Images in Cardiology: Electron Beam Angiography of Percutaneous Atrial Septal Defect Closure

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FIG. 1 (A) Pre-closure axial electron beam angiography (EBA) image showing a large ostium secundum atrial septal defect (ASD) with absent anterior rim (arrowhead) and defect size of 30.45 mm. (B) Post-closure axial EBA showing 34 mm Amplatzer Septal Occluder Device. RA = right atrium, LA = left atrium, Ao = aorta, RV = right ventricle.

FIG. 2 (A) Transesophageal echocardiography (TEE) showing ASD 26 mm in size with absent anterior rim (arrow). (B) TEE following device placement. (C) Stretched defect of 31 mm using Amplatzer sizing balloon. (D) 34-mm Amplatzer Septal Occluder deployed across the ASD.

A 39-year-old woman presented with complaints of shortness of breath on exertion and was found to have fixed splitting of the second heart sound and a systolic murmur. Electron beam angiography was performed prior to (Fig. 1A) and following (Fig. 1B) percutaneous closure. Balloon sizing (Amplatzer®, sizing balloon, AGA Medical Corp., Golden Valley, Minn., USA) showed a stretched diameter of 31 mm (Fig. 2C). Transesophageal echocardiography (Fig. 2A) showed an atrial septal defect 26 mm in size with adequate (> 5 mm) rims in all quadrants except at the base of the aorta. A 34-mm Amplatzer Septal Occluder Device® (AGA Medical Corp.) was placed. Electron beam angiography provided an accurate assessment of defect size and excellent visualization of adjacent cardiac structures including the aortic valve and pulmonary veins.