Pacemaker endocarditis: Approach to lead management

Endocardite sur pacemaker : une stratégie d’extraction de matériel

Peggy Jacona,*, Pascal Defaye, Frédéric Thony

Department of cardiology, university hospital of Grenoble, BP 217, 38043 Grenoble cedex 09, France
Department of radiology, university hospital of Grenoble, Grenoble, France

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A 62-year-old man presented with severe pacemaker endocarditis after conservative treatment (pacemaker replacement and partial system removal, contralateral pacemaker implantation) in the context of pocket infection. This strategy leads to a complex lead-extraction procedure.

After generator removal, the two right-sided functioning leads (atrial and ventricular, implanted in 2005) were extracted by a superior transvenous approach using lead-locking devices (LLD® 2, Spectranetics®).

The two left-sided leads, implanted in 1998, cut in their proximal portion in the subclavian vein without possible access by a subclavian approach, were extracted during the same procedure from an inferior, femoral venous approach. The ventricular lead was removed with a Byrd Needle’s Eye Snare® inserted into a 16-French sheath (Cook®). The atrial lead was impossible to remove with a double lasso (the loop was not quite large enough to permit insertion). Using a 6-French angled catheter (multipurpose, Medtronic®), inserted into the 16-French sheath, a guide was inserted into the loop over the atrial lead. The guide was caught with the lasso and returned to the skin. The two arms of this self-made lasso were inserted together into the 16-French sheath. Using a strong counter-traction, the atrial lead was extracted successfully.
Figure 1. Preoperative chest X-ray. Two functioning leads are connected to the pacemaker generator in the right pectoral area. Two non-functioning leads are cut and abandoned in the left subclavian vein.

Figure 2. Extraction of the left-sided atrial lead by the femoral approach. A guide is inserted over the atrial lead loop and returned into the sheath in order to remove it.

Figure 3. Postoperative chest X-ray. A new pacemaker system is implanted via an epicardial approach.
All leads were extracted without complication. A new permanent epicardial pacemaker was implanted on the same day. There is no debate about the absolute necessity to remove all the leads in case of pacemaker endocarditis [1]. Original tools can be useful for completing a successful lead extraction procedure (Figs. 1–3).

Conflicts of interest

Nothing declared.

Reference