A 10-year-old boy was admitted for a sudden exertional syncope. The ECG showed a regular narrow-QRS tachycardia with RP >PR and negative P waves in inferior leads, suggestive of atrial tachycardia (Panel A). The echocardiogram was normal, and the treadmill test provoked high-density monomorphic ventricular extrasystolia. A 24 h Holter documented two bursts of non-sustained monomorphic ventricular tachycardia (NSMVT) and polymorphic ventricular extrasystoles (Panel B). Magnetic resonance imaging did not find ventricular dilatation or tissue infiltration. The disposition of coronary arteries was normal.

An electrophysiological study was then performed. Conduction intervals and QT were normal. No accessory pathways were found and arrhythmias were not induced. Subsequently, we implanted a loop recorder. Two months later, the patient suffered another witnessed syncope, with recovery in 3 min. Presence of pulse was checked by no one and no particular re-animation manoeuvres was done at all. The device revealed two recorded events: first, a burst of NSMVT followed by atrial ectopic beats and degeneration into ventricular fibrillation, which self-terminated after 19.4 s (Panel C); 1 min later, a short polymorphic ventricular tachycardia, followed by a 6 s pause, four blocked P waves with dissociated QRS complexes, and then 29.4 s of asystolia. Stable activity began with narrow-QRS nodal rhythm (Panel D).

As no reversible condition was found, we indicated the implantation of a cardioverter–defibrillator. After 7 months, syncopes have not recurred. Definitive results of genetic tests for long-QT syndrome and ionic channel diseases mutations are being awaited. So far, the possible diagnosis of idiopathic VF cannot be firmly rejected.

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