Pacemaker lead malposition: When right is not right!

Malposition de sonde de pacemaker: respecter la droite!

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A 75-year-old white male patient, with hypertension and symptomatic sinus bradycardia after dual-chamber pacemaker placement (Adapta DR Pacemaker ADDR01, Medtronic, Minneapolis, MN, USA) 31 months previously, presented with severe headache and was found to have subarachnoid haemorrhage (SAH). A 12-lead electrocardiogram done for routine workup showed a right bundle branch block (RBBB) pattern and right axis deviation (Fig. 1). A transthoracic echocardiogram showed that the right ventricular (RV) pacemaker lead had crossed the foramen ovale into the left atrium, passing through the mitral valve, and was embedded in the inferolateral wall of the left ventricle (LV) (Fig. 1). A chest X-ray in lateral view showed an anteriorly directed lead in the LV. Management was a therapeutic dilemma; lead extraction was advised (Fig. 1).

The incidence of ventricular lead malposition is unclear. Most cases diagnosed late are due to misinterpretation of initial chest X-rays. Okmen et al. demonstrated RBBB pattern in true RV pacing in 8.3% of a cohort of 300 patients, which was reversed partially by the Klein manoeuvre [1]. A superolaterally directed lead on pulmonary artery chest X-ray in lateral view showing a posteriorly pointing lead tip and a 12-lead electrocardiogram in ventricular pacing mode with signs of RBBB must be investigated with two-dimensional echocardiography. Routine pacemaker interrogation may or may not be helpful. Complications of LV leads are systemic thromboembolism, mitral valve leaflet perforation, mitral insufficiency, aortic valve endocarditis, diaphragmatic pacing and loss of lead capture. In one study, the incidence of thrombotic events was found to be as high as 37% [2]. The management of LV lead malposition is usually conservative, with lifelong anticoagulation. Percutaneous and

Abbreviations: LV, left ventricle; RBBB, right bundle branch block; RV, right ventricular; SAH, subarachnoid haemorrhage.

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Figure 1. Twelve-lead electrocardiogram done for routine workup showed right bundle branch block pattern and right axis deviation. A chest X-ray in lateral view showed an anteriorly directed lead in the left ventricle. A transthoracic echocardiogram showed a right ventricular pacemaker lead embedded in the inferolateral wall of the left ventricle.

transthoracic lead extractions have had no major success but are an option for patients who have thrombosis despite being on anticoagulation and for those who have cardiac surgery for other conditions. We could not anticoagulate our patient due to SAH, hence we advised percutaneous lead extraction.

Disclosure of interest

The authors have not supplied their declaration of conflict of interest.

References
