Hematoma of the interatrial septum after surgery for a giant aneurysm of the sinus of Valsalva

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A sinus of Valsalva aneurysm (SVA) is a rare but potentially life-threatening condition. The prevalence of SVAs in the general population is estimated at 0.09% to 0.1% [1, 2]. In most patients, SVA is a congenital rather than acquired cardiac abnormality. Interatrial septum dissection and hematoma is a very rare complication. It may occur after aortic root or mitral valve surgery and casuistically after percutaneous interventions (ablation) or cardiopulmonary resuscitation [3].

A 66-year-old woman was admitted to the hospital for an extended diagnostic workup after an incidental finding of a giant SVA during routine transthoracic echocardiography (TTE) before cardioversion for paroxysmal atrial fibrillation. The patient underwent TTE (Figure 1A), transesophageal echocardiography (TEE), and cardiac computed tomography (including coronary computed tomography angiography), which revealed a giant non-coronary sinus of Valsalva aneurysm (97 × 55 mm) (Figure 1B), without aortic dissection, no significant lesions in the coronary arteries were reported. In addition, a bicuspid aortic valve without significant dysfunction and pericardial effusion of up to 8 mm were shown.

Surgical treatment (Figure 1C) included resection of the aneurysm from the side of the pericardium and reconstruction with a dacron graft sutured at the left ventricular outflow tract below the aortic annulus (as in David procedure). Next, the graft was sutured to the aorta, using the continuous suturing technique. Aortic valve repair was performed. Intraoperative TEE revealed no regurgitation. After declamping the aorta, bleeding from the roof of the left atrium appeared (the dissection occurred after cutting through the aneurysm as an extension of the cut after applying traction to the aneurysm sac). The dissection was sutured. Follow-up TEE showed severe aortic valve regurgitation requiring bioprosthetic aortic valve implantation (Hancock II, 23 mm).

After the procedure, we observed a worsening of kidney function, increased levels of inflammatory markers, second-degree atrioventricular block requiring temporary cardiac pacing, and atrial fibrillation and flutter. TTE revealed an interatrial septal hematoma (Figure 1D). The hematoma was caused by damage to the mitro-aortic curtain while which happened placing sutures on the non-coronary leaflet. During hospitalization, the patient was treated with antiarrhythmic drugs and antibiotics. Conduction disorders resolved and kidney function improved. Partial resorption of hematoma was also noted (Figure 1E). Cardiac rehabilitation was uneventful. Complete resorption of the hematoma was noted at the 1-year follow-up (Figure 1F). The patient is currently in good clinical condition and remains under the care of the cardiac center.

Both the SVA and interatrial septal hematoma may cause considerable concern. If an unruptured SVA is present, surgical treatment of symptomatic or large aneurysms is acceptable (the cutoff varies depending on the presence of other abnormalities, such as bicuspid aortic valve or connective tissue disease) [4]. On the other hand, the management of patients with intramural hematoma is debatable [5]. It seems that the choice of treatment should be guided by the patient's clinical condition and pericardial bleeding [5]. Both invasive and noninvasive cardiologists should have sufficient knowledge about both conditions to be able to make adequate decisions on patient management.

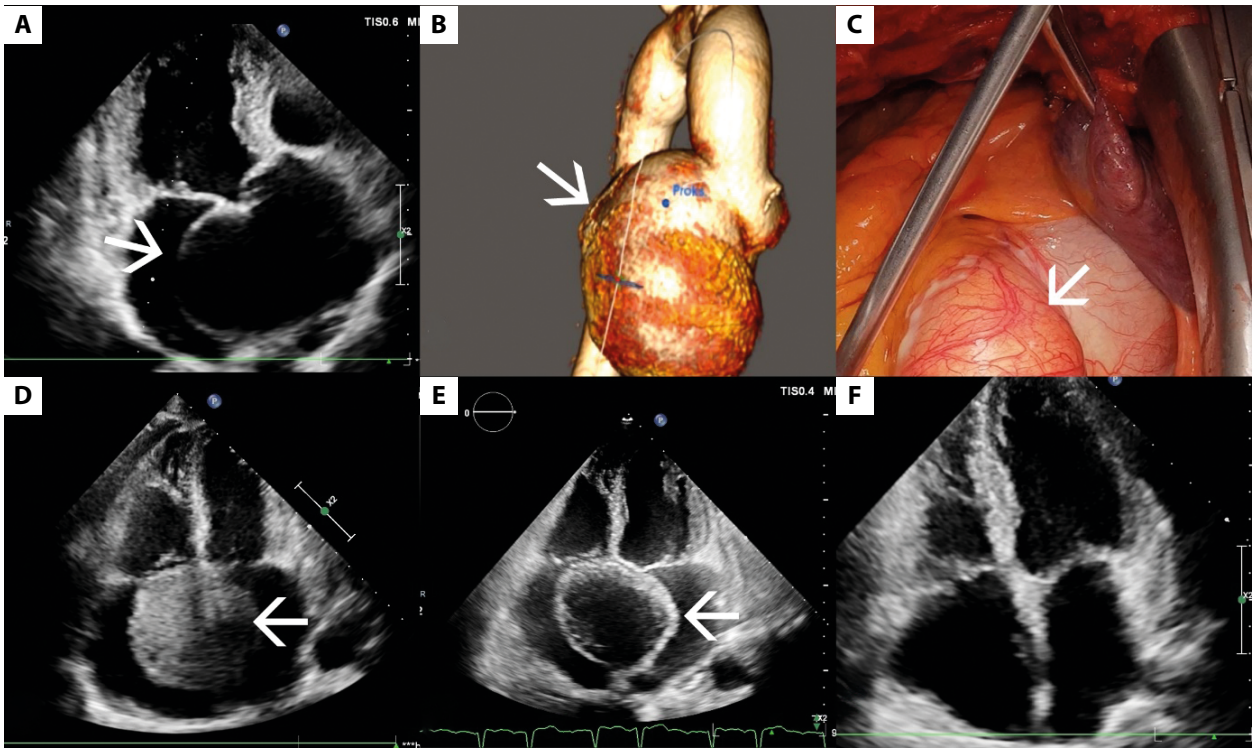

Figure 1. A. Transthoracic echocardiogram (TTE) before the procedure, modified 5-chamber view (arrow indicates the sinus of Valsalva aneurysm). **B.** Cardiac computed tomography angiography: 3-dimensional reconstruction (arrow indicates the sinus of Valsalva aneurysm). **C.** Periprocedural image. **D.** TTE; 4-chamber view (arrow indicates an intramural hematoma). **E.** TTE, 4-chamber view 7 days after the procedure, partial resolution of the hematoma (arrow indicates an intramural hematoma). **F.** TTE, 4-chamber view 1 year after the procedure, resolution of the hematoma

Article information

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