ECG Tips: Brugada Syndrome

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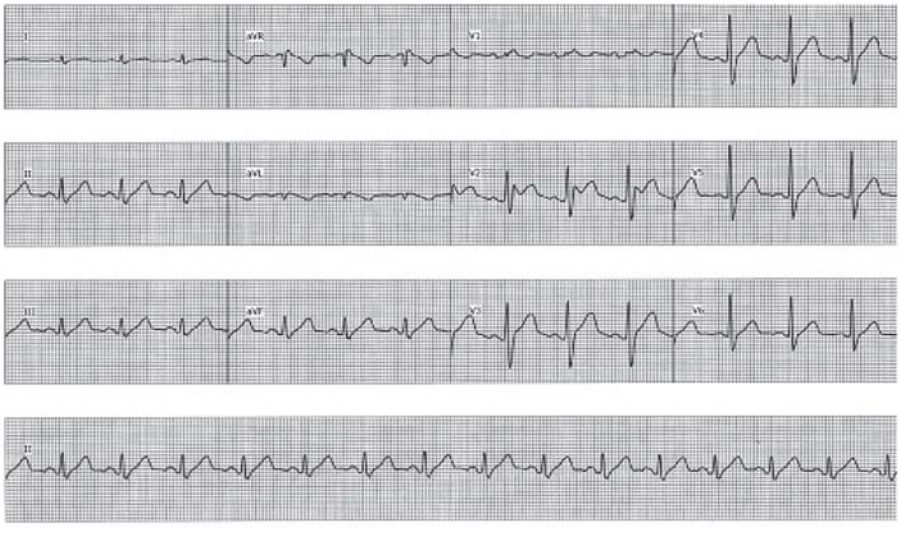
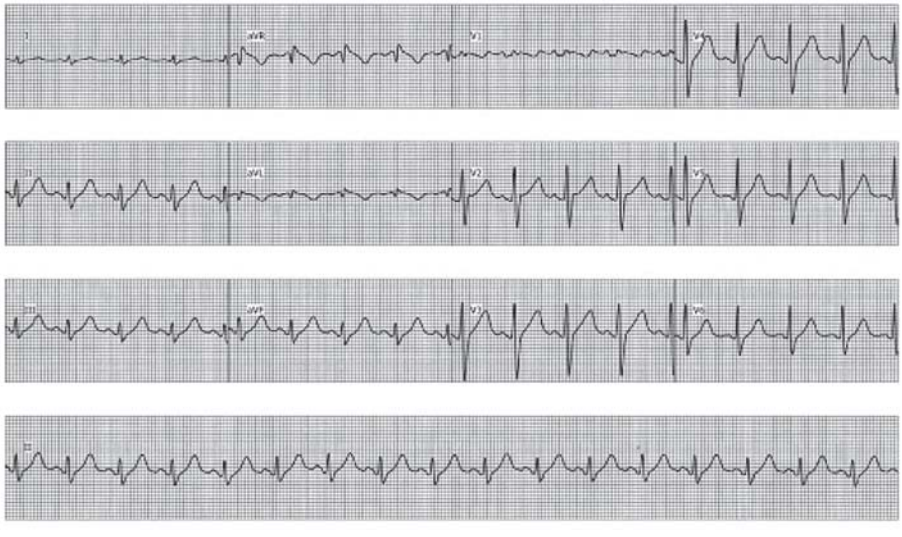
A 54 year-old Thai man presented at the hospital for routine check up. He had no symptoms and no underlying heart disease. He was not on any medications. He had history of sudden cardiac death in his family. From resting ECG in Figure 1, what is the diagnosis?

Figure 1. Resting ECG



His ECG showed normal sinus rhythm at a rate of 88 bpm. The ECG demonstrated ST segment elevation in right precordial lead (V2- saddleback type) and positive T wave (1,2). He underwent program ventricular stimulation for risk stratification of Brugada ECG.

Figure 2. ECG during isoproterenol 1 mcg/min.

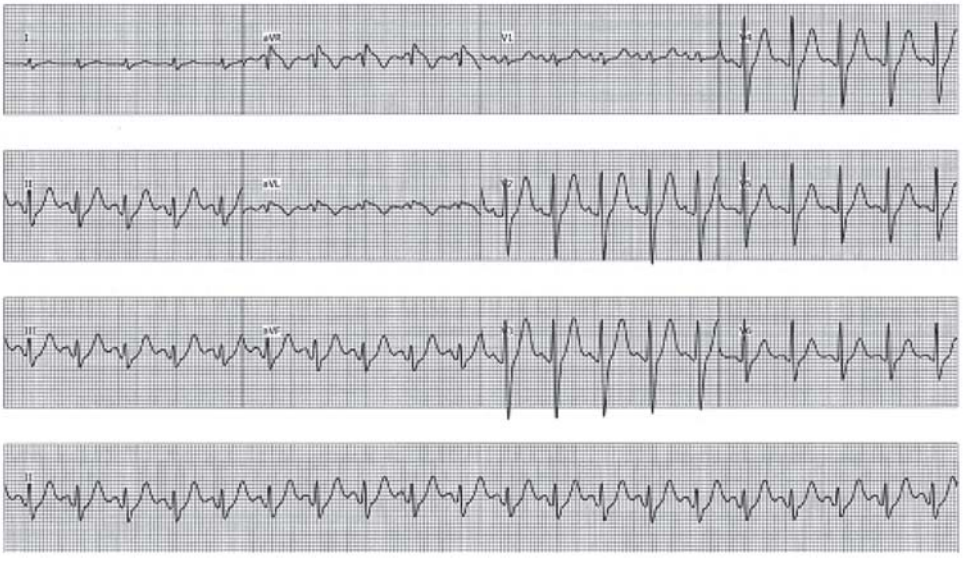


During electrophysiologic study, after isoproterenol 1 mcg/min was administered, the EKG demonstrated sinus tachycardia rate 102 bpm. The saddle back pattern EKG was markedly decreased (Figure 2). The Brugada- ECG changes during sympathetic stimulation has been previously reported (3-5).

After isoproterenol dose was increased to 2 mcg/min, the EKG demonstrated sinus tachycardia 118 bpm. The ST segment elevation was no longer existed (Figure 3).

The patient had EKG-like Brugada type 2 (saddle-back pattern). Isoproterenol is beta-adrenergic agonist. Isoproterenol augment L-type calcium current and have been shown to be effective in normalizing ST-segment elevation in patients with Brugada syndrome and in controlling electrical storms from this condition (1,2,5).

Figure 3. ECG during isoproterenol 2 mcg/min.



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