

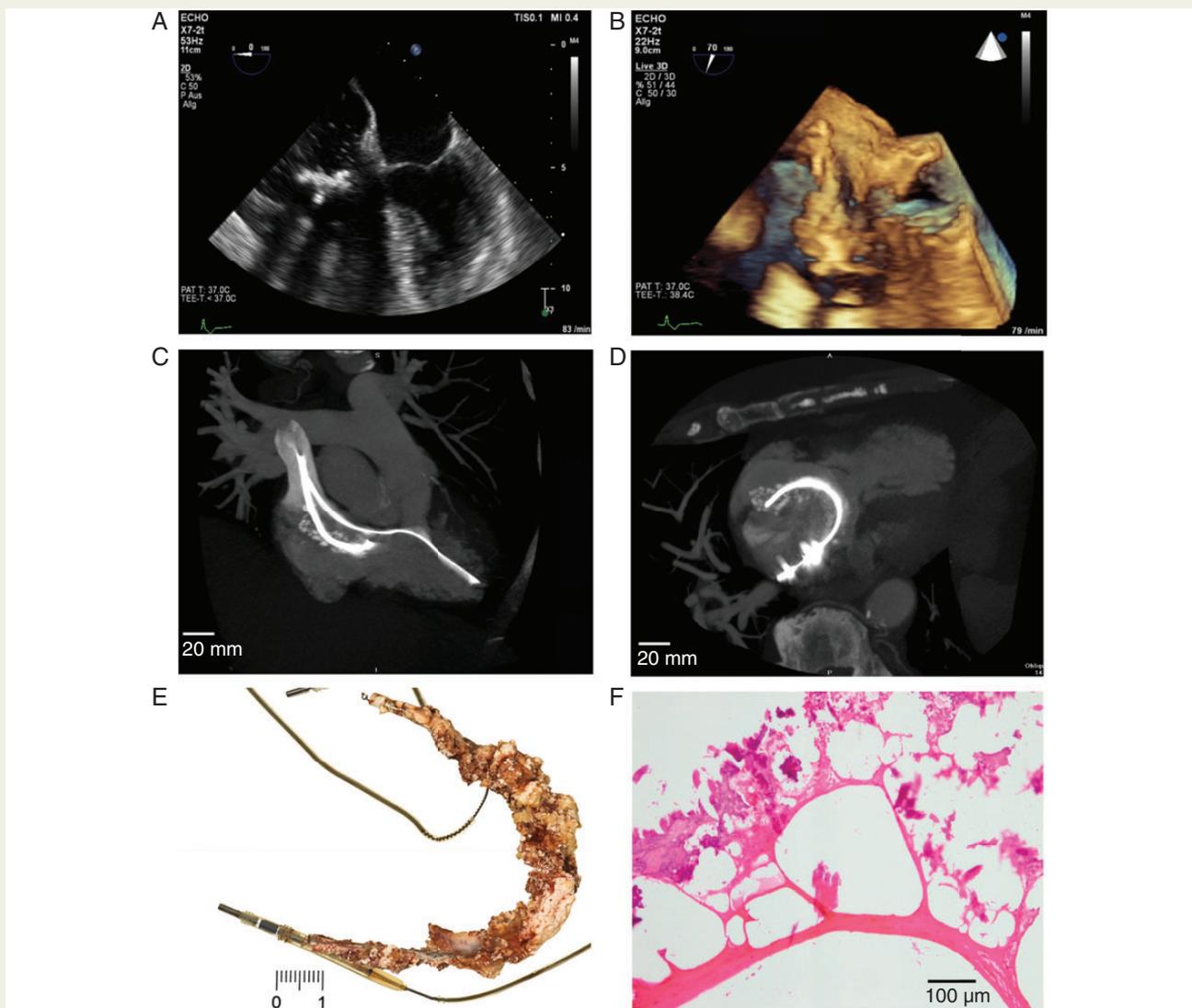
## The unusual case of floating bone in the heart

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A 73-year-old woman first presented with heart failure, symptom class NYHA III, and fatigue that had gradually worsened over the course of 2 years despite medical outpatient therapy. She had a history of second-degree and intermittent third-degree atrioventricular (AV) block that led to the implantation of a two-chamber pacemaker in 1997. A new device was implanted in 2011 due to impeding battery exhaustion. Transthoracic echocardiography at that time was normal. When repeated in 2016, transthoracic echocardiography revealed severe tricuspid valve stenosis. Further evaluation with transoesophageal echocardiography (see Supplementary material online, *Video S1* and *Panels A and B*) and cardiac computed tomography (*Panels C and D*) showed impingement of the right ventricular inflow tract caused by tricuspid valve calcification and calcification of the right atrial (RA) pacemaker lead. In addition, the location of the calcified RA lead in close vicinity to the tricuspid valve was highly unusual as its tip was located at the dorsomedial part of the right atrium with a minimal distance to the valve of below 5 mm (*Panel D*). After open-heart surgical removal of all leads, implantation of an artificial



tricuspid valve and implantation of an epicardial pacemaker with atrial and ventricular leads, the patient regained normal functional status. Histological evaluation of the tissue surrounding the explanted right atrial lead showed sclerosis, calcification, and metaplastic ossification (see Supplementary material online, *Figures S1–S3* and *Panels E* and *F*). Metaplastic ossification is a rare complication of local inflammatory processes and might have been caused by subclinical endoplasititis involving the right atrial lead in this patient which subsequently led to severe functional tricuspid valve stenosis.

(A) 2D-transoesophageal echocardiography, mid-oesophageal four-chamber view showing a calcified pacemaker lead in close vicinity to the tricuspid valve. (B) 3D-transoesophageal echocardiography, right atrial focused mid-oesophageal short-axis view showing the echo-dense structure surrounding the right atrial pacemaker lead impeding the right ventricular inflow path. (C and D) Multi-slice cardiac CT images showing right atrial and ventricular pacemaker leads (C) with severe calcification as well as the unusual location of the right atrial lead (D) in close vicinity to the tricuspid valve. (E) Right atrial pacemaker lead after surgical removal showing significant deposit of the material. (F) Histology (haematoxylin–eosin staining) of the deposits showing metaplastic ossification.

Supplementary material is available at *Europace* online.