Malposition of pacing lead into the left ventricle: a rare complication of pacemaker insertion

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DESCRIPTION

A 79-year-old woman presented with infection and erosion of a permanent pacemaker, which had been inserted 15 years earlier. A chest X-rays showed an abnormal position of ventricular lead, suggesting it was in the left rather than right ventricle (figure 1A, B). Transoesophageal echocardiography showed that it

was positioned in the left ventricle due to passage through a patent foramen ovale (figure 1C). The active fix lead was inserted just beneath the mitral valve (figure 1E), a feature also appreciated on chest CT scan (figure 1D). We speculated that thrombo-embolic complications were not encountered as the patient had been anticoagulated for atrial fibrillation.

Figure 1 (A) Chest X-ray posteroanterior view showing the ventricular lead lies superior than usual course. (B) Chest X-ray lateral view showing posteriorly directing ventricular lead, suggesting a left ventricular site. (C) Transoesophageal echocardiogram (TOE) three-dimensional image showing ventricular lead passing through the patent foramen ovale to the left atrium. Arrow pointing towards the pacing lead (IAS, Interatrial septum). (D) CT scan of the chest showing the diffraction from the pacing wire in the left ventricle (arrow pointing towards left ventricular lead). (E) TOE two-dimensional—four-chamber view showing the pacing wire passing through the right atrium into the left atrium and left ventricle.

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Learning points

- ▶ Inadvertent insertion of pacing lead into the left ventricle is rare and due to patent foramen ovale, atrial and ventricular septal defects, perforation of interatrial or interventricular septum, cannulation of subclavian artery or branch of the coronary sinus.¹
- ▶ A malpositioned pacing lead can cause several complications including systemic thromboembolic events, distortion or perforation of the mitral valve causing mitral regurgitation, damage to the left ventricular wall or left-sided valvular endocarditis.²
- ▶ Postpacing assessment of posteroanterior and lateral chest X-rays is essential to identify this complication.

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REFERENCES

- 1 Bauersfeld UK, Thakur RK, Ghani M, *et al.* Malposition of transvenous pacing lead in the left ventricle: radiographic findings. *AJR Am J Roentgenol* 1994;162:290–2.
- 2 Seki H, Fukui T, Shimokawa T, *et al.* Malpositioning of a pacemaker lead to the left ventricle accompanied by posterior mitral leaflet injury. *Interact CardioVasc Thorac Surg* 2009;8:235–7.

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