

Case Report

Sustained Ventricular Tachycardia In An Apparently Healthy Heart: A Very Localized Left Dominant Arrhythmogenic Cardiomyopathy

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Abstract

A 62-year-old man admitted for presyncope presented two symptomatic sustained ventricular tachycardia with right bundle branch morphology and inferior axis suggesting a pathology of the left ventricular lateral wall, the site where Cardiac Magnetic Resonance demonstrated a thinned, hypokinetic segment with fibro-fatty subepicardial infiltration. A very localized Left Dominant Arrhythmogenic Cardiomyopathy was diagnosed and an ICD implanted.

Key words: Arrhythmogenic Cardiomyopathy, Ventricular Tachycardia, Cardiac Magnetic Resonance

Case Report

A 62-year-old man was admitted to our Cardiology Department for chest pain, presyncope and mild elevation of cardiac enzymes (troponin= 1.75 ng/ml). A fast echocardiogram in the ER didn't show significant abnormalities. Electrocardiogram (ECG) revealed low QRS voltage in limb leads, especially in aVL with a notch, no progression of R wave in V5-V6, T-wave inversion in V6 and T-wave flattening in inferior leads (**Figure 1**). Coronary angiography was normal.

During the first 48 hours the in-hospital ECG continuous monitoring showed frequent isolated ventricular ectopic beats and an Electrophysiological Study was proposed to the patient who accepted. With a simple stimulation protocol from the RV apex (drive -S1-S2 = 600-280-270 msec) a fast ventricular tachycardia was induced. The VT had a right bundle branch (RBB) morphology and inferior axis, with dominant R wave in all precordial leads (**Figure 2**). It was poorly tolerated and terminated by overdrive pacing.

2D-echocardiography repeated by a skilled operator revealed a mild enlargement of the left ventricle (End Diastolic Diameter: 60 mm, End Diastolic Volume: 80ml/mq), mid and basal infero-lateral hypokinesia with preserved global function, EF: 58%. Right ventricle was normal. Cardiac MRI was planned.

The night before patient presented chest pain and sweating while ECG monitoring documented a sustained ventricular tachycardia with right bundle branch (RBB) morphology

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and inferior axis, xylocaine sensitive (**Figure 3**). This VT was similar but not identical to the previous induced one, presenting an RS complex in V3-V6.

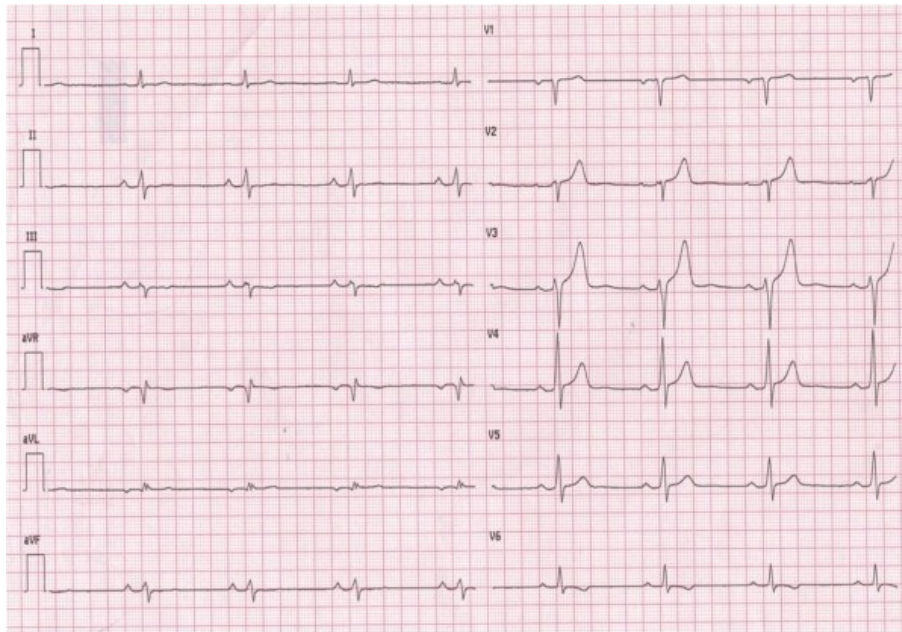


Figure 1. Baseline electrocardiogram (see text for description).

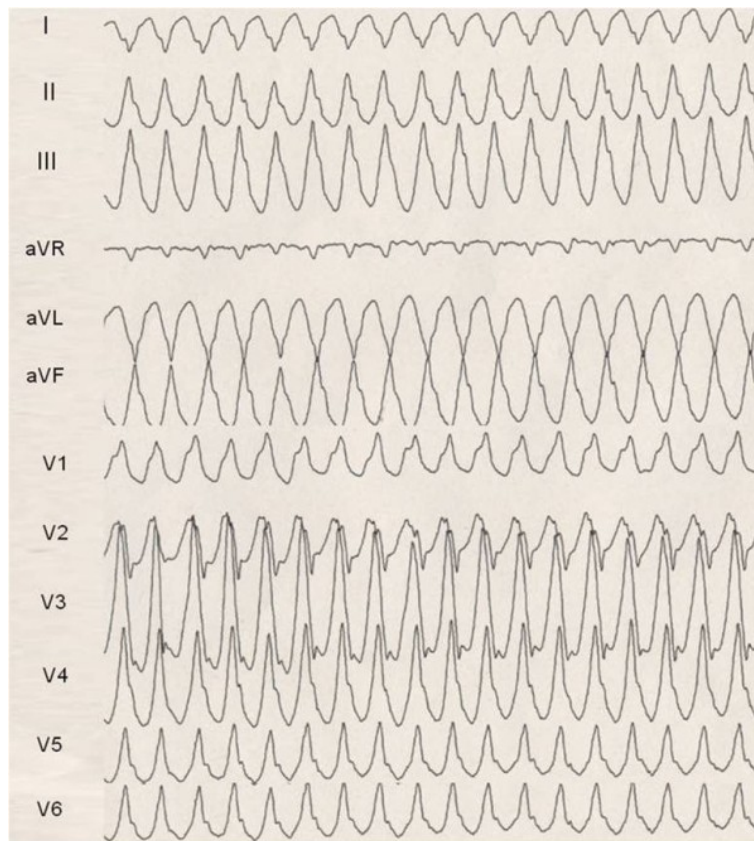


Figure 2. Ventricular Tachycardia induced at EP study. RBBB morphology and inferior axis with negative QRS axis in aVL and I leads suggest a left ventricle-lateral wall origin. Dominant R waves in V3-V6 leads point at a basal exit of the tachycardia, close to the mitral annulus. Furthermore one can notice slurring of QRS with long QRS duration (180 msec), QS pattern in I and aVL with a late notch, pseudo-delta wave in V1>34 msec: all these elements suggest an epicardial origin of the VT.

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