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CASE REPORT

Aborted sudden cardiac death as first presentation of Wolff–Parkinson–White syndrome

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KEYWORDS
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Abstract Sudden cardiac death (SCD) can be the first clinical manifestation of Wolff–Parkinson–White (WPW) syndrome.

Catheter ablation of accessory pathways is now a safe and effective procedure, and is widely recommended in patients with WPW syndrome. However, management of the asymptomatic WPW patient remains controversial. Recent studies have readdressed the issue of risk stratification and prophylactic catheter ablation.

We describe a case of malignant arrhythmia and aborted SCD as first presentation of WPW syndrome in a previously asymptomatic 17-year-old patient.

PALAVRAS-CHAVE
Wolff–Parkinson–White;
Morte súbita cardíaca;
Ablação por catéter

Morte súbita cardíaca abortada como primeira manifestação da síndrome de Wolff–Parkinson–White

Resumo A morte súbita cardíaca (MSC) pode ser a primeira manifestação da síndrome de Wolff–Parkinson–White (WPW).

A ablação por cateter da via acessória é atualmente um tratamento seguro e eficaz, estando liberalmente recomendado em doentes sintomáticos. Já na presença de padrão electrocardiográfico de WPW, a orientação terapêutica é alvo de controvérsia. Alguns estudos vieram reativar a discussão relativamente à estratificação de risco e benefício da ablação profilática.

Descrevemos o caso clínico de um jovem de 17 anos previamente assintomático, com arritmia maligna e morte súbita cardíaca abortada como primeira manifestação da doença.

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Abbreviations

AF	atrial fibrillation
AP	accessory pathway
AP-AERP	accessory pathway antegrade effective refractory period
AV	atrioventricular
AVRT	atrioventricular reciprocating tachycardia
CCU	coronary care unit
ECG	electrocardiogram
ED	emergency department
EPS	electrophysiological study
RFA	radiofrequency ablation
SCD	sudden cardiac death
VF	ventricular fibrillation
WPW	Wolff–Parkinson–White

Introduction

WPW syndrome is a disorder characterized by the presence of one or more accessory pathways that predispose patients to frequent episodes of arrhythmias.[1] The 2003 ESC/ACC/AHA guidelines[2] recommend routine electrophysiological study (EPS) with liberal indications for catheter ablation in symptomatic patients. However, management of asymptomatic subjects with incidentally found pre-excitation patterns remains controversial. Prognosis is usually good, but there is a lifetime risk of malignant arrhythmias and sudden cardiac death (SCD), and the latter can be the first presentation of the disease. Although risk factors for fatal arrhythmic events are not well established, EPS can be a useful tool in risk stratification.[3] A short accessory pathway anterograde effective refractory period (AP-AERP), inducibility of sustained tachyarrhythmias (atrioventricular reciprocating tachycardia [AVRT] and/or atrial fibrillation [AF]) and the presence of multiple accessory pathways are the strongest predictors of life-threatening arrhythmias and SCD.[3–6]

Case report

A 17-year-old male with no history of cardiovascular disease or familial SCD presented to the emergency department (ED) with palpitations. No medication or drug abuse was reported. Symptoms had started three hours earlier at rest. The physical examination revealed normal blood pressure (130/70 mmHg) and an irregular pulse approaching 200 bpm. The rest of the physical evaluation was unremarkable, with no cardiac murmurs or signs of pulmonary edema. An electrocardiogram (ECG) showed a wide-complex irregular tachycardia with rapid ventricular rate (Figure 1), suggesting pre-excited AF. Continuous heart monitoring was initiated and two venous lines were inserted.

A few minutes after admission to the ED, the rhythm degenerated into ventricular fibrillation (VF) (checked on the monitor) and the patient collapsed without pulse. Cardiopulmonary resuscitation was promptly started. Recovery of regular pulse and rhythm was confirmed after defibrillation with two electrical shocks (2× 150 J, biphasic). The ECG then obtained revealed sinus rhythm with ventricular pre-excitation (shortened PR interval, widened QRS complex with delta wave and secondary ventricular repolarization abnormalities) (Figure 2). The patient was admitted to the coronary care unit (CCU). No rhythm abnormalities were recorded during CCU monitoring. Serum potassium and magnesium levels were normal and transthoracic echocardiography excluded structural heart disease.

EPS was scheduled and performed within 12 hours of admission. Two catheters were positioned via the right

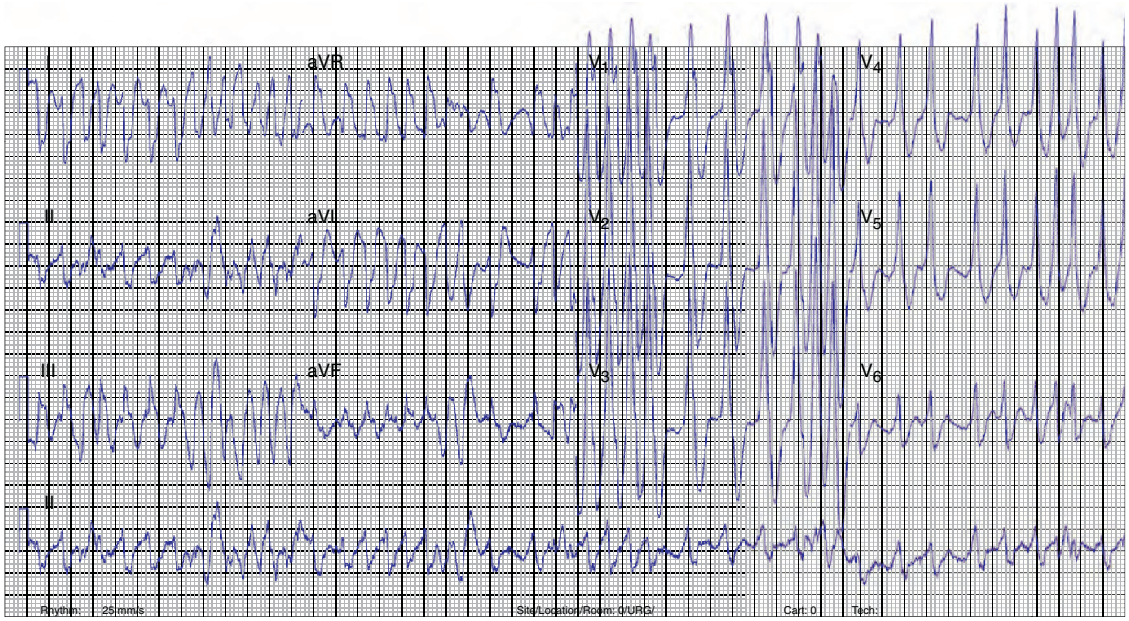

Figure 1 Presenting 12-lead ECG. A wide-complex irregular tachycardia is shown consistent with pre-excited AF. The ventricular response is very rapid, and the shortest pre-excited RR interval is nearly 200 ms.