Strategy of data synthesis The meta-analyses will be performed using both random effects models and fixed effects the chi-square based Q test and quantified using I² statistics. If I² statistics were >50%, heterogeneity was considered to be significant. The potential publication bias was appraised primarily by a funnel plot. An asymmetric plot suggests a likely publication bias. The funnel plot asymmetry was further evaluated using Egger's Test. Note Express and Excel software will be used. R statistical software packages R (<http://www.R-project.org>, The R Foundation).

Subgroup analysis No.

Sensitivity analysis We conduct the sensitivity analysis by excluding literature successively. When the system review contains >10 articles, the Egger test will be conducted to evaluate publication.

Language restriction English.

Country(ies) involved China.

Keywords Rigid Forceps Technique; Inferior Vena Cava Filter; Retrieval; meta-analysis.

Contributions of each author

Author 1 - Tong Mei - He designed extraction table, screened abstracts and extracted data from selected papers, analyzed the data and drafted the manuscript.

Email: 7703@enzemed.com

Author 2 - Jinhui Chen - He extracted data from selected papers, and trained members.

Email: chenjh6069@enzemed.com

Author 3 - Lan Zhang - He extracted data from selected papers, helped with the manuscript.

Email: 8850@enzemed.com

Author 4 - Yongming Lu - He designed this study, quality control and modified this paper, helped with the manuscript.

Email: luym@enzemed.com

Author 5 - Yuansu Zhang - He designed this study, quality control and modified this paper, corresponding author.

Email: zhangys9848@enzemed.comauthor