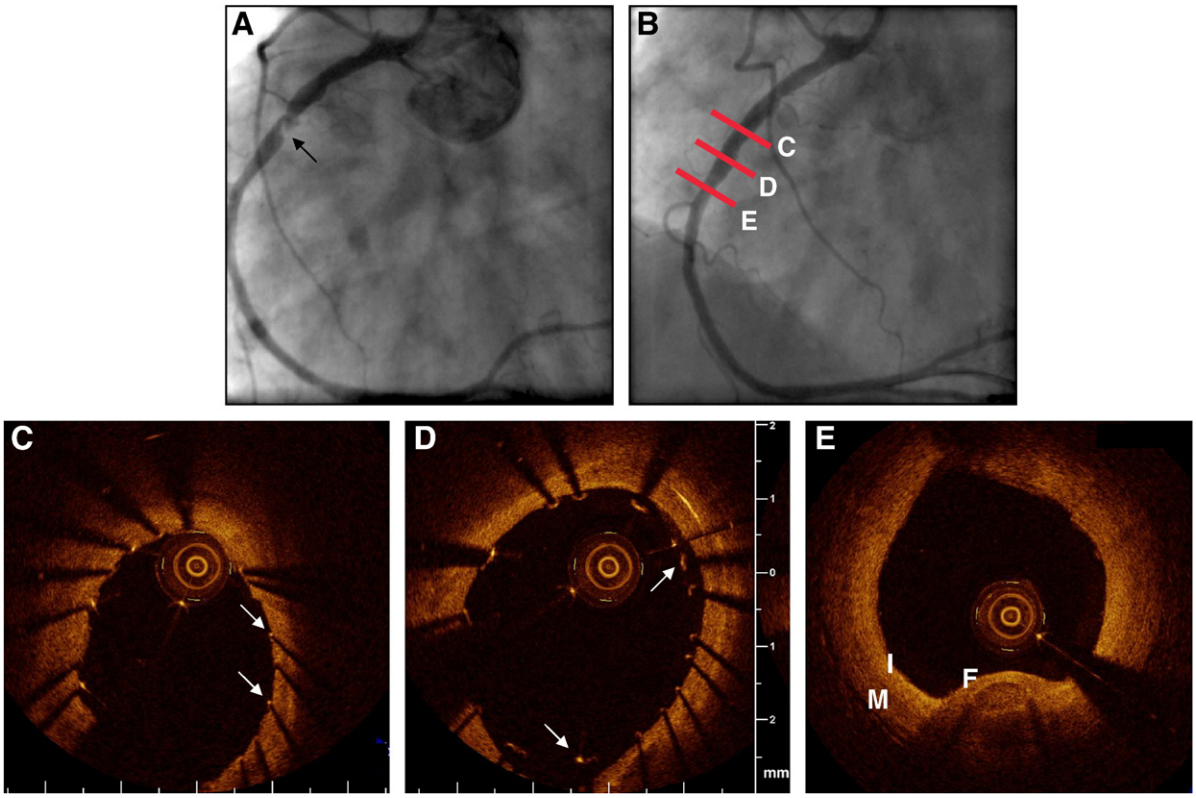

Fig. 1. Right coronary artery imaged with Optical Coherence Tomography (OCT, Lightlab Imaging Inc, Westford, MA, USA) following stenting using a 3.5 × 15 mm bare metal stent. A. Proximal 90% isolated eccentric lesion pre-treatment (indicated by arrow). (Coronary angiography LAO view). B. Angiographic appearances following stenting and high pressure balloon inflation. Horizontal lines, C–E indicate levels at which OCT images taken (LAO view). C. OCT image at C. Stent struts (arrows) appear well apposed to the vessel wall. D. OCT image at D. Stent struts (arrows) appear poorly apposed and distinct from vessel wall, despite satisfactory angiographic appearance. E. OCT image at E. Vessel distal to stent, with minimal angiographic irregularity. Intima (I), media (M) and atherosclerotic plaque with fibrous cap (F) readily visualised.

