LETTER FROM THE EDITOR IN CHIEF

Dear Readers,

In this issue of the Journal we have two very provocative articles this month that particularly caught my attention. Both of these articles are also at the front and center of what is “hot” in electrophysiology at this time. The first article is from Dr. Lovelock and colleagues from Emory entitled “ICD Leads Prone to Failure: Weighing the Risks at the Time of Pulse Generator Exchange.” The second very poignant article is from Dr. Narayan and coworkers from San Diego called “Focal Impulse and Rotor Modulation for Paroxysmal Atrial Fibrillation.”

In Dr. Lovelock’s article he squarely approaches the subject of whether to replace the implantable cardioverter-defibrillator (ICD) shocking lead at the time of generator replacement in patients with a Sprint Fidelis or Riata lead. Certainly, if a lead acutely fails it is a simple decision to make to replace the lead. Alternatively, if a “recalled” lead is functioning normally in a primary prevention ICD patient, with plenty of battery life still remaining, it really does not make much sense to replace the lead. The real challenge is whether or not we should preemptively replace a Fidelis or Riata lead when the ICD pocket will be opened anyway for a generator replacement.

This is a conversation I have had with many patients and it is never an easy discussion. Should we replace the lead? If we choose to replace the lead, should we extract the old lead or just abandon it? What is the risk of extraction versus orphaning a Fidelis or Riata lead? Unfortunately, this is often a judgment call between the physician and the patient.

I was particularly impressed with this article about their discussion of the potentially fivefold increased lead fracture risk of Fidelis following generator replacement. They suggest that perhaps subclinical Fidelis fractures could become destabilized to become overt clinical fractures following generator replacement. Although Medtronic states that generator exchange is not associated with lead failure, data presented in this article make a compelling argument that this may not be the case. If this is indeed true, then it may be wise to prophylactically replace the Fidelis lead at the time of generator replacement in most patients. If the decision is then made to replace the lead at generator replacement, then the next question is to extract or orphan the Fidelis lead. Fortunately, the Fidelis lead is extracted relatively easily at experienced centers with little risk of complication. Thus, for our younger patients the lead should probably be extracted.

The Riata lead is a completely separate issue to consider at the time of generator replacement. Fortunately, we have not seen any clear evidence yet that generator replacement increases the subsequent risk of lead failure with Riata. However, given that the Food and Drug Administration has now mandated that all Riata leads be evaluated by fluoroscopy, I suspect that this has significantly increased patient anxiety with this lead. Thus, with this increased anxiety of knowing you have an externalized conductor by fluoroscopy, many patients will likely want this lead preemptively replaced at the time of generator replacement. If the decision is made to replace the Riata lead then the follow-up question of whether to extract or orphan is even more problematic. We have heard many Riata extraction horror stories, for this lead can be especially difficult to extract without having the entire lead unravel. Riata extractions should definitely only be attempted at very experienced centers. I must admit that in my practice I am more conservative in recommending extraction of Riata leads.

The second article I would like to discuss concerns rotor mapping for atrial fibrillation. As I have commented on in previous letters, if this technology pans out for atrial fibrillation it could truly represent the holy grail of atrial fibrillation ablation. This discovery could be as significant as pulmonary vein isolation for the treatment of paroxysmal atrial fibrillation. In this article, Dr. Narayan and colleagues did an excellent job of describing the technology and sharing with us the data that have been generated thus far with this mapping system.

As we have used this technology we can certainly attest that there is something to this technology. Unfortunately, the greatest limitation of rotor mapping is from the archaic Constellation basket mapping catheter. This catheter was developed approximately 20 years ago by Boston Scientific with few changes over the years. This contact mapping basket often does not fit the very enlarged left atria that we typically see with ablation of the more persistent forms of atrial fibrillation. The second limitation of the Constellation basket mapping catheter is that the base of the basket
catheter does not have any electrodes. Thus, the left atrial septum is a blind spot with this catheter. Fortunately, this technology limitation is being addressed by Topera and they will soon be introducing their own line of basket mapping catheters which will be tailored to the different left atrial geometries that we may encounter and it will also have electrodes at the base, thus allowing visualization of potential rotors on the left atrial septum.

To date, we have performed rotor ablation in seven patients at our center. These cases were all performed during the winter and spring of 2012, so we are now coming up on 1 year of follow-up data. All of these patients are free of atrial fibrillation and are off antiarrhythmic drug therapy. Two patients required a redo ablation procedure in which we found reconnection of pulmonary veins. With reisolation of pulmonary veins, these patients have not had any further atrial fibrillation.

Most of our rotor atrial fibrillation ablation cases were in patients with persistent atrial fibrillation. Rotors were identified in multiple locations within both the left and right atria. We are definitely excited about performing more of these procedures in the upcoming few months.

We hope that you have enjoyed this month’s issue of the Journal, and as always we welcome any comments or suggestions you may have.

Sincerely,

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