



Clinical case

Ventricular fibrillation occurring after atrioventricular node ablation despite minimal difference between pre- and post-ablation heart rates

Fibrillation ventriculaire survenant après ablation du nœud atrioventriculaire malgré une différence minimale entre les fréquences cardiaques pré- et post-ablation

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Abstract

We report the case of an 82-year-old man presenting with ventricular fibrillation (VF) occurring acutely after atrioventricular node (AVN) ablation. This patient had severe valvular cardiomyopathy, chronic atrial fibrillation (AF), and underwent prior to the AVN ablation a biventricular implantable cardiac defibrillator positioning. The VF was successfully cardioverted with one external electrical shock. What makes this presentation original is that the pre-ablation spontaneous heart rate in AF was slow (84 bpm), and that VF occurred after ablation despite a minimal heart rate drop of only 14 bpm. VF is the most feared complication of AVN ablation, but it had previously only been described in case of acute heart rate drop after ablation of at least 30 bpm (and more frequently > 50 bpm). This case report highlights the fact that VF may occur after AVN ablation regardless of the heart rate drop, rendering temporary fast ventricular pacing mandatory whatever the pre-ablation heart rate.

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Keywords: Ventricular fibrillation; Ablation; AV node; ICD; Atrial fibrillation

Résumé

Nous présentons le cas d'un patient de 82 ans présentant une fibrillation ventriculaire (FV) survenant immédiatement après ablation du nœud auriculo-ventriculaire (NAV). Ce patient souffrait d'une cardiopathie valvulaire sévère, de fibrillation auriculaire (FA) permanente et avait bénéficié de la pose d'un défibrillateur automatique implantable biventriculaire avant l'ablation du NAV. La FV a été défibrillée avec succès par un choc électrique externe. Ce qui rend cette présentation originale est le fait que la fréquence cardiaque spontanée en FA avant ablation était lente (84 bpm), et que la FV est survenue malgré une chute minimale de seulement 14 bpm de la fréquence cardiaque. La FV est la complication la plus redoutée de l'ablation du NAV ; cependant elle n'avait jusqu'alors été décrite que chez des patients dont la fréquence cardiaque post-ablation chutait de plus de 30 bpm (et le plus souvent de plus de 50 bpm). Le cas de ce patient met en exergue le fait que la FV peut survenir après ablation du NAV peu importe la chute de la fréquence cardiaque, rendant obligatoire la stimulation ventriculaire rapide temporaire quelle que soit la fréquence cardiaque avant l'ablation.

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Mots clés : Fibrillation ventriculaire ; Ablation ; Nœud AV ; DAI ; Fibrillation atriale

1. Case report

We report the case of an 82-year-old man with a severe valvular cardiomyopathy (mitral and aortic bioprosthesis in 1996, redux in 2008 with new mitral bioprosthesis) with very low left ventricular ejection fraction (LVEF), in permanent atrial

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fibrillation (AF), referred to our center for cardiogenic shock. Patient chronic treatment comprised eplerenone, amiodarone, and furosemide. Beta-blockers and ACE inhibitors were not previously prescribed because of hemodynamic intolerance. ECG showed chronic right ventricular block with QRS width of 170ms, heart rate of 80–90 bpm in AF.

Evolution was favorable using intravenous inotropes. Transthoracic echocardiography after stabilization showed normal function of prosthetic valves, LVEF of 15% with dilated left ventricle, normal right ventricle size and function. The decision was taken to implant an internal cardiac defibrillator (ICD) with cardiac resynchronization therapy (CRT). A Biotronik Iperia 7