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QRS complex abnormalities in subjects with idiopathic ventricular fibrillation

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Idiopathic ventricular fibrillation (IVF) is defined as spontaneous ventricular fibrillation in the absence of any identifiable known cardiac or extracardiac abnormality responsible for arrhythmic events [1]. Recently, a high incidence of early repolarization (ER) has been demonstrated in patients with IVF [2–5]. Previous studies have shown that subjects with ER may also exhibit initial QRS abnormalities resembling the classic delta-wave of Wolff–Parkinson–White (WPW) syndrome [6]. The present study aimed to evaluate the prevalence of specific QRS complex morphologic features in subjects with IVF.

Clinical data from 11 consecutive Caucasian individuals with structurally normal hearts and IVF were retrospectively analyzed. Primary electrical diseases including the long QT syndrome (based on QTc intervals >450 ms in males and >470 ms in females), the short QT syndrome (based on QTc intervals <360 ms), the Brugada syndrome [based on the characteristic ECG pattern (coved or saddle-back ST-segment configuration) in right precordial leads (V_1 to V_3)] and the catecholaminergic polymorphic ventricular tachycardia (based

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Table 1
Clinical and electrocardiographic data of patients with idiopathic ventricular fibrillation (IVF) and control population.

Variables	IVF ($n=11$)	Control population ($n=101$)	p value
Age (years)	38.45 ± 9.33	41.30 ± 13.45	0.496
Gender (males)	4 (36.4%)	35 (34.7%)	0.576
Initial QRS complex abnormalities	4 (36.4%)	9 (8.9%)	0.023
Terminal QRS complex abnormalities	3 (27.3%)	13 (12.9%)	0.192
PR interval in lead II (ms)	154.72 ± 20.06	149.55 ± 18.98	0.395
QRS complex duration in lead II (ms)	90.72 ± 9.01	94.02 ± 9.37	0.268
QTc interval in lead II (ms)	417.54 ± 12.19	416.41 ± 20.94	0.860
R-wave amplitude in lead V5 (mV)	1.42 ± 0.50	1.25 ± 0.35	0.144
R-wave amplitude in lead V6 (mV)	1.09 ± 0.36	1.01 ± 0.28	0.384

on ventricular tachycardia during exercise test) were excluded. All patients received an implantable cardioverter defibrillator (ICD). The following clinical data were collected: age at IVF event, gender, and family history of sudden cardiac death (SCD). Baseline electrophysiological study (EPS) was performed in four IVF cases. During follow-up, patients were considered to have had an arrhythmic event in case of SCD, ventricular tachycardia/fibrillation or appropriate ICD shock.

One hundred and one age- and gender-matched healthy individuals who underwent EPS for palpitations were included in the study, and served as comparative controls. Inclusion criteria for control subjects were (i) the absence of structural heart disease; (ii) a negative history of syncope; and (iii) the absence of an accessory pathway during EPS. The study was approved by the medical ethical review committee and informed consent was obtained from all subjects.

Twelve-lead ECGs were recorded at a paper speed of 50 mm/s with an amplification of 10 mm/mV. The following ECG parameters were evaluated: (i) the presence of initial QRS complex abnormalities (slurring or notching within the initial 40 ms of the ascending limb of the R-wave) that resemble a "pseudo" delta-wave in at least two contiguous leads; (ii) the presence of terminal QRS complex abnormalities resembling the ER pattern defined as slurring or notching of the terminal part of the QRS complex (J-point), irrespective of the amplitude, in at least two contiguous leads; (iii) the PR interval, the QRS duration and the corrected QT (QTc) interval (Bazett's formulae) in lead II; and (iv) the R-wave amplitude in leads V_5 and V_6. All measurements were performed by two independent cardiologists who were aware of the diagnosis. When measurements were not identical, the mean of the values was calculated.

