VIEWPOINT

HRS 40th anniversary viewpoints: A warm stroll down cardiac electrophysiology lane

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Regarding the 40th anniversary of the North American Society of Pacing and Electrophysiology (NASPE)/Heart Rhythm Society (HRS), I was pleased and honored to accept the invitation to contribute a viewpoint article to Heart Rhythm. The invitation asked me “…to contribute a viewpoint article describing my role in the early days of NASPE, my contribution to the development of clinical electrophysiology (EP) as a subspecialty, and my mentorship of young investigators.” What follows is a try.

My role in the early days of NASPE: With the founding of NASPE in 1979, I, along with many others, became a founding member. The initial presidential leadership of the society, Drs J. Warren Harthorne (1979–1981), Seymour Furman (1981–1982), Bernard Goldman (1982–1983), and Robert Hauser (1983–1984), were all prominent in the pacemaker world. But in 1982, I was invited to enter the leadership as the second vice president. As a result, I became the first vice president during the tenure of Bob Hauser. And in 1984, I became the first NASPE president who was primarily a cardiac electrophysiologist. The initial yearly meetings of NASPE were held one day before the annual scientific session of the American College of Cardiology in the same city as the latter meeting. As the first vice president, and therefore as the program committee chairman, I was responsible for organizing the first NASPE meeting held independent of the American College of Cardiology meeting. That meeting was held in New York City. In my capacity as program chairman, I contacted as many EP colleagues as I could, not only in the United States and Canada but also around the world, and asked them to participate. We were able to put together a superb program, which included prominent invited speakers. The launch of our independent scientific sessions was successful. The following year during my presidency, the annual NASPE scientific sessions were held in Toronto, Canada. This meeting was even more successful, further establishing NASPE’s role as an important part of the cardiac EP community. During the meeting, when I officially turned over the presidential gavel to Dr Jerry Griffin, as part of his formal remarks, he commented that I put “E” in NASPE. Not surprisingly, I was very flattered by that remark, but truly, it was a group effort of the society members that made it work. And, in the succeeding years, superb leadership and a growing membership have continue to make NASPE, now HRS, an important part of our profession.

Regarding “… my contribution to the development of clinical EP as a subspecialty,” probably that is for others to comment. However, I can say that there are many who contributed to the development of clinical cardiac EP, and I am proud to have been one of them. Also, I can share some personal insights and observations. During my house staff training at Baltimore City hospitals, I got very interested in cardiac arrhythmias. At that time, cardiac EP had not yet been established as a clinical subspecialty. During a 4-month elective as a medical resident in the Johns Hopkins Cardiology Welcome Laboratory, Dr Richard Ross, then the Chief of Cardiology, advised that if I was interested in pursuing training in cardiac EP, I should not be afraid to do so in a basic laboratory. The possibility of working with Dr Brian Hoffman immediately came to mind. I knew him when I was a medical student at SUNY Downstate and knew he had recently moved to Columbia University as the David Hosack Professor and Chairman of the Department of Pharmacology. Fortunately for me, Dr Hoffman offered me a training position.

The 6 years I spent at Columbia, first as a postdoctoral fellow and then as a junior faculty member, were an extraordinary experience and my good fortune. So many good things happened, including Dr Hoffman’s mentorship; doing studies first in the animal laboratory and then also studies in patients during open heart surgery; training in clinical cardiology; interactions with colleagues such as Mike Rosen, Bob Myerburg, Tom Bigger, and Andy Wit; frequent interactions with Dr Paul Crainfield, then at the Rockefeller Institute in New York City; and a long series of unique sessions with Dr David Scherf, Emeritus Professor at New York Medical College. All this prepared me to “go it alone,” which I did by accepting Dr Thomas James’ invitation to join the cardiology section at the University of Alabama at Birmingham Medical Center. Getting a little ahead of my story, while in Birmingham, I was fortunate to have a sabbatical in the...
laboratory of Dr Maurits Allessie in Maastricht, The Netherlands. There, I learned how to do simultaneous multi-site mapping of the rhythm of the heart and also developed the canine sterile pericarditis model of atrial fibrillation and atrial flutter. Clearly, I had the good fortune to receive superb mentoring in superb research environments, both priceless.

After arriving in Birmingham, besides doing studies in the clinical EP laboratory and my animal research laboratory, I had a very strong clinical and research relationship with the cardiac surgical team led by Dr John Kirklin. Intraoperatively, we did electrophysiological mapping; postoperatively, we used the epicardial atrial and ventricular wire electrodes, temporarily placed by the surgeons at the time of surgery, to diagnose, treat, and study postoperative arrhythmias, particularly atrial fibrillation and atrial flutter. All this gave us insights into the mechanism and treatment of many types of arrhythmias, which, in turn, led us to describe overdrive pacing algorithms to interrupt or control postoperative tachycardias. And this work (which began at the University of Alabama at Birmingham and continued with my move to Case Western Reserve University in Cleveland, OH) ultimately led us (including Drs Bill MacLean, Rick Henthorn, Vance Plumb, Ken Okumura, Brian Olshansky, Andy Epstein, Pedro Brugada, and Hein Wellens, the latter 2 from my time on sabbatical in Maastricht) to the recognition and description of pacing entrainment and interruption of reentrant tachyarrhythmias. It is very gratifying that the concept and clinical use of entrainment has grown to where it is now a standard part of the study of tachycardias in the clinical cardiac EP laboratory. Our postoperative use of the temporary epicardial wire electrodes after open heart surgery also led us (Dr Bill MacLean and me) to publish a book, *Diagnosis and Treatment of Cardiac Arrhythmias Following Open Heart Surgery*, which included the pacing algorithms we had described to interrupt reentrant tachycardias. As an aside, the latter, never patented, were quickly adopted (and later improved upon) by the pacemaker industry.

Regarding my mentorship of young investigators, I am not sure I have anything unique to provide. Starting with my 14 years in Birmingham and continuing during my now 33 years (and counting) in Cleveland, I have been privileged to mentor quite a large number (I have lost count) of wonderful young investigators, both clinical and nonclinical, from around the world. For me, it has been a wonderful experience, and truly, they all have made me better. The excitement of discovery never fades.