

Long-QT Unmasked by Adrenergic Stimulation

ALEJANDRO E. CONTRERAS¹, PABLO S. CALAMARI², ROBERTO A. CHAMALE¹

The diagnosis of long-QT syndrome is easy, when torsion of point is documented in a patient with clearly prolonged-QT in the electrocardiogram, however, this situation is not the most common in clinical practice.

Evaluation of QT response during adrenergic stimulation, either by standing posture or intravenous administration of adrenaline may be helpful in the diagnosis of prolonged QT syndrome. 1-2

We present a patient of 14 years old, with a history of recurrent syncope of two years of evolution. Echocardiogram and Holter are normal. Tilt test is positive with mixed response, she is treated with beta blockers. Given the persistence of syncope, she is referred for electrophysiological study, in which is found non-sustained polymorphic ventricular tachycardia.

Basal electrocardiogram shows a corrected QT of 0.41 seconds in the supine position, which increases to 0.465 seconds in the standing position (Figure 1). Later, it was carried out a test of provocation with adrenaline and there is a paradoxical response (marked increase in the QT and marked presence of U waves with increased heart rate) (Figure 2).

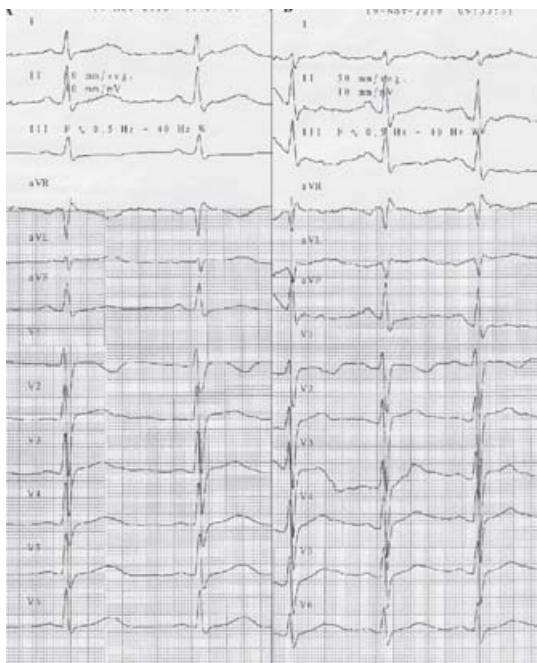


Fig. 1. Basal electrocardiogram (ECG) (50 mm/second) in decubitus supine (A) and ECG standing (B) with prolongation of the QT segment.

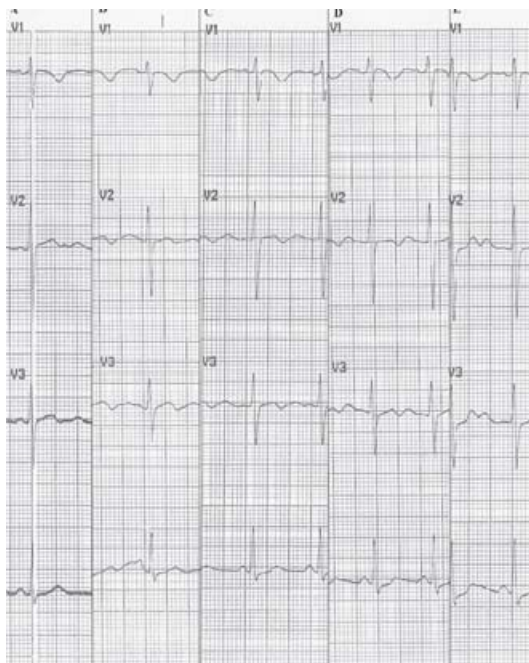


Fig. 2. Adrenaline test. Electrocardiogram (25 mm/second) with adrenaline in intravenous infusion in increasing doses, 0,03 mcg/kg/min (A), 0,06 mcg/kg/min (B), 0,10 mcg/kg/min (C), 0,20 mcg/kg/min (D) and 0,40 mcg/kg/min (E).

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¹Service of Cardiology. Hospital Privado Centro Médico de Córdoba. Córdoba. Argentina.

²Residency of General Medicine. Hospital Dr. Lucio Molas. Santa Rosa. La Pampa

Service of Cardiology. Hospital Privado de Córdoba. Naciones Unidas 346. Bº Parque Vélez Sarsfield. Ciudad de Córdoba. PO: 5016.

Tel.: 543514688220 Fax: 543514688818 E-mail: aletreras@hotmail.com