LETTER TO THE EDITORS

Risk of recurrence after life-threatening ventricular arrhythmias in coronary spasm

Risque de récidive des arythmies ventriculaires dans l’angor spastique

Keywords: Coronary vasospasm; Implantable defibrillators; Ventricular arrhythmias; Sudden cardiac death
Mots clés : Spasme coronaire ; Défibrillateur automatisable implantable ; Trouble du rythme ventriculaire ; Mort subite

We recently discussed the role of implantable cardioverter defibrillators (ICDs) as a complement to optimal medical management in patients with life-threatening ventricular arrhythmias (VAs) due to coronary artery spasm, in light of three cases managed in our department [1]. As we stated, an ICD is not indicated in primary prevention in patients without a spasm-related life-threatening VA. However, the role of an ICD in secondary prevention after resuscitated sudden cardiac death due to vasospastic angina is unknown. Indeed, several cases reports [2,3] have highlighted the risk of recurrent life-threatening VAs in such patients, despite optimal management (smoking cessation, non-dihydropyridine calcium channel blockers and/or nitrate derivatives [4]). Unfortunately, no clinical trial has been performed to provide definitive conclusions. We have proposed a cascade management strategy based on the results of an ergonovine test after the introduction of optimal medical treatment in such patients, to consider the implantation of an ICD [1]. However, this proposition was based on clinical experience not on evidence-based medicine, which is currently the gold standard in modern cardiology.

In our previous review [1], we discussed the case of a 52-year-old woman who was initially managed for a first non-ST-segment elevation myocardial infarction with angiographically healthy coronaries and who presented 6 months later with a cardiac arrest treated by two shocks delivered by a semi-automatic defibrillator for ventricular fibrillation due to a recurrent coronary spasm, despite smoking cessation and optimal medical treatment (isosorbide mononitrate, calcium channel blockers, statin and aspirin). We decided to optimize her medical treatment (amlodipine, nicorandil, nifedipine, statin and dual antiplatelet therapy) and to implant an ICD. During the initial follow-up, the ICD interrogation showed several episodes of non-sustained ventricular tachycardia (maximum duration, 14 seconds).

During a recent face-to-face consultation, 36 months after ICD implantation, the patient described two episodes of dizziness without any context of stress or risk factors for coronary spasm (no cold environment, smoky atmosphere, etc.). Her medical treatment was unchanged, with perfect observance. The ICD interrogation showed two episodes of rapid ventricular tachycardia and ventricular fibrillation, well detected and successfully treated by antitachycardia pacing and one intracardiac shock (39.2 J) (Fig. 1). This observation confirmed that the role of an ICD after life-threatening VA is important to define.

It appears crucial to create a national registry of patients with an ICD implanted after a resuscitated sudden cardiac death due to life-threatening VAs during a coronary artery spasm. This registry may be helpful in evaluating the prevalence and incidence of such patients, but also to evaluate the recurrence of life-threatening VAs, despite the introduction of optimal medical management and the removal of risk factors. Indeed, the key point is to evaluate whether the risk of sudden cardiac death is completely removed by optimal management or whether such patients display a specific trigger or spasm susceptibility that is undercontrolled by optimal medical treatment, leading to ICD implantation. According to these results, a multicentre randomized clinical trial should be performed.

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Abbreviations: ICD, implantable cardioverter defibrillator; VA, ventricular arrhythmia.

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Figure 1. Ventricular fibrillation detected by an implantable cardioverter defibrillator (Paradym VR; Sorin Group) and successfully treated by an intracardiac shock (39.2 J).

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

References