

Recurrence of accessory pathway after radiofrequency ablation from a benign to a malignant form of Wolff–Parkinson–White syndrome: a very uncommon case

Vincent Julie, Sellal Jean-Marc, and Brembilla-Perrot Beatrice*

Cardiology, CHU of Brabois, 54500 Vandoeuvre les Nancy, France

* Corresponding author. Tel: +33 383153256; fax: +33 383154226, E-mail: b.brembilla-perrot@chu-nancy.fr

We report a very rare natural evolution of a pre-excitation syndrome. An accessory pathway with only retrograde conduction became apparent with very rapid anterograde conduction 18 years later.

Two mechanisms are involved in paroxysmal junctional tachycardia: atrioventricular (AV) nodal re-entrant tachycardia and accessory pathway (AP).

Prevalence of Wolff–Parkinson–White (WPW) syndrome in general population is about 0.1%.¹ It is higher under 16 years and in men.^{1–3} In 65–82% of cases, it occurs before the age of 30 years.^{1–3} The decrease of incidence related to age is explained by prolongation of the AP refractory period with age.^{1–3}

Case report

We describe the case of a 43-year-old man, referred for paroxysmal atrial fibrillation conducted by the normal AV conduction system in 1995 at the age of 25 years. At that time, a concealed left lateral AP was identified at electrophysiological study. Atrioventricular re-entrant tachycardia over this concealed AP was induced. There was no anterograde conduction over AP even after isoproterenol, when atrial pacing was used to stop the tachycardia (*Figure 1*). Electrocardiogram was normal in sinus rhythm. There was only a retrograde conduction over a left lateral AP. Accessory pathway ablation was performed by retrograde aorta technique with application of radiofrequency (RF) energy on the earliest atrial retrograde activation during ventricular pacing. Accessory pathway ablation was successful. The patient remained free of symptoms during 18 years.

In April 2013, he referred in emergency in our cardiology department for recurrence of palpitations with a poor clinical tolerance. The electrocardiogram (ECG) showed an irregular tachycardia with enlarged QRS complexes leading to the diagnosis of a malignant WPW syndrome (the shortest RR interval between pre-excited beats over a left lateral AP was 180 ms during atrial fibrillation) (*Figure 1*). Electrophysiological study confirmed the presence of a left lateral AP only capable of anterograde conduction with a short refractory period (230 ms in the basal state).

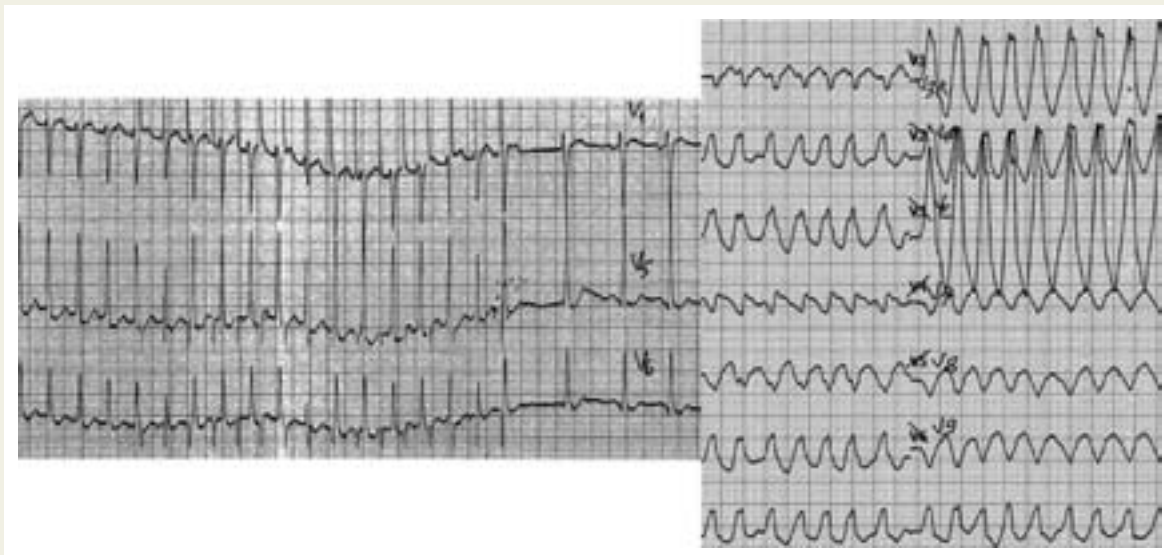


Figure 1 On the left: 1995; Orthodromic tachycardia stopped by atrial pacing with restoration of sinus rhythm. There are no signs of anterograde conduction over an AP. On the right: 2013-06-18 Patient admitted in emergency for a poorly tolerated atrial fibrillation conducted over a left lateral AP at high rates.

He finally recovered after successful RF ablation of his malignant recurrent left lateral AP. An interesting fact is that the 2013 post-ablation ECG showed almost no difference compared with the ECG before ablation (slight diminution of R wave in leads D3 and V2 and apparition of a little Q wave in leads V3 to V6 after ablation).

In conclusion: To our knowledge, this case is the first in the world of recurrence from a benign to a malignant form of WPW syndrome several years after AP RF ablation. The natural history of pre-excitation syndrome is not always classical and malignant changes can occur in exceptional cases considered as initially with a low risk of events.

Conflict of interest: none declared.

References

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