

# Outcomes and associated factors in malpractice litigation involving inferior vena cava filters



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## ABSTRACT

**Objective:** Placement of inferior vena cava (IVC) filters is a controversial focus of medical malpractice. Clinicians currently have little information to guide them regarding key issues and outcomes in litigation. In this retrospective legal case review, we analyzed the factors associated with malpractice actions involving IVC filters.

**Methods:** The legal databases LexisNexis and Westlaw were searched from 1967 to 2016 for all published legal cases in the United States involving placement of IVC filters. Keywords included "IVC," "inferior vena cava," "filter," and "malpractice." Social Security Disability claims, product liability actions, and hospital employment contract disputes were excluded.

**Results:** There were 310 search results eligible for initial review. After application of exclusion criteria, 29 cases involving medical malpractice were included in final analysis. The majority of excluded cases were insurance disputes and tax revenue cases. Overall, private practitioners were most often sued (11/29 [37.9%]), whereas 24.1% of defendants were academic hospitals (7/29), 20.7% were prisons (6/29), and 17.2% were community hospitals (5/29). The most common specialty named was vascular surgery (8/29), whereas interventional radiologists were named only twice. The most common indications for IVC filter placement were hypercoagulable state (8/29 [29.6%]), recurrent pulmonary embolism (PE; 6/29 [22.2%]), and trauma (5/29 [18.5%]). The most common underlying allegations involved failure to insert IVC filter when indicated (14/29 [48.3%]), intraprocedural negligence (5/29 [17.2%]), and failure to timely remove device (5/29 [17.2%]). Common complications included failure to prevent occurrence of PE (14/29 [48.3%]), device migration (4/29 [13.8%]), and perforation of organs or vasculature (3/29 [10.3%]). Death of the patient occurred in 41.4% of total cases (12/29). In cases in which the patient died, the most common indications for filter placement were trauma (4/12 [33.3%]) and deep venous thrombosis (3/12 [25.0%]), and the most common complication in those patients who died was the failure to prevent a subsequent PE (9/12 [75.0%]). Available verdicts favored defendants (13/14 [92.9%]). In cases with defense verdicts, the most common indications for filter placement similarly were trauma (4/13 [30.8%]) and deep venous thrombosis (3/13 [23.1%]), and the most common complication was failure to prevent PE (9/14 [64.3%]).

**Conclusions:** Analysis of malpractice cases involving IVC filters revealed key factors associated with litigation. Overall, verdicts favored defendants. Private practitioners were most commonly sued, and the most common reasons for bringing suit were failure to insert filter, intraprocedural complications, and failure to remove filter. Deeper awareness of issues related to malpractice litigation can inform clinical practice and improve patient care and safety. (*J Vasc Surg: Venous and Lym Dis* 2018;6:541-4.)

**Keywords:** Inferior vena cava filter; IVC filter; Malpractice; Litigation

Inferior vena cava (IVC) filters are an established therapeutic option in the management of venous thromboembolism in select patients for whom medical anticoagulation is inappropriate.<sup>1</sup> More recently, changes in technology including the introduction of retrievable filters have contributed to an upswing in the placement

of IVC filters. This expansion in IVC filter use has occurred despite residual questions about its retrieval rates, extended indications for placement, long-term safety, and relative efficacy and utility.<sup>2-5</sup>

In this context, there appears to be wide geographic variation in IVC filter use, a phenomenon that cannot be sufficiently explained by clinical factors. It has been suggested that clinicians' concerns about medicolegal liability play a role in IVC filter-related decision-making.<sup>6</sup> Such concerns have been piqued in part by the increased public solicitation of malpractice lawsuits in the media in the wake of the 2010 U.S. Food and Drug Administration communication regarding the morbidity and mortality associated with IVC filters.<sup>6-8</sup>

Despite these concerns, clinicians currently have little information to guide them regarding key issues and outcomes in litigation related to IVC filter use. In this retrospective legal case review, we analyzed the factors associated with malpractice actions involving IVC filters.

