

CASE IMAGE

Percutaneous device closure of a ruptured aortic sinus of Valsalva aneurysm in a patient with a mechanical bileaflet aortic valve

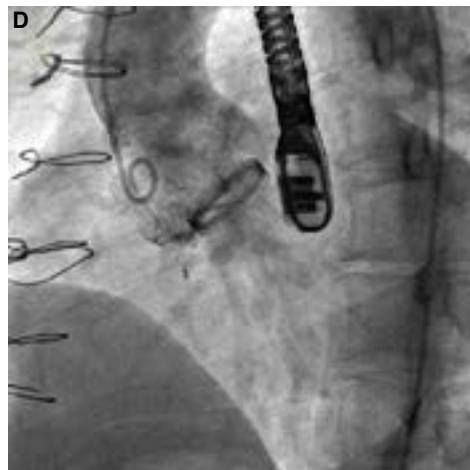
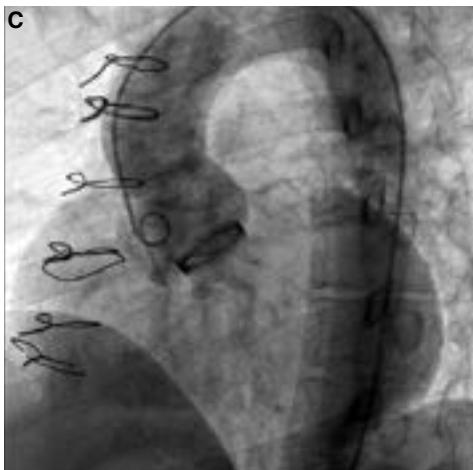
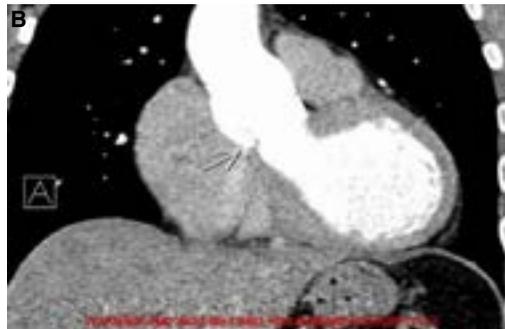
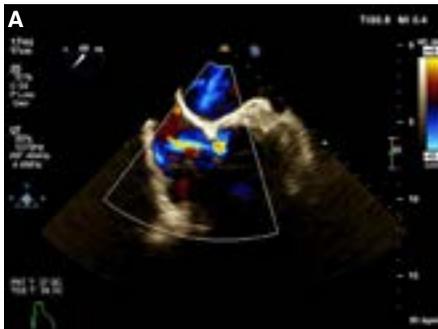
Mekanik biküspit aort kapağı olan hastada yırtılmış aort Valsalva sinüsü anevrizmasının perkütan transkateter yolla kapatılması

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A 35-year-old man was referred to the echocardiography laboratory for a routine evaluation of his mechanical aortic valve. He had a history of surgical ventricular septal defect closure 27 years earlier and aortic valve replacement with a mechanical bileaflet prosthesis (CarboMedics no: 25; LivaNova PLC, London, England) due to aortic valve regurgitation 16 years previously. Transthoracic and transesophageal echocardiography revealed mild systolic left ventricular dysfunction (ejection fraction: 45%), right ventricular enlargement and dysfunction, mild tricuspid regurgitation with an estimated systolic pulmonary artery pressure of 30 mmHg, a normally functioning aortic valve prosthesis without any paravalvular leakage, and a continuous turbulent flow from the noncoronary sinus of the aorta

into the right atrium, suggestive of a ruptured aortic sinus of Valsalva aneurysm into the right atrium (Fig. A, Video 1*). This was considered a new finding, since it had not been reported in previous echocardiography results. Computed tomography angiography imagery of the ascending aorta (Fig. B) was suggestive of device closure. Aortography demonstrated this pathology (Fig. C, Video 2*). The largest diameter in these imaging modalities was about 3 mm, both on the aortic side and the site of the rupture. A congenital cause was considered, as this is the most common etiology of this pathology. The ruptured sinus of Valsalva was closed with an Occlutech (Occlutech International AB, Helsingborg, Sweden) patent ductus arteriosus device occluder (size: 6/4 mm) and successful closure was confirmed with aortography (Fig. D, Video 3*) and transesophageal echocardiography. Follow-up transthoracic echocardiography after 1 month confirmed the appropriate site of the occluder device and the absence of complications.



Figures– (A) Continuous turbulent flow from the noncoronary sinus of the aorta into the right atrium seen during transesophageal echocardiography (short-axis view of the aortic valve), suggestive of a ruptured aortic sinus of Valsalva aneurysm into the right atrium; **(B)** Appearance of the contrast medium in the right atrium originating through an orifice in the aorta in a computed tomography angiography image; **(C)** Ruptured aortic sinus of Valsalva aneurysm into the right atrium as observed with aortography; **(D)** Closure of the connection between the aorta and the right atrium with a patent ductus arteriosus device occluder as seen during aortography.

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