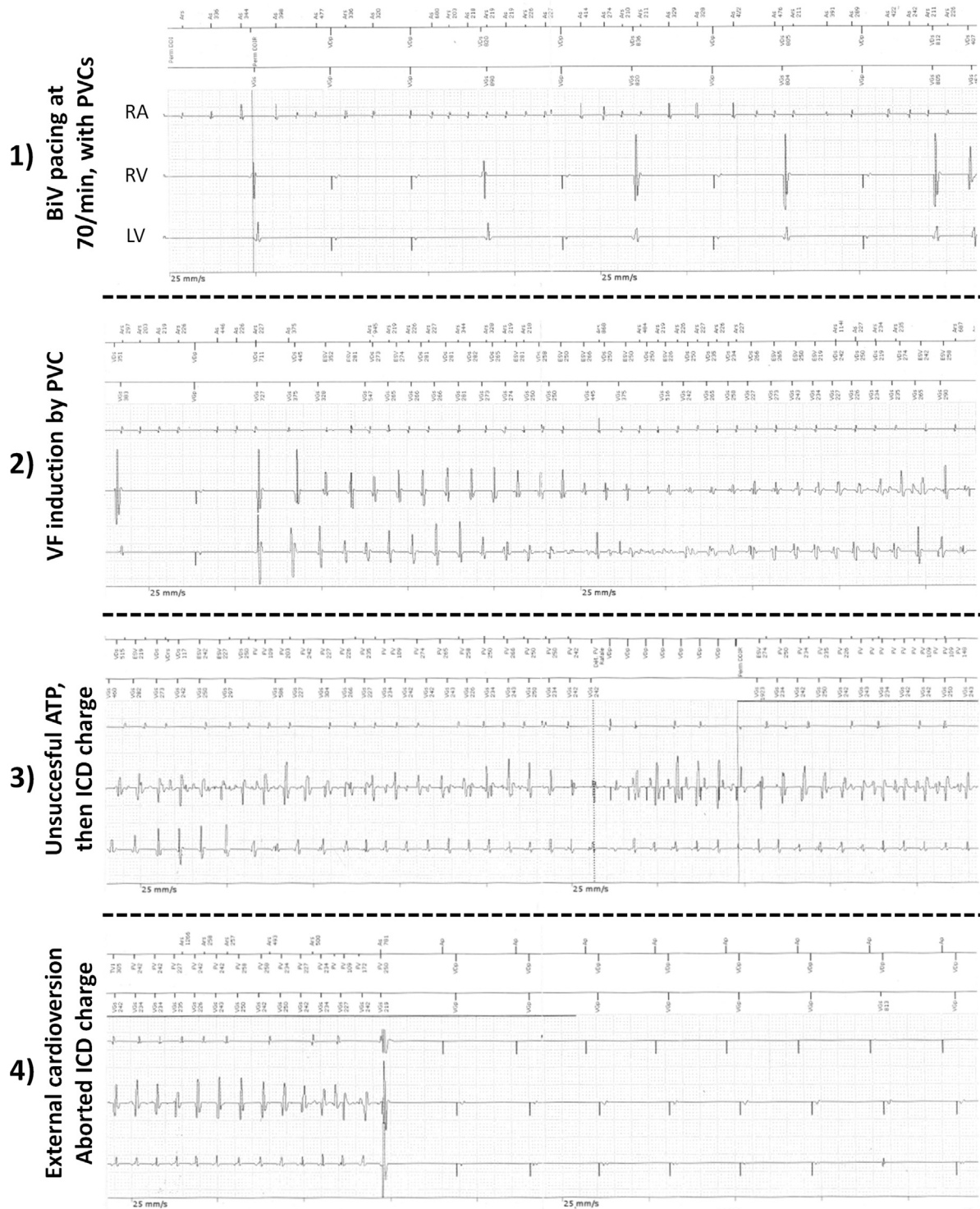


Fig. 1. ICD recordings showing syncopal ventricular fibrillation occurring 15 minutes after atrioventricular node ablation, while the patient was still in the EP lab. The ICD had just been reactivated and the pacing rate was still set at 70/min. External cardioversion was successfully performed before internal electrical shock could be delivered.

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