Coexistence of arrhythmogenic right ventricular cardiomyopathy and coronary artery disease in a patient with ventricular tachycardia: a highly unusual combination

A middle-aged patient with arterial hypertension and dyslipidaemia presented with a 10-year history of recurrent sustained monomorphic ventricular tachycardia (VT) provoked by exertion or emotional affect (figure 1A). He had been treated with propafenone and amiodarone. Four years before, the standard 12-lead and modified Fontaine ECG in sinus rhythm were normal, as was the echocardiogram. VT of different morphology was reproducibly induced and terminated with programmed right ventricular (RV) pacing (figure 1B). Coronary angiography showed three-vessel coronary artery disease (figure 2A,B). The operator thought this was the cause of the VT and implanted three intracoronary stents. RV angiography was not performed. Treatment with amiodarone was continued.

Three years later, after the drug had been stopped because of corneal deposits, the patient had VT recurrences. Cardiac MRI investigation showed a normal left ventricle, severely dilated RV with fibro-fatty infiltration and thinning of the wall, large RV free wall aneurism, and smaller RV outflow tract aneurism

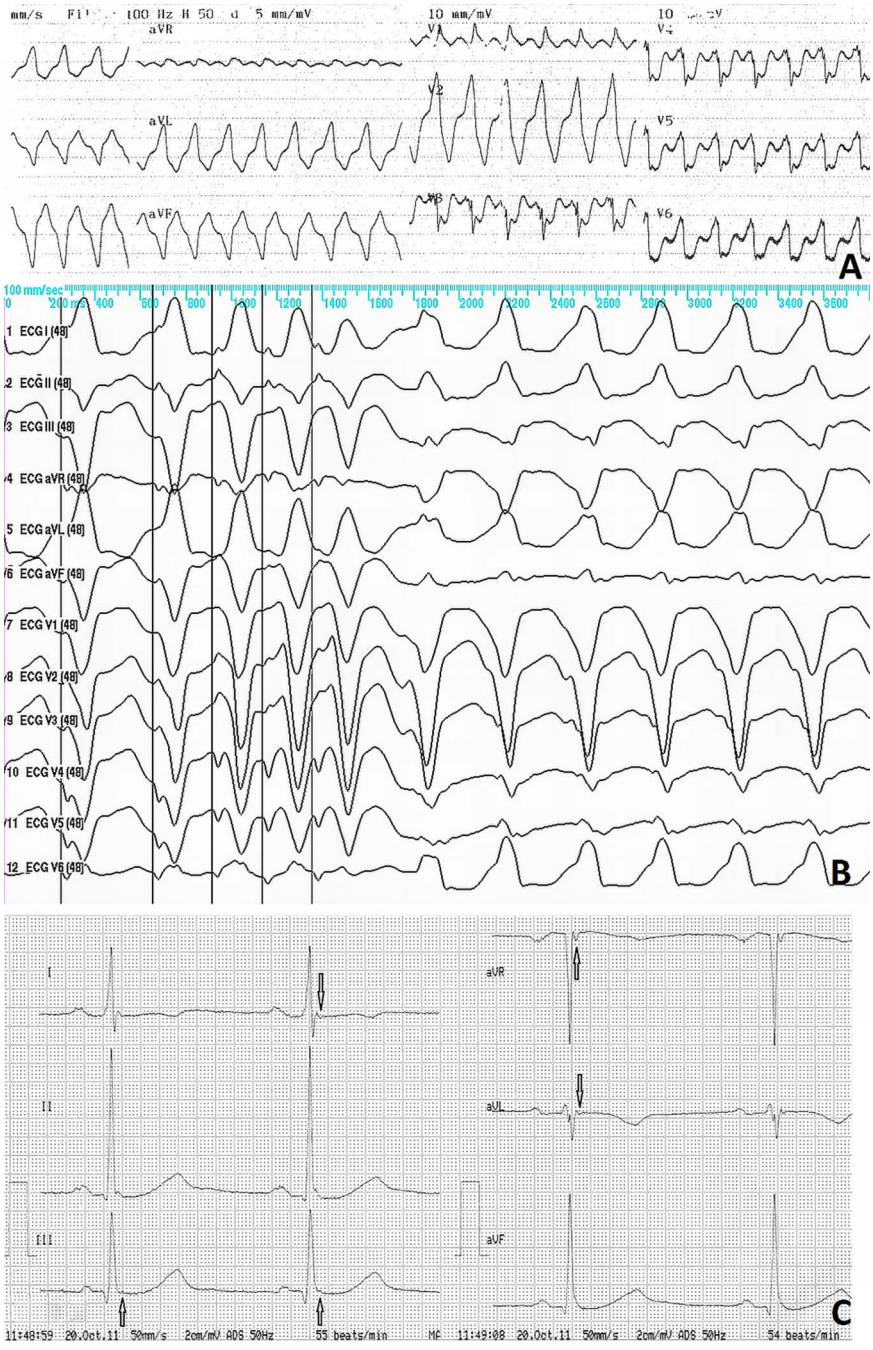

Figure 1 (A) The clinical ventricular tachycardia (VT). Note that the morphology is right bundle branch block and is unusual for a VT of right ventricular origin. (B) Induction of sustained monomorphic VT of left bundle branch block morphology, left superior axis, typical of a VT associated with arrhythmogenic right ventricular cardiomyopathy. (C) Epsilon waves (arrows) on modified Fontaine ECG leads.

