EP Insights

Lessons Learned in 18 Years of Device Implant and Follow Up

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Over the years that we practice medicine, all doctors build up a mental list of tips or "pearls." These are pointers, typically not seen in journal articles or books, which color the way we practice. Many of these tips were passed down during our training; some we learn from our colleagues. Still others are original creations. As a private practice (and now hospital employed) electrophysiologist, I infrequently have the opportunity to share my tips with other physicians. When *EP Lab Digest*® offered me the opportunity to write, I thought I'd brainstorm a list of these "lessons learned" with a focus on my passion of cardiac device implantation and follow up.

I hope you find these tips informative and at times provocative. Forgive me if some of this is too obvious. I welcome any input from the readers. Please feel free to comment or contact me on Twitter at @EJSMD. I look forward to hearing your feedback.

- Your unswerving mission as a doctor should be to make sure every patient you treat gets high quality care. This may have little to do with the metrics with which others judge you.
- When a patient gets to 90 years of age, they get to make all the rules. A doctor's job at this point is to do as little as possible.
- Newer isn't always better. Gradually adopt new pacer and ICD technology — it usually takes years in the marketplace before we know if a product is good or bad.
- Pulling the left ventricular lead sheath is similar to taking a golf swing. It demands your full attention, and everyone in the room should hold still and stay quiet until it's done.
- Don't ever forget how unnatural it seems to our patients to have a big hunk of metal implanted into their body.
- Treat your reps with respect, but expect excellence. They are an important part of your care team.
- If you haven't discussed the option of ICD downgrade or abandonment with your elderly patients prior to generator replacement, shame on you.
- When upgrading a pacer to an ICD, don't be afraid to reuse or preserve the original RV pacing lead. It's probably a better lead than the one you're putting in.
- Choose which vendor you work with in a principled manner. Consider product, price, support and value-added service in each device implant decision.
- It is (almost) never appropriate to get upset at a nurse.
- Strive for a shallow angle of entry when obtaining venous access (this creates less flexion stress on the lead).
- A left ventricular lead on the septum or in the apex with a good threshold is usually worse than no lead at all.
- There aren't too many CRT super-responders with RBBB.
- Seeing sternal wires during a device implant is a good thing.
- DF-4 ICD technology takes about 15 seconds off an ICD implant and adds a whole new set of potential problems.
- Work hard to keep your hospital out of restrictive contracts, and don't use any device model or make 100% of the time.
- Make your device pocket just above the facial layer, not within the subcutaneous fat.
- Pay attention to the quality, timing and consistency of your pacer/ICD lead electrograms throughout the implant. We find it very helpful to display these continuously on our EP recording system right below the surface ECG.
- It's OK to work fast. Just know when it's time to slow down.
- Empiric VT zones in primary prevention ICDs are almost always a bad idea (thank you MADIT-RIT for proving this).
- An ICD shock hurts, but it's not as bad as being kicked by a horse (according to one of my veterinarian patients).
- Don't hold fast onto dogma without proof. Recall that the DAVID trial was designed to show the *benefits* of dual chamber pacing in ICD patients.
- If you implant a pacer in a 20 year old, remember that someone may have to care for those leads for 50 years.

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- Pay attention to the timing of the electrogram on your LV lead. Long Q-LV time (i.e., LV activation late in QRS complex) correlates with favorable outcome.
- Work hard to save your hospital money without compromising your patients' care.
- If you can get the left ventricular lead implanted in the time it takes to play "Rapper's Delight," it's going to be a good day.
- Never become dependent on one of your vendors.
- Fewer leads on a device means fewer things can go wrong.
- Make sure to keep your long-term patient's device programming up to date with contemporary standards.
- When it comes time for pulse generator replacement, make sure you've seen your patient often enough that they will still recognize you.
- If someone could grant me only one wish about CRT, it would be to eliminate the problem of diaphragmatic stimulation.
- The most important attribute in an ICD or pacer lead is a long established track record of reliability.
- When checking the LV threshold on a biventricular pacemaker, make sure not to be fooled by right ventricular capture from anodal stimulation.
- A lot of time can be wasted looking for the perfect P wave.
- I've never had a patient complain to me that their ICD lead is too thick.
- If there's one piece of tech I hope I never have to do without, it's our Site-Rite ultrasound for axillary vein access.
- Despite all of its legitimate flaws, it's a really good thing we have amiodarone available for our patients.
- Work hard — really hard — to make your patients like you. It will pay off later. Much of what we do is about relationship building, and this is one way to keep you from being replaced by an iPhone app.
- Always say please and thank you to your scrub tech or nurse. "Scalpel, *please*" is much more polite than what we see on TV.
- The best way to predict the future is to look carefully at the past. Never neglect to perform a good chart review.
- It's appropriate to be friendly with device representatives. They should not, however, be your friends.
- For single chamber pacer pulse generators, it's rarely cost effective to use the top tier model.
- Never walk into a patient's room until you know their story well enough that you can interview them face to face. Keep your nose out of the chart as much as possible.
- No patient *needs* a primary prevention ICD any more than they *need* to wear a seatbelt. We are our patients' doctors, not their parents. Counsel with honesty and respect. ■