

IMAGES IN INTERVENTION

Pacemaker Lead Entrapment Complicating Transcatheter Closure of a Patent Foramen Ovale



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Trascatheter cardiovascular interventions are nowadays more frequently and safely performed, thus leading to populate the heart with medical devices. Here, we describe an unusual complication following percutaneous closure of a patent foramen ovale (PFO) with an atrial septal occluder. A 52-year-old woman with history of transient ischemic attack was found to have a PFO associated with an atrial septal aneurysm (an asterisk indicates the atrial septal aneurysm in diastole [Figure 1A] and systole [Figure 1B]; and color Doppler [Figure 1C]). Other comorbidities included sinus node dysfunction, paroxysmal atrial fibrillation, and status post dual-chamber pacemaker. She was then referred for percutaneous PFO closure with intracardiac echocardiography guidance (Figure 1D). After placement of a 30-mm Amplatzer septal occluder (AGA Medical Corporation, Golden Valley, Minnesota), it was noted that the right ventricular pacemaker lead was entrapped by the Amplatzer's right atrial disk (Figures 1E and 1F). Initial failed attempts to release the lead with a 6-F pigtail catheter

were performed from the femoral and right internal jugular vein (RIJV) access (8-F and 9-F, respectively) (Figures 1G and 1H). Subsequently, via the 9-F RIJV access, a 7-F cardiac biopsy sheath (Cordis, Johnson and Johnson, New Jersey) with a 5-F SOS Onmi Selective catheter (Angiodynamics, Latham, New York) were used to snare and release the ventricular lead, guided by different fluoroscopic projections (Figures 1I to 1K). Follow-up pacemaker interrogation disclosed preserved sensing and pacing thresholds as well as stable lead impedance. Our review of the literature found 2 similar cases (1,2). In the first case (1), a self-prepared pigtail catheter was used to hook up and release the ventricular lead. In the second case (2), a right heart biopsy forceps was used to capture 1 of the CardioSEAL PFO closure device's arms and successfully released the right atrial pacing lead.

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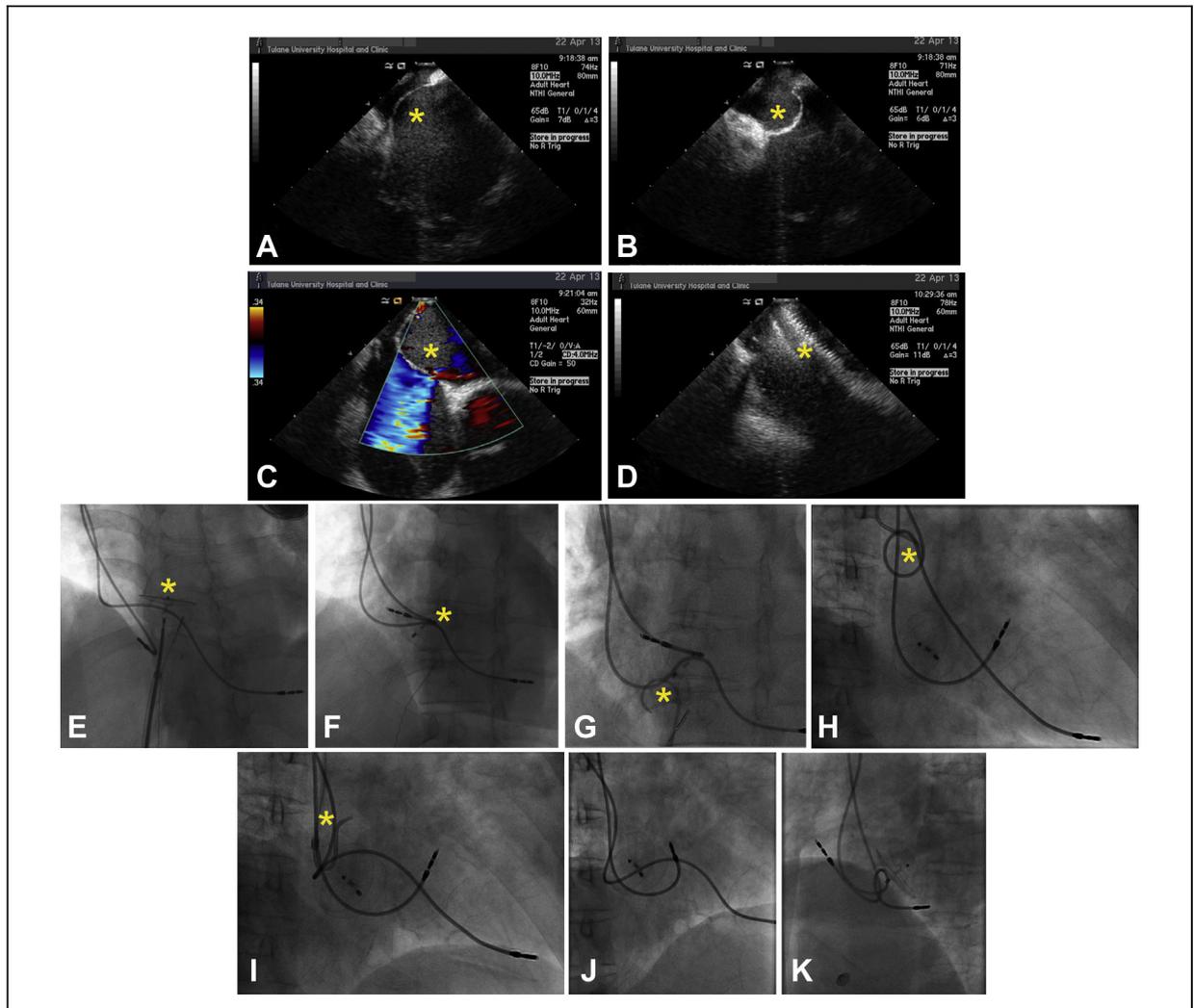


FIGURE 1 Pacemaker Lead Trapped by Amplatzer Septal Occluder

(A-D) Intracardiac echocardiography (ICE) images demonstrating an atrial septal aneurysm (asterisk) in diastole (A) and systole (B). Color Doppler images across the patent foramen ovale (asterisk in C). ICE-guided deployment of the Amplatzer device (asterisk in D). (E and F) Fluoroscopy view prior to deployment of the septal occluder (asterisk in E). Septal occluder following deployment exhibits pacemaker lead entrapment by the right atrial disk (asterisk in F). (G to K) Maneuvers to release the entrapped ventricular pacemaker lead. (G and H) Failed attempts from femoral and neck accesses with a pigtail catheter (asterisk) to release the ventricular lead. (I) A SOS Omni catheter was used to capture the right ventricular pacemaker lead and release it from the atrial disk. (J and K) Orthogonal projections of the pacemaker lead trajectory once released from the right atrial disk of the septal occluder.

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