Defibrillator lead endocarditis

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A 47-year-old female with a history of left pectoral dual-chamber implantable cardioverter-defibrillator (ICD) insertion in her early 30s for syncopal ventricular tachycardia presented with several weeks of shortness of breath and general malaise. Salient history included ICD and lead removal 5 years ago in the setting of near cutaneous extrusion with insertion of a new ventricular lead and generator on the contralateral side. Examination revealed fever, hypoxia, no evidence of right pectoral pocket infection, and a pansystolic cardiac murmur without signs of heart failure. Initial blood cultures grew staphylococcus epidermidis and transthoracic echocardiography demonstrated a mobile mass attached to the right ventricular ICD lead. Computed tomography pulmonary angiogram revealed bilateral filling defects due to septic pulmonary emboli. Transoesophageal echocardiogram with 2D and 3D imaging confirmed a giant vegetation (2.7 × 2.9 cm) attached to the ICD lead which prolapsed from the right atrium through the tricuspid valve (Panels A–C; see Supplementary data online, Video S1). Given persistent bacteraemia and the size of the vegetation, midline sternotomy and cardiac bypass facilitated opening of the right atrium for successful wire and vegetation removal (Panel D). Despite advances in cardiac device design and infection control practices, serious infections continue to occur with an incidence of ≏1.9/1000 device years. Risk factors for device infection include diabetes mellitus, previous generator replacement, renal impairment, anticoagulation, procedural factors, and staphylococcus bacteraemia. Therapeutic options include percutaneous lead extraction or surgery. Following a protracted course of intravenous antibiotics, a third device was inserted with new leads and she remains well at 6-month follow-up.

Supplementary data are available at European Heart Journal – Cardiovascular Imaging online.

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