How to temporarily pace a pacemaker-dependent patient after lead extraction for device infection?

We read with interest the work by Pecha et al. recently published in the Journal. The authors aimed to evaluate a new option of temporary pacing (TP) in pacemaker-(PM)-dependent patients undergoing lead extraction (LE) for a cardiac implantable electronic device (CIED) infection, that was used to delay re-implantation and improve safety and freedom from re-infection in follow-up.

An active-fixation lead (AFL) was ipsilaterally implanted and connected to an externalized PM, in this way keeping the infected extraction side for TP and preserving the site of definitive device re-implantation. They did not observe infection recurrences, nor lead dislocation after a mean follow-up time of 21.1 months in spite of the long duration of TP (median 12.7 days, range 6–24).

Similar good results were found in another recent experience, in which the authors used an AFL for TP after LE, choosing immediately the contralateral side (internal jugular vein) to change the site of pacing since the early post-extraction phases.

In both experiences, the prolongation of antibiotic therapy (AT) using a reliable TP was considered the cornerstone for a proper healing. Although taking opposite directions, both strategies had a clear rationale. The first choice (TP from the ipsilateral, rather than contralateral side) is preferred in our institution, but we do not have the answer about the best strategy. We do not even know if one strategy fits the local infection setting better and the other one the endocarditis. A multicentre prospective randomized controlled trial could give answers about the best modality of TP after LE.

While waiting for these data, we think that some points of the abovementioned paper merit to be commented upon.

First, in the Methods Section (i.e. ‘Surgical technique’), it is not clear if the AFL was implanted before or after LE; in the first unrealistic option, the implant would have been impossible in two cases, because of venous occlusion. In cases of venous occlusion, our experience demonstrated that mechanical sheaths warrant the same results as laser-powered sheaths (used in all cases by the authors); considering the cost of the definitive AFL used for TP, the cost-effectiveness of mechanical dilatation appears even more attractive.

Secondly, if the AFL has been implanted after LE, did the authors use the LE sheath as a channel to introduce the guidewire or did they perform a new subclavian puncture? In terms of re-infection risk, the second approach is certainly safer than using the ‘retaining guidewire technique’, especially in the case of septic thromboflebitis, which is often very difficult to diagnose.

Then, a median of AT duration of 16.5 days (range 6–42) and a median of duration of TP of 12.7 days (range 6–24) is reported: we wonder if the AT was started only at the moment of LE. In our opinion, one of the cornerstone for infection eradication is a proper duration of the pre-operative AT. Separate data about AT duration in the setting of local and systemic infection would be interesting. Moreover, did they start with cephapoxilin even in cases of sepsis and endocarditis (particularly numerous in this cohort)? Which kind of cephalosporin did they use? The question is of interest because it is known that some broad-spectrum cephalosporins (as those they report to have used), are less effective in staphylococcal infections, that represent particularly numerous in this cohort.

In conclusion, the best way to manage TP after LE for CIED infection in PM-dependent patients remains a subject of interesting debate and research, given the high risk of re-infection of this kind of patients.

Conflict of interest: none declared.

References


Lack of efficacy of radiofrequency catheter ablation in Andersen–Tawil syndrome: are we targeting the right spot?

Andersen–Tawil syndrome (ATS) is associated with a high arrhythmic burden as demonstrated recently by Delannoy et al. in this Journal. Almost all subjects (91%) had very frequent ventricular arrhythmias (>10 000 premature ventricular contractions (PVCs)/day) including episodes of bigeminy and non-sustained ventricular tachycardia. As in other hereditary sudden cardiac death syndromes, it seems appropriate to eliminate these arrhythmias by means of radiofrequency catheter ablation (RFCA). To our knowledge, there is no publication of a successful RFCA in ATS. Delannoy et al. reported that RFCA was unsuccessful in the five patients in which it was attempted. In our Institution, during the follow-up of a large family with a genetically confirmed diagnosis of ATS, one of them became symptomatic (syncope), and an implantable cardioverter-defibrillator (ICD) was implanted in 2005 due to inducibility of ventricular fibrillation in an electrophysiological study. Intracavitary electrograms from the ICD showed frequent PVCs initiating the episode of ventricular fibrillation. In the first procedure, two ectopic sites in the left ventricle were targeted (anteroseptal and anterolateral) guided by electroanatomical mapping, also, ablation of both Purkinje bundles was added. In the following year, she was submitted to a second procedure after a recurrent appropriate discharge of the ICD. In this time, RFCA was delivered in the postero-septal and apical zones, without elimination of the PVCs.

These apparently large areas of arrhythmogenicity could be the basis for the suggestion expressed by Dr Wilde in an accompanying