The SPSS software package (Version 13.0 for Windows, Inc, Chicago, Illinois, USA) was used for statistical analysis. Data are expressed as mean values $\pm$ standard deviation. Categorical data were analyzed by the Fisher's exact test. The mean differences between study groups were

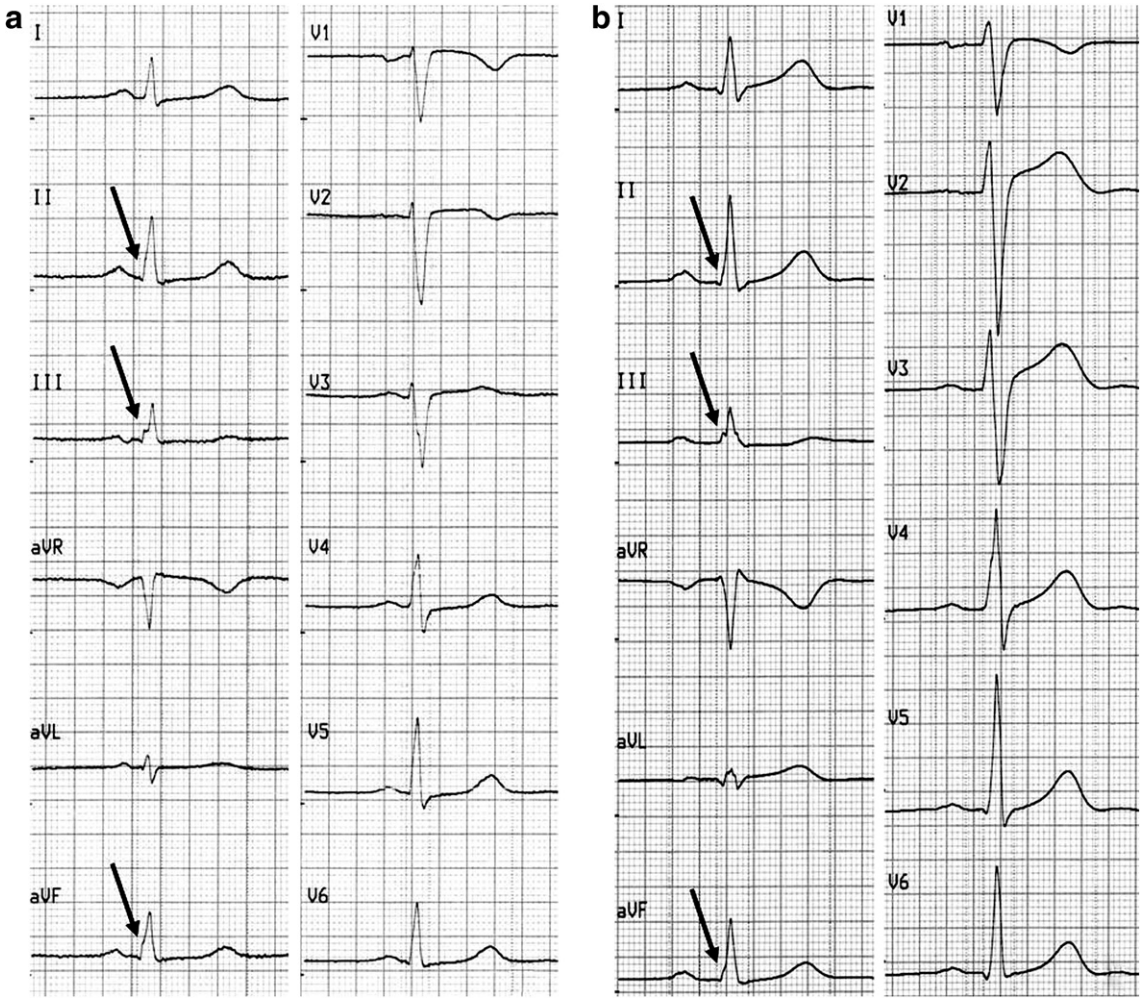

Fig. 1. ECG recordings (10 mm/mV, 50 mm/s) showing initial QRS complex abnormalities in inferior leads (arrows) that mimic "pseudo" delta-waves in two patients with IVF (a and b).