

## CASE IMAGE

## Aortic root erosion caused by an atrial septal defect occlusion device

## Atrial septal defekt okluder cihazıyla aort kökü erozyonu

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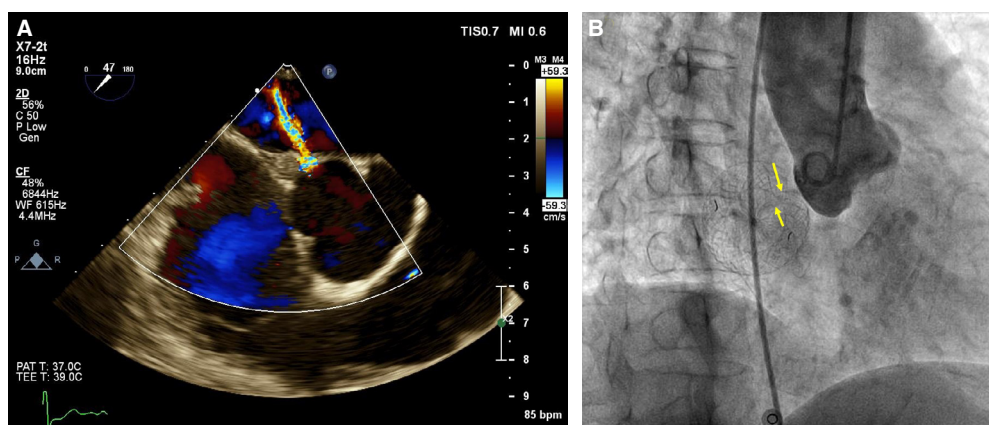
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A 65-year-old woman presented at the outpatient clinic with dyspnea on exertion (New York Heart Association functional class II). She had a history of hypertension treated with losartan and hydrochlorothiazide. Transthoracic echocardiography revealed a secundum type atrial septal defect (ASD) with left-to-right shunt and a pulmonary-to-systemic flow ratio of 1.9, right ventricular enlargement and an estimated systolic pulmonary pressure of 28 mmHg. Selective coronary angiography revealed insignificant coronary stenosis, and the left ventricular and aortic root injection revealed no abnormalities. Preprocedural transesophageal echocardiography showed a large oval ASD (15 mm at 90° and 8 mm at 0°) in the anterior-superior quadrant of the interatrial septum with sufficient rims (mitral rim: 14 mm, right upper pulmonary vein rim 20 mm, superior vena cava rim: 24 mm, inferior vena cava rim: 16 mm); however, the exception was the aortic rim, which was absent. All of the existing rims were firm. The length of the interatrial septum was 42 mm at 0° and 55 mm at 90°. The interatrial septum was not aneurysmatic and no other defect was observed. Right

heart catheterization was not performed due to sufficient echocardiography findings and the right ventricular enlargement. Instead, percutaneous ASD closure was planned. The ASD diameter in balloon sizing was 20 mm. The defect was closed with an ASD occluder (Nit-Occlud ASD-R PFM, stent size: 22 mm, disc size: 35 mm; PFM Medical AG, Koln, Germany), with no residual shunt. Transthoracic echocardiography performed on the 36<sup>th</sup> postprocedural day showed an abnormal continuous flow in the left atrium. Transesophageal echocardiography indicated erosion in the posterior wall of the aortic root (3 mm), in conjunction with a continuous flow from the aorta to the left atrium (Fig. A & Video 1\*). The connection between the aorta and the left atrium was confirmed with aortography (Fig. B & Video 2\*). There was no sign or symptom of an infectious process, and the laboratory data were unremarkable. The repair of the aortic root erosion was successful. In the case described here, a deficient aortic rim, the position of the ASD in the anterior-superior quadrant of the interatrial septum, which restricted the space for the ASD device, and the oval shape of the ASD may have contributed to this injury to the aortic root. The lock wire and the design of this device may also have played a role in this complication in the presence of the aforementioned geometrical properties. Aortic root erosion caused by an ASD occlusion device is an uncommon complication of ASD closure that should nonetheless be kept in mind.



**Figures– (A)** Transesophageal echocardiography image showing erosion in the aortic root caused by an atrial septal defect occluder, resulting in a connection between the left atrium and the aortic root. **(B)** Aortography image showing a connection between the left atrium and the aortic root in a patient with a history of atrial septal defect device occlusion.

\*Supplementary video files associated with this presentation can be found in the online version of the journal.