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Pseudo-pre-excitation terminated by overdrive pacing

A 67-year-old Caucasian man presented with gradual onset exertional dyspnoea over the past few months. On one occasion he experienced some chest pain at work and he had to stop work. He was an ex-smoker and his cholesterol was raised at 5.4 mmol/l. An echocardiogram showed a dilated left ventricle with moderately impaired systolic function. An ECG (panel A) showed tachycardia and suggested ventricular pre-excitation compatible with Wolff-Parkinson-White (WPW) syndrome. However, the nature of the rhythm was not clear, as P waves were not present before each QRS complex. At this stage, differential diagnoses were WPW syndrome, atrial flutter, chaotic atrial rhythm and atrial parasystole. Coronary angiography and electrophysiological studies (EPS) were carried out to identify the origin of the arrhythmia and convert his heart to sinus rhythm. Coronary arteriography showed an occluded right coronary artery with minor disease in the left circumflex artery. During EPS it was clear that there was independent atrial activity. The EPS confirmed that the rhythm was ventricular in origin, suggesting it was HIS bundle or of fascicular origin. The arrhythmia was terminated by overdrive pacing. An ECG after EPS showed a normal sinus rhythm (panel B). He was treated and maintained with amiodarone. At 6 months' follow-up, he remains well without recurrence of ventricular tachycardia.

This is an interesting case of ventricular tachycardia mimicking pre-excitation and

reinforces the important message that atrioventricular dissociation should be looked for in all cases of tachyarrhythmia.

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