

Preface

Interventional Management of Ventricular Arrhythmias



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Editors

Ventricular arrhythmias and associated sudden cardiac death remain an important issue in contemporary clinical practice. The foundational principles that guide the complex procedures we perform today are the product of six decades of incremental work in the field. The early days of surgical subendocardial resection, guided by a handheld mapping electrode by Dr Josephson and colleagues, was the precursor of modern catheter-based ablation therapies. The late 1980s and early 1990s saw Drs Stevenson, de Bakker, and Marchlinski elucidate the components of a ventricular tachycardia (VT) circuit—the fundamentals of signal propagation, “zigzag” course of activation in scar-related VT, and the concepts of critical isthmus and bystander circuits were defined. The development of radiofrequency (RF) ablation for supraventricular arrhythmias at the same time allowed for translation of these concepts into catheter-based therapy for ventricular arrhythmias.

Subsequently, great emphasis has been placed on the mechanistic understanding of ventricular arrhythmias in nonischemic cardiomyopathies, and various techniques and strategies have been developed to ablate the intramural and epicardial VT circuits. Over the past three decades, we have

witnessed remarkable progress in electroanatomical mapping, epicardial access and ablation, advanced cardiac imaging, high-density mapping catheters, RF energy delivery, and the emergence of alternative energy sources for ablation. This knowledge has allowed us to define the arrhythmogenic substrate better and guide targeted ablation.

While these technological advances have played a key role in arming today’s operators with sophisticated mapping and ablation capabilities, it has also added considerable complexity to the management of these patients. In this issue of the *Cardiac Electrophysiology Clinics*, we attempt to deconstruct and crystallize the core concepts of interventional ventricular arrhythmia management. We are truly fortunate to have collaborated with eminent and internationally renowned authors, to aid us in this pursuit.

Broadly, the first section outlines the basics of ventricular arrhythmia pathophysiology and provides an overview of catheter ablation, with an emphasis on pre-procedural imaging and intra-procedural electrogram targets. The next section has articles on catheter ablation of idiopathic ventricular arrhythmias arising from the outflow tracts and left ventricular summit, and VT originating from the conduction system. This is

followed by a detailed overview of catheter ablation in the epicardial space, and subsequent focused reviews on catheter ablation of ventricular arrhythmias in specific non-ischemic cardiomyopathies (arrhythmogenic right ventricular cardiomyopathy, Brugada syndrome, hypertrophic cardiomyopathy and granulomatous myocarditis). This section ends with articles on ablation of VT in congenital heart disease and ablation of ventricular fibrillation. The final section consists of articles describing the spectrum of non-RF therapies that are used as adjunct to standard catheter ablation (cryothermia, electroporation, alcohol, radiation, autonomic neuromodulation, and surgical ablation).

Our goal, with this issue, is to give the readers of the *Cardiac Electrophysiology Clinics* an in-depth understanding of the entire gamut of interventional management strategies for ventricular arrhythmias. We would like to sincerely thank Drs. Thakur and Natale for inviting us to edit this issue of the *Cardiac Electrophysiology Clinics*, and we thank all the contributors for helping us synthesize

and simplify this rapidly growing field in electrophysiology.

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