CLINICAL VIGNETTE

Sixty-four slice computed tomography for the diagnosis of multiple intra-thoracic metallic bodies

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A 79-year old patient was referred to our intensive care unit for an inferior myocardial infarction. He mentioned that he was formerly operated for a right iliac aneurysm and that intervention was complicated by a deep venous thrombosis treated with oral anti-coagulant. To complete work up, a coronary angiography was performed and during this exam, opaque foreign bodies were visualized in the heart area (moving with beatings of the heart) and in projection of the right pulmonary area (Panel A). Report of the previous hospitalization was requested and revealed that the patient underwent a vena cava filter insertion (B. Braun/VenaTech, Evaston, IL) at time of diagnosis of deep venous thrombosis.

A 64-slice computed tomography was performed to clarify these images and showed a totally broken up filter with six dissociated struts of the filter, five struts in the right ventricle (RV) and one strut in the right pulmonary artery (RPA) (Panel D).

Vena cava filters are indicated in deep venous thrombosis only for contra-indications to anticoagulants or failure of the anticoagulant treatment. They are small cone-shaped effective devices designed to prevent pulmonary embolism by trapping blood clots in the vena cava. However, serious complications including recurrent embolism, thrombus formation above the filter but also migration may occur. In our case, associated with the migration, a rupture of the site where the struts of the filter are connected occurred. We postulate that the filter moved from the vena cava to the right ventricle and that it was totally broken up as a consequence of repeated right ventricular contractions.

Removal of these broken parts of the filter by a trans-cutaneous catheter may be complicated by serious tricuspid regurgitation if cordae tendineae are damaged. As the patient remained free of symptoms, it was decided to treat him definitively with oral anti-coagulant to avoid clots formation on the struts. Patient is free of symptoms at 9 months follow-up.

Panel A. Opaque foreign bodies (arrows) visualized on chest area during coronary angiography.
Panel B. Chest X-ray: frontal incidence showing a foreign body (arrow) in the region of the right lung.
Panel C. Echocardiography (subcostal view) showing a strut (arrow) in the right ventricle (RV).
Panels D–F. Chest multi-slice computed tomography showing the six dissociated struts in the right ventricle (RV) and in the right pulmonary artery (RPA).

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