

## CARDIOVASCULAR FLASHLIGHT

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### It paces right but not in the right space!

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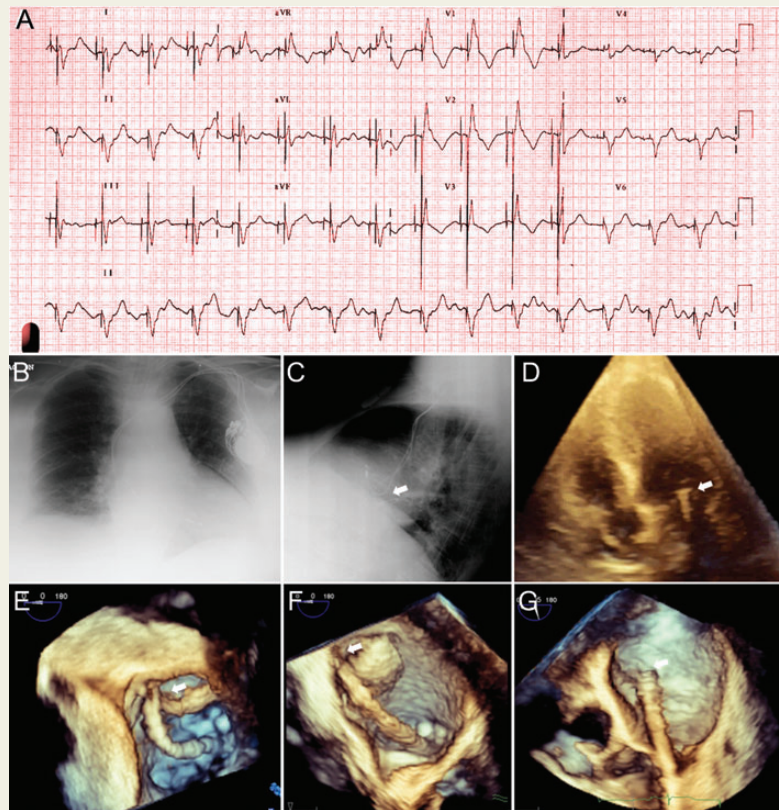
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A 77-year-old woman with a clinical history of diabetes mellitus, hypertension, dyslipidaemia, symptomatic sinus node dysfunction, and a dual-chamber permanent pacemaker implanted in June 2011 was referred to our hospital for a routine clinical check-up.

The electrocardiogram (EKG) showed right bundle branch block (RBBB) pattern during dual chamber pacing (Panel A). An RBBB-paced pattern suggests ventricular lead malposition that was confirmed on chest X-ray where a posterior deflection of the pacemaker electrode on the lateral view (Panels B and C, arrow) was noted. Transthoracic echocardiography showed abnormal lead position in the apical view with pacemaker lead localized in the left ventricle (LV) crossing the mitral valve (MV) (Panel D, arrow). Transoesophageal echocardiogram was thus necessary and sufficient to clarify the real route for the lead displacement. The 3D images show indeed that the electrode from the right atrium traversed the aneurismatic oval fossa in the interatrial septum through the foramen ovale (Panels E and F, arrow) into the left atrium and then reached the LV through the MV orifice (Panel G, arrow). The MV apparatus had normal function, with no damage to the valve leaflets and no signs of thrombus formation on the pacemaker lead.

Malposition of a pacemaker lead in several locations has already been reported but the diagnosis is often accidental. Twelve-lead EKG during ventricular pacing at the end of pacemaker implantation as well as chest X-ray should be routinely performed in order to confirm correct lead position and avoid potential serious complications that may occur from ventricular lead malposition.



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