Case Report

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The migrating filter: Inferior vena cava to superior vena cava

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A 75-year-old male with past medical history significant for severe chronic obstructive pulmonary disease was admitted to the intensive care unit with respiratory failure. He was found to have an acute deep venous thrombosis (DVT) and pulmonary embolus (PE). A permanent vena cava filter was deployed in the infrarenal inferior vena cava (IVC) at L3 level. A new cavogram confirmed the position of the filter in the inferior vena cava with tip of the filter at the level of the inflow of the left renal vein. Thirty minutes post placement, a routine chest x-ray revealed migration of the filter into the superior vena cava (Figure 1). Unsuccessful attempts were performed to remove the filter through the right internal jugular vein. The patient remained asymptomatic with stable vital signs, no pain or distress. It was elected to leave the migrated inferior vena cava filter in the superior vena cava.

Discussion

Inferior vena cava filter has been used in clinical practice for over 40 years for patients with DVT, PE or to prevent PE. (1) Most of the time the benefits of an IVC filter outweighs the risks associated with its insertion. Complications related to the device are rare but could be fatal including: filter migration, malposition, fracture, infection, IVC perforation, and failed deployment. (2) IVC filter migration is defined as 1 cm change in position compared with the immediate post placement film, (3) it accounts for 1.5% of the reported complications. The most common sites for migration include the right atrium and ventricle, tricuspid valve and pulmonary artery. (4) To our knowledge, there are no published reports of migration of the filter to the superior vena cava (SVC).

Symptoms range from none to fatal cardiac arrhythmia, cardiac tamponade, chest pain and hypotension. Though reports exist of leaving the migrated filter in its place in the asymptomatic patient, this may carry a mortality rate of 50%. (5) Treatment mostly consists of either endovascular or open surgical retrieving of the filter. (4,5)

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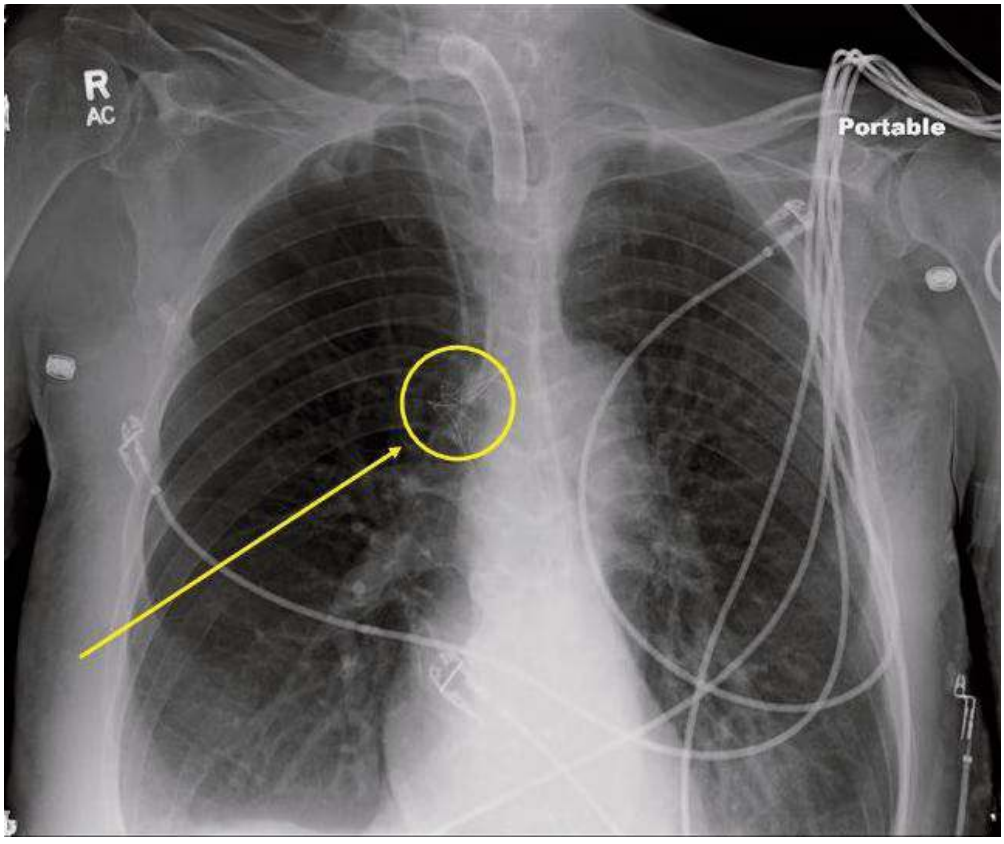
Figure 1. Migration of the filter into the superior vena cava



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