

Natural history of an intra-aortic permanent inferior vena cava filter

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Intra-aortic inferior vena cava (IVC) filter insertion is rare complication, and its natural history is unknown. We present a unique case of an intra-aortic permanent IVC filter remaining asymptomatic 16 years after its placement.

A 62-year-old man presented with partial bowel obstruction. He had a history of bilateral leg deep vein thrombosis and was receiving life-long warfarin since his subtotal colectomy with end-ileostomy for ulcerative colitis, 16 years prior at a community hospital. An IVC filter had been placed during that admission. Other comorbidities included morbid obesity and chronic cardiac, pulmonary, and kidney disease.

On non-contrast computed tomography, a permanent stainless steel Greenfield filter was observed at the infrarenal aorta. The patient was treated conservatively, and, once his clinical condition improved, a computed tomographic angiogram was obtained that showed the absence of thrombus within the filter (*A/Cover*) and incorporation of the hooked struts in the aortic wall, without evidence of perforation (*B* and *C*). On abdominal radiography 10 years prior, retrieved from an outside hospital, there had been no appreciable migration of the filter (*D*). The patient had remained asymptomatic from the filter without pain or signs of distal embolization. Because of his comorbidities, the incorporation of the filter in the aortic wall, and related risks of aortic dissection or perforation with endovascular manipulations, a conservative approach was taken.

DISCUSSION

Intra-aortic IVC filter placement is rare, with only three cases reported in the literature. Because of the unknown natural history,¹ in two cases the filter was retrieved early after its insertion,^{1,2} whereas in one case it was manipulated distally and followed with duplex ultrasound for 24 months and clinically for an additional 2 years.³ Although this is a single case, it provides the only available long-term imaging and clinical evidence supporting a benign course of an intra-aortic IVC filter. Potential complications such as migration, wall perforation, thrombus formation, distal embolization, and strut fatigue may still occur. However, the aortic wall is much stronger than the IVC wall, and the high arterial flow may prevent thrombus formation, which could explain the findings in this case.

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