

IMAGES IN INTERVENTION

Left Atrial Appendage Closure Device Implantation After Percutaneous Atrial Septal Defect Closure



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A 77-year-old man with atrial fibrillation was referred for consideration of left atrial appendage (LAA) closure device implantation. He had a recent intracranial hemorrhage and remained at high risk of bleeding with anticoagulation. He had undergone percutaneous atrial septal defect (ASD) closure 9 years earlier for a secundum ASD with right ventricular dilation. Transesophageal echocardiography (TEE) demonstrated a well-seated 18-mm Amplatzer ASD occluder (St. Jude Medical, St. Paul, Minnesota) with an adjacent area of interatrial septum inferoposteriorly and a single-lobe LAA (ostium diameter = 27 mm).

Via a right femoral vein approach, the atrial septum was punctured with a Brockenbrough needle and SL1 sheath using fluoroscopic and transesophageal echocardiographic guidance (Figure 1). Care was taken to avoid the ASD occluder while maintaining a favorable approach for LAA closure device delivery. A 14-F single-curve delivery sheath was advanced over an extra-support wire, and a 33-mm WATCHMAN LAA occluder (Boston Scientific, Marlborough, Massachusetts) was successfully deployed. On fluoroscopy and TEE, the device was seen to be well seated. The patient was

discharged on aspirin indefinitely and clopidogrel for 45 days.

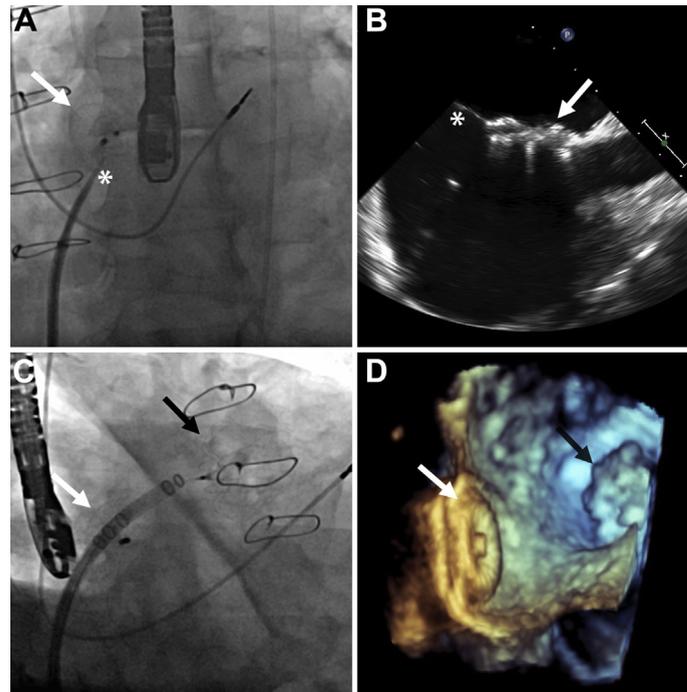
ASDs and atrial fibrillation frequently coexist, and the risk of atrial fibrillation and stroke persist after ASD closure (1). LAA occluder device implantation is an accepted therapy for patients with atrial fibrillation at risk of stroke or systemic embolism as an alternative to anticoagulation (2). However, an ASD or patent foramen ovale (PFO) repair or closure device is listed as a contraindication to LAA closure device implantation (3).

Nevertheless, transeptal puncture after ASD/PFO closure for the purpose of implanting an LAA occluder device has been performed with good short-term outcomes (4). Gafoor et al. (4) recommend inferoposterior puncture adjacent to the previous device, as was performed in this case. However, anterior and transdevice access is also possible in some patients. We recommend intraprocedural fluoroscopy and TEE to carefully assess the occluder device and interatrial septum.

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FIGURE 1 Procedural Fluoroscopy and Transesophageal Echocardiography

Transseptal puncture was performed inferior and posterior (*) to the previously placed 18-mm Amplatzer septal occluder (**white arrows**) under fluoroscopic (**A**) and transesophageal echocardiographic (**B**) guidance. A 33-mm WATCHMAN left atrial appendage occluder was deployed (**C**, **black arrows**) and its final position demonstrated by 3-dimensional transesophageal echocardiography (**D**).

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KEY WORDS atrial fibrillation, atrial septal defect, left atrial appendage closure, structural heart disease