

Ventricular Fibrillation Triggered by Increased Vagal Activity in Patients with Brugada Syndrome

Swissa, Moshe; Paz, Offir

Kaplan Medical center, Rehovot, Israel

Introduction: Induction of ventricular fibrillation triggered by increased vagal activity and short coupling interval premature ventricular capture (PVC) in patient with Brugada syndrome is presented.

Methods: N/A.

Results: In the last 5 years we had 4 patients with increased vagal tone before developing syncope and Brugada syndrome on ECG. The most representative patient is described. A 42 years old patient had two consecutive syncope episodes. A syncope episode was noted after urination at midnight. A CPR was immediately initiated. Few minute later he had the second syncope episode that resolved spontaneously. An ECG showed slow atrial fibrillation with short coupling interval PVC's. ECG in sinus rhythm was compatible with Brugada type II pattern (Figure 1). All others ECG were normal. The patient evaluation includes: Normal echocardiography, normal exercise test, and 320 very short coupling interval PVC's on 24 hours Holter monitor. Flecainide test was positive. Tilt table test showed postural orthostatic tachycardia syndrome (POTS). Very aggressive Electrophysiologic study reveals HV interval of 60ms and was non inducible for ventricular arrhythmia with very aggressive protocol. Based on the spontaneous Brugada at the first ECG recording and very short coupling interval VPB's an AICD was implanted. Two weeks later, the patients experience two appropriate electrical shock (5 hours separated the 2 episodes) (Figure 2). A clear vagal trigger was noted and short coupling intervals PVC initiate the VF. Quinidine (1500mg/day) therapy was initiated. The patient is free of ventricular arrhythmia for more than 5 years.

Conclusions: A clear vagal trigger for VF in patient with Brugada syndrome is presented. Increased vagal tone can induces overt Brugada signs on ECG and may induces a very short coupling interval PVC leading to VF. Quinidine therapy may prevent the ventricular

arrhythmias.

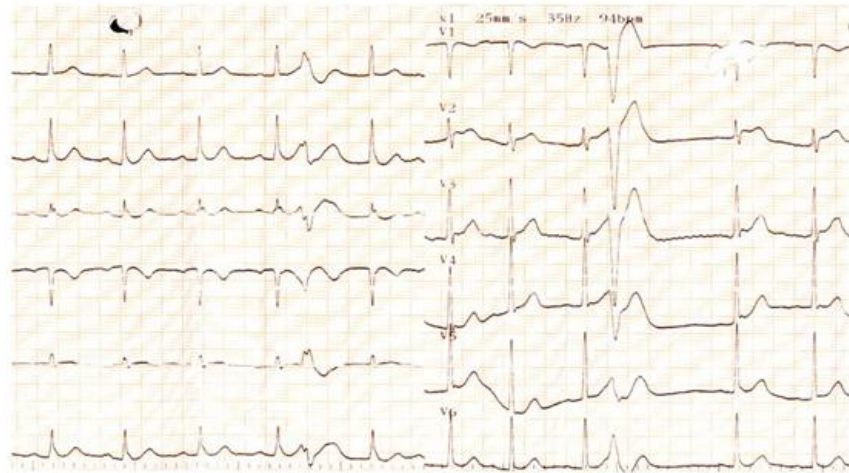


Figure 1: ECG showing sinus rhythm, with very short coupling interval VPB (280ms) and ST elevation in V1-3 suspected for Brugada pattern

Figure 2:

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First VPB (short coupling interval 270ms) do not induces VA, the second VPB (coupling interval of 260ms) induces VF that defibrillated to sinus rhythm

