Perforation of Inferior Vena Cava by Inferior Vena Cava Filter

Sarah Unterman, MD*
Tad Nair, MD†

* Jesse Brown VA Medical Center, Department of Emergency Medicine, Chicago, Illinois
† University of Illinois at Chicago, Department of Internal Medicine, Chicago, Illinois

Supervising Section Editor: Sean O. Henderson, MD
Submission history: Submitted June 13, 2012; Accepted August 6, 2012
Full text available through open access at http://escholarship.org/uc/uciem_westjem
DOI: 10.5811/westjem.2012.8.12795
[West J Emerg Med 2013;14(2):161-162.]

A 46-year-old male with diabetes, hypertension, and a history of pulmonary embolism (status post placement of a retrievable Celect inferior vena cava [IVC] filter) presented to the emergency department with progressively worsening abdominal pain for 1 month. Physical exam was consistent with right upper quadrant and right lower quadrant abdominal pain and tenderness, without rebound or guarding, and with stable vital signs. A computed tomography (CT) of the abdomen was performed.

CT demonstrated that multiple struts of the IVC filter were located outside the lumen of the inferior vena cava, suggestive of chronic perforation with no evidence of free fluid or hematoma in the abdomen. IVC perforation from removable filters is relatively common, and directly related to how long the filter has been in place.[1] One study noted an 86% perforation rate overall, with all filters imaged after 71 days revealing some level of perforation.[1] This patient's IVC filter had been in place for four and a half months. Complications of IVC filters include filter migration, tilting, strut fracture, strut perforation, and IVC thrombosis.[2] Most strut perforations are discovered incidentally.[2]

The patient's pain was later attributed to cholecystitis based upon his laboratory and imaging study results. The patient subsequently had the IVC filter removed by interventional radiology, and a new filter was placed without complications.

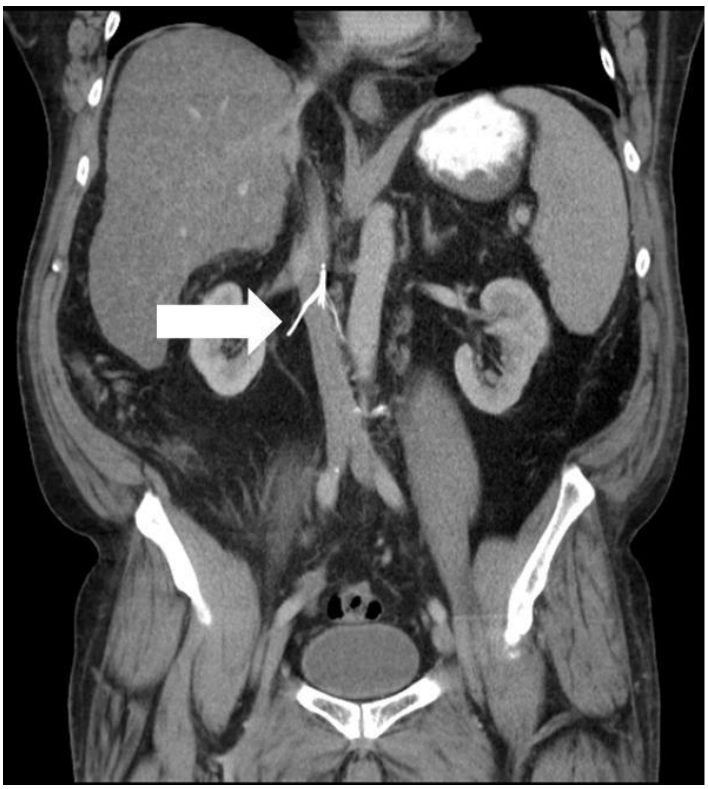

Figure 1. Coronal view of a inferior vena cava (IVC) filter with strut visible outside the IVC.

Figure 2. Sagittal view of a inferior vena cava (IVC) filter with strut visible outside the IVC.

Address for Correspondence: Sarah Unterman, MD, Jesse Brown VA Medical Center, 820 South Damen Avenue, Chicago, IL 60612. Email: sunter1@gmail.com

Conflicts of Interest: By the *West*JEM article submission agreement, all authors are required to disclose all affiliations, funding sources and financial or management relationships that could be perceived as potential sources of bias. The authors disclosed none.

REFERENCES

1. Durack JC, Westphalen AC, Kekulawela S, et al. Perforation of the IVC: rule rather than exception after longer indwelling times for the Günther Tulip and Celect retrievable filters. *Cardiovasc Intervent Radiol*. 2012 Apr;35(2):299-308.
2. Kappa SF, Morgan TM, Keegan KA, et al. Inferior vena cava filter strut perforation discovered during right robotic-assisted laparoscopic partial nephrectomy. *Urology*. 2012 Apr;79(4):e49-50.