Arrhythmia graphics

What is your diagnosis?

A 17-year-old boy presented with history of recurrent palpitations of sudden onset and offset. No structural heart disease was observed on the echocardiogram (ECG) done during the episode (Figure 1).

Commentary

Electrocardiogram (Figure 1) shows a regular tachycardia (QRS 120ms) with the rate being 150/min. P-waves are not

seen. The morphology is atypical right bundle branch block (RBBB) combined with left axis deviation. The suggested diagnosis is fascicular ventricular tachycardia (VT) of left posterior fascicular origin. In patients with no structural heart disease, tachycardia with RBBB having left axis deviation with a relatively narrow QRS, especially with a sharp initial part of QRS, suggests it to be of a fascicular VT arising from near the left posterior fascicle. The sharp initial deflection of the QRS complex is due to the involvement of the fast conducting fascicles and distinguishes the tachycardia from

Figure 1 Electrocardiogram.

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Figure 2 Electrophysiologic tracing during tachycardia. HBED: His bundle electrogram distal, HBEP: his bundle electrogram proximal, HRAP: high right atrial proximal, RAD: right axis deviation, RVA: right ventricular apex, RVP: right ventricular pressure.

myocardial VT. Tachycardia responds well to calcium channel blockers. Electrophysiology study and radiofrequency ablation gives permanent cure. Electrophysiologic tracing is shown in Figure 2. Atrial electrograms in the high right atrium distal (HRAD) channel are less than the ventricular beats (VA dissociation) suggesting it to be a VT. Quadripolar catheters at the his bundle region (the distal electrode pairs [HBED] and proximal electrode pairs [HBEP]), right ventricular region (right atrial appendage [RAA] and right ventricular

pacing [RVP]) and right atrial appendage (HRAD and high right atrial proximal [HRAP]).

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