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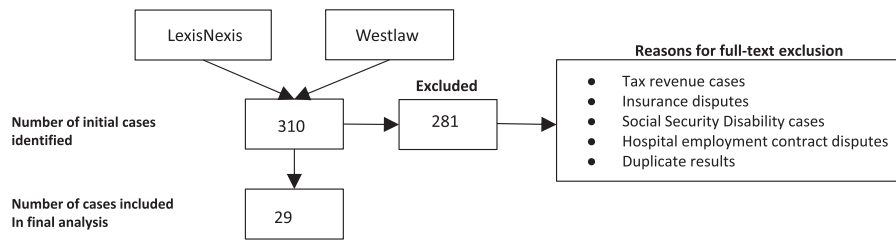
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**Fig.** Flow chart of search methodology.

## METHODS

This study examined malpractice cases involving IVC filter placement that proceeded to trial. The national legal databases LexisNexis and Westlaw were searched from 1967 to 2016 for all published federal and state cases in the United States involving placement of IVC filters (Fig). These databases routinely archive malpractice cases litigated in the state and federal courts and are the two largest legal databases in the United States. In addition, the databases maintain law reviews from more than 800 journals and U.S. Supreme Court decisions.

Keywords included "IVC," "inferior vena cava," "filter," and "malpractice." Social Security Disability claims, product liability actions, and hospital employment contract disputes were excluded.

## RESULTS

There were 310 search results eligible for initial review. After application of exclusion criteria, 29 cases involving medical malpractice were included in final analysis and were identified in both databases. The majority of excluded cases were insurance disputes and tax revenue cases.

The most represented jurisdiction was New York (6/29), followed by Ohio (5/29) and Pennsylvania (3/29). Overall, private practitioners were most often sued (11/29 [37.9%]). Academic centers were the second most common defendant type (24.1% [7/29]), followed by prisons (20.7% [6/29]) and community hospitals (17.2% [5/29]). The most common specialty named was vascular surgery (8/29), whereas interventional radiologists were named only twice. Twelve patients were female (41.4%), and 17 were male (58.6%).

The most common indications for IVC filter placement were hypercoagulable state (8/29 [29.6%]), recurrent pulmonary embolism (PE; 6/29 [22.2%]), and trauma (5/29 [18.5%]). The most common underlying allegations involved failure to insert IVC filter when indicated (14/29 [48.3%]), intraprocedural negligence (5/29 [17.2%]), and failure to timely remove device (5/29 [17.2%]). Common complications included nonprevented PE (14/29 [48.3%]), device migration (4/29 [13.8%]), and perforation of organs or vasculature (3/29 [10.3%]).

Death of the patient occurred in 41.4% of total cases (12/29). In cases in which the patient died, the most common indications for filter placement were trauma (4/12 [33.3%]) and deep venous thrombosis (DVT; 3/12 [25.0%]), and the most common complication was nonprevented PE (9/12 [75.0%]).

Where available, a majority of verdicts favored defendants (13/14 [92.9%]). In cases with defense verdicts, the most common indications for filter placement similarly were trauma (4/13 [30.8%]) and DVT (3/13 [23.1%]), and the most commonly cited complication was failure to prevent PE (9/14 [64.3%]).

## DISCUSSION

Public awareness of IVC filters has increased in recent years, fueled in part by media coverage and legal advertisements targeting potential plaintiffs with related complications.<sup>6</sup> For example, Ahmed et al<sup>9</sup> recently noted that the number of unique Google searches for "IVC filter lawsuit" rose from 100 in 2012 to 10,000 in 2015. Despite this increased scrutiny, very little is known about the actual number of IVC filter-related malpractice lawsuits and outcomes of existing litigation.

To that end, this study represents the most comprehensive analysis to date of malpractice litigation and IVC filter use. In total, 29 malpractice cases were identified. Of these, 14 had reached verdict, whereas the others represent ongoing litigation at the time of this analysis. Although there remain cases that have yet to go to trial or that have settled out of court, this study indicates that the total number of cases is lower than the level of public scrutiny would suggest. Overall, a majority of verdicts favored defendants. Private practitioners were most commonly sued, and the most common reasons for bringing suit were failure to insert filter, intraprocedural complications, and failure to remove filter.

In cases in which IVC filter fracture was implicated, the severity of such fracture was not able to be specified. However, the Greenfield filter (Boston Scientific, Marlborough, Mass) was explicitly named in four cases. Moreover, the organs that were damaged with filter perforation were identifiable, but we chose to group perforation as a single complication for the purposes of intercomplication comparison.

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