Images in Cardiovascular Medicine

Malposition of Ventricular Pacing Lead via a Venoarterial Course

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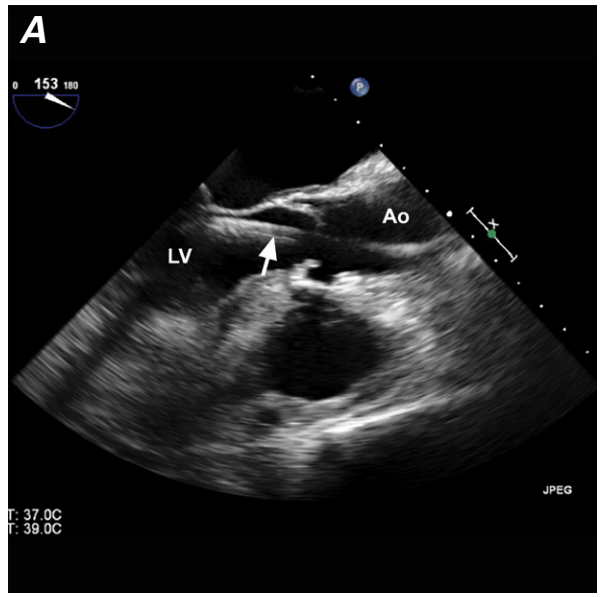
A 70-year-old woman, told that her pacemaker lead was lying over her aorta, presented for a second opinion. Four years earlier, after a syncopal spell, she had undergone dual-chamber pacemaker placement. Transthoracic echocardiograms revealed that her ventricular pacemaker lead was in her left ventricle (LV). To determine the course of the ventricular lead, transesophageal echocardiography and computed tomographic angiography of the chest were performed (Fig. 1). The lead originated in the subclavian vein but then entered the left common carotid artery,



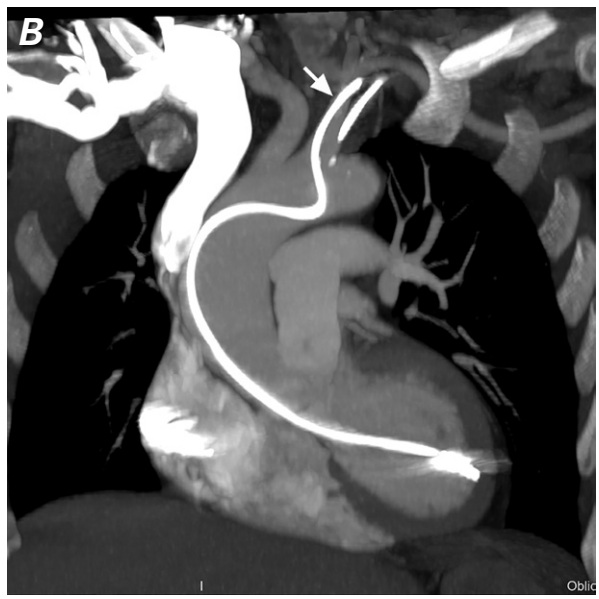


Fig. 1 ***A****) Transesophageal echocardiogram (long-axis view) shows the ventricular pacing lead (arrow) traveling across the ascending aorta (Ao) and into the left ventricle (LV).* ***B****) Computed tomographic angiogram of the chest (coronal reformation) shows the lead entering and passing through the proximal left common carotid artery (arrow), continuing through the transverse aortic arch, and terminating in the lateral wall of the LV.*

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approximately 3.3 cm from its ostium. The lead then coursed through the transverse aortic arch, proximal ascending aorta, and aortic valve, terminating in the distal lateral wall of the LV. The right atrial lead followed the usual venous course into the right atrium. After hearing the risks and benefits of surgically removing the lead from the left common carotid artery, the patient chose lifelong anticoagulation for stroke prophylaxis.

Comment

Malposition of a ventricular lead in the LV occurs infrequently,[1,2] and its prevalence has not been reported. Although the lead in our patient traversed the aortic valve, inadvertent crossing of the interatrial septum has been reported more often.[3] Potential complications of lead malposition in the LV include systemic thromboembolism, perforation of the aortic or mitral valve leaflets, arterial thrombosis, and loss of capture.[4] If malposition is diagnosed immediately after pacemaker implantation, lead removal may be considered.[5] Otherwise, the lead should be left in place and lifelong anticoagulation prescribed to reduce the risk of systemic embolization.[4]

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