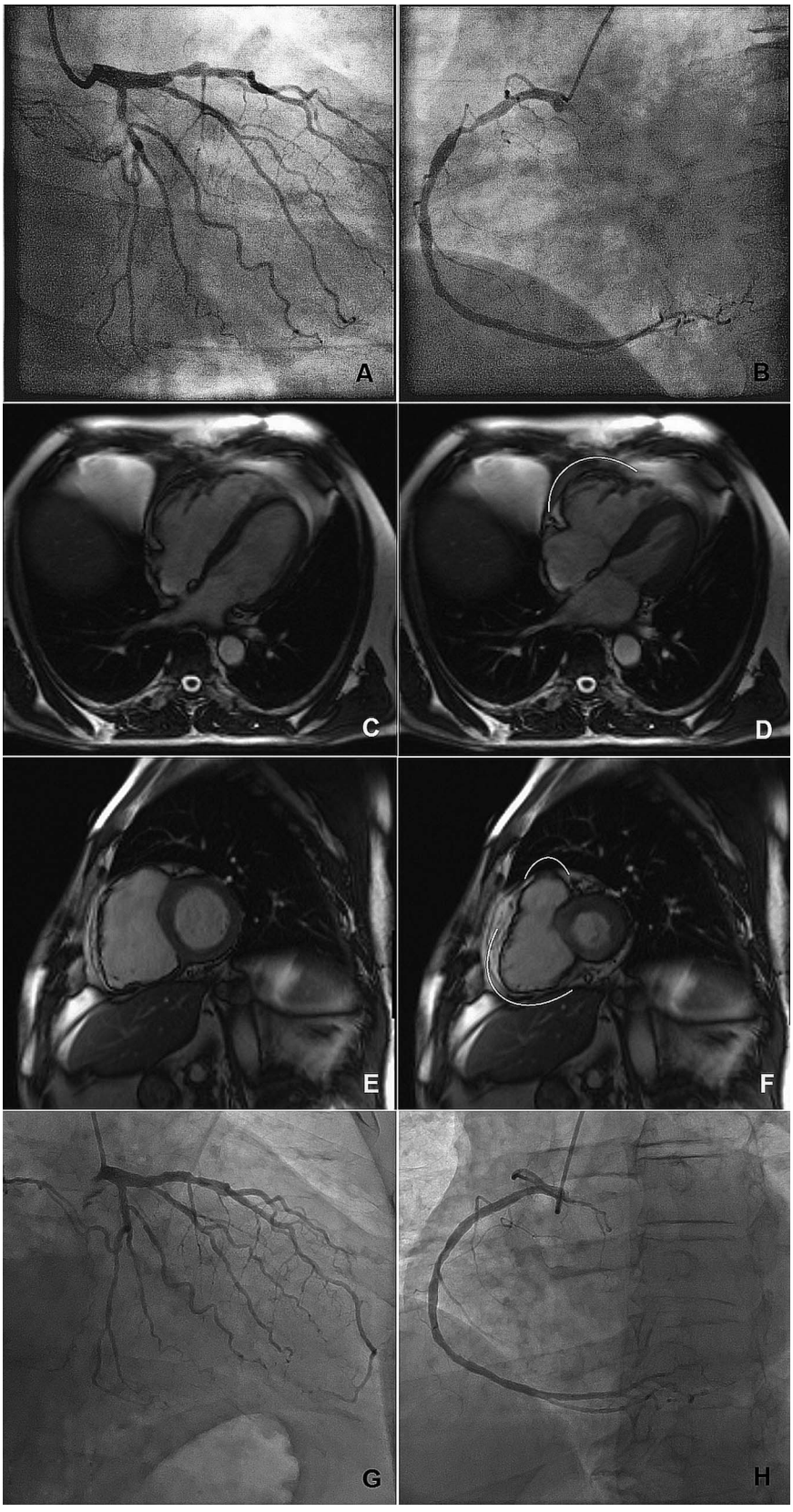

Figure 2 (A) Left coronary artery before stenting. (B) Right coronary artery before stenting. (C) Cardiac MRI in diastole, four-chamber view. (D) Cardiac MRI in systole, four-chamber view, showing large right ventricular (RV) basal lateral aneurism (white curve). (E) Cardiac MRI in diastole, two-chamber view. (F) Cardiac MRI in systole, two-chamber view, showing large aneurism on the RV acute margin and a smaller one in the RV outflow tract (white curves). (G) Left coronary artery 3 years after stenting; (H) right coronary artery 3 years after stenting.

(figure 2C–F). A new modified ECG showed epsilon waves (figure 1C). The diagnosis of arrhythmogenic RV cardiomyopathy was accepted as definite.[1] A new coronary angiography did not show in-stent restenosis or new coronary lesions (figure 2G, H). The RV angiography confirmed the MRI findings and found a small apical aneurism as well (see online supplementary videos 1 and 2). A cardioverter-defibrillator was implanted.

This case underscores the importance of cardiac imaging in patients with VT and shows that the combination of two heart conditions that could cause VT is not impossible.

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