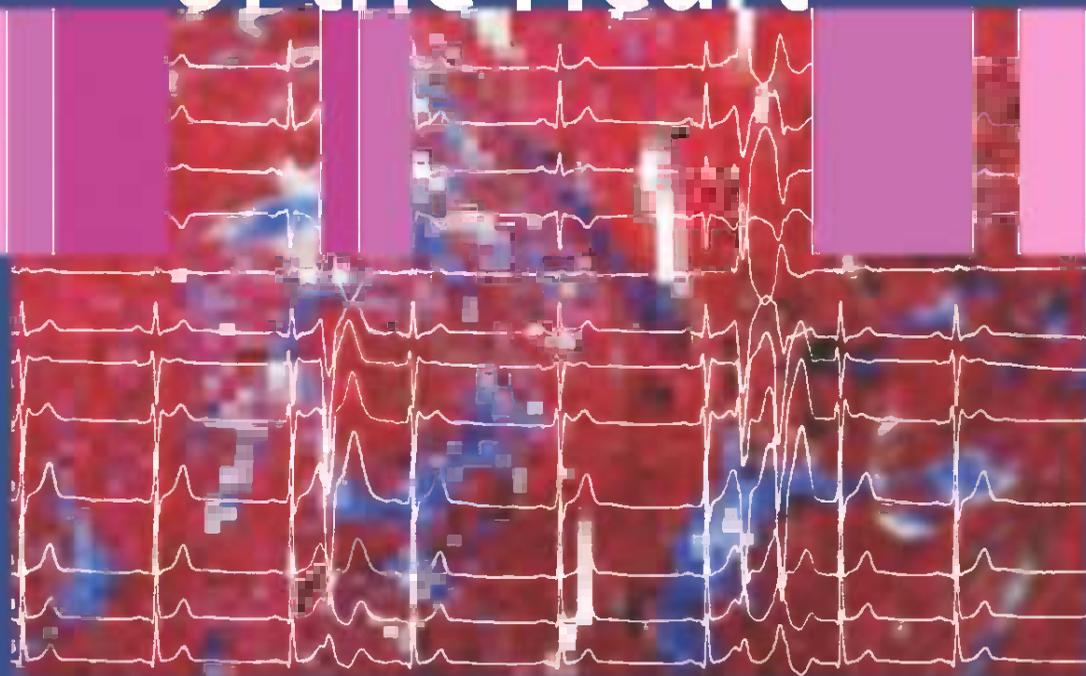


Ihor Gussak
Charles Antzelevitch *Editors*

Arthur A. M. Wilde, Paul A. Friedman,
Michael J. Ackerman, and Win-Kuang Shen *Co-Editors*

Electrical Diseases of the Heart



Genetics, Mechanisms,
Treatment, Prevention

 Springer

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Ihor Gussak and Charles Antzelevitch (Eds)

Arthur A.M. Wilde, Paul A. Friedman, Michael J. Ackerman, and
Win-Kuang Shen (Co-Eds)

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**Genetics, Mechanisms,
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*To the pioneers of cardiac electrophysiology whose seminal contributions are depicted in the historical perspectives included in many of the chapters. Our mentors, collaborators, and fellows who have assisted us in advancing the field,
and
last, but not least, to our families, whose understanding and support have permitted us to dedicate the time and effort needed to formulate this text.*

I.G.
C.A.

Foreword

She was about 35 years old when she first became my patient in 1975. She had suffered from bouts of a supraventricular tachycardia (SVT) as far back as she could remember. “In the early days,” she recalled, “when I was a kid, they would give me something in the emergency room that elevated my blood pressure and damn near tore my head off. What a headache I would get! But a lot of times it didn’t work. Then they stuck my head in a bucket of cold water and told me to ‘bear down.’ Finally, they would give me more digitalis in my vein until I started vomiting. That usually stopped the SVT.” But nothing seemed to prevent recurrences. She was on a full dose of digi-toxin and was one of the first to try a β blocker (propranolol) in the late 1960s. Her episodes were fast, around 220/min, and frightened her terribly, so much so that she would ride the tractor alongside her farmer-husband all day long just to be near him in case she had a recurrence.

Then came one of the first breakthroughs. Gordon Moe had published a “case report” of a dog with probable atrioventricular node reentry (AVNRT), showing that such a tachycardia could be started and stopped by external stimuli. Clinical studies followed (though somewhat belatedly) and replicated such responses in humans. Medtronic developed an implantable pace-maker (5998 RF unit) that was triggered by an external battery-driven stimulator held over the passive receiver to deliver a burst of rapid stimuli to the epicardial electrodes implanted on her right atrium. Magic! She terminated her own SVT with unerring reliability and never precipitated atrial fibrillation. Now a free woman, she no longer needed tractor rides. But she never left her house without the RF generator and always carried a spare battery in her pocket.

Over time she stopped her medications and gradually stopped coming back for return visits because she had complete control of her SVT. About 15 years later she showed up unannounced because one of the wires in her handheld unit had fractured and she no longer could stop the SVT. Could I get her a replacement or send the broken unit for repairs, she asked. The next day she was in the EP laboratory, had a slow pathway ablation, cure of the AVNRT, and removal of the implanted unit.

My, what a ride the last 30-plus years has provided! From a group of half dozen or so arguing at the American Heart Association Scientific Sessions as to what was the true duration of the H-V interval, to the keynote lecture

on pacing I was privileged to give at the very first North American Society of Pacing and Electrophysiology (NASPE) meeting in 1980 attended by maybe 27 people, to the most recent Heart Rhythm Society (HRS) meeting with over 12,500 attendees, there has been excitement at all levels, molecular, ionic, genetic, in vitro, in vivo, and clinical. We have mined the riches offered by the study of cardiac electrical phenomena and that is what this book captures. It offers a true bridge between the basic and clinical, with insights that few texts can claim. To all for whom the squiggles of the electrocardiogram tantalize with further insights into the electrophysiology of the heart, this book offers a wonderful guide—a searchlight—into the incredible electricity that makes us tick. I compliment the editors and the authors for a wonderful job. We've come a long way, baby, and it is awesome to read about it between the covers of this book!

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