

Rupture of noncoronary sinus aneurysm into the mitral anterior leaflet and the left ventricle

A 44-year-old man presented with a shortness of breath on exertion for 2 months. His medical history was unremarkable, with no history of previous infection, trauma, or connective tissue diseases. Transthoracic echocardiography revealed a noncoronary sinus of Valsalva aneurysm (SVA) extending downward, entering the anterior mitral valve, traversing the outflow tract of the left ventricle, and compressing the mouth of the aortic valve (Fig. 1). A subsequent CT angiography confirmed a ruptured noncoronary sinus aneurysm mimicking windsock-like protrusion, which communicated with the left ventricle (Fig. 2a, 2b). The patient was scheduled for the surgical repair of the ruptured aneurysm including the ascending aorta, aortic valve and mitral replacement, and closure of fistula towards the left ventricle. A repeat CT angiography after surgery showed satisfactory outcome (Fig. 2c), and the patient was discharged home in good condition with the complete resolution of his symptoms. SVA is a rare cardiac anomaly, which may be congenital in origin or may be associated with trauma, endocarditis, syphilis, or connective tissue diseases. Aneurysms arising from the right coronary sinus are the most common and usually extend and rupture into

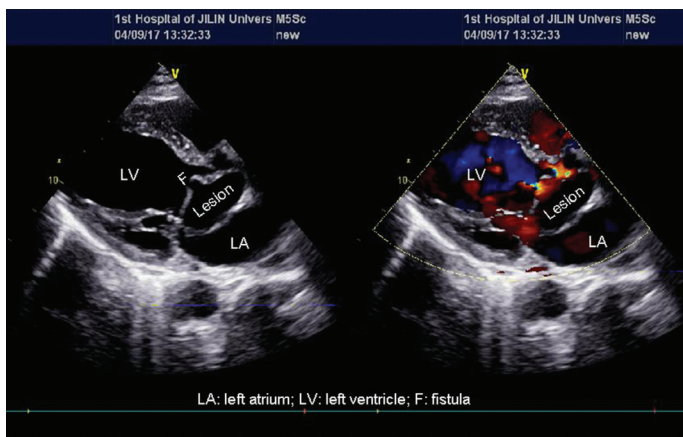


Figure 1. Left ventricular long-axis view showing the classic windsock appearance of a ruptured sinus of Valsalva arising from the non-coronary sinus communicating with the left ventricle and the mitral valve

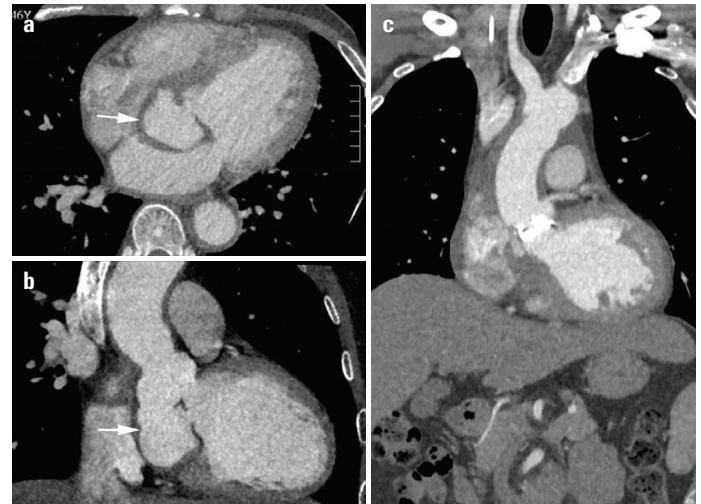


Figure 2. Electrocardiogram-gated contrast-enhanced cardiac computed tomography (CT) reformatted images in the (a) axial and (b) coronal plane illustrating the ruptured aneurysm arising from the non-coronary sinus of Valsalva shunting into the left ventricle. Follow-up CT after surgery demonstrating artificial aortic valve and absence of aneurysm

the right heart chambers, whereas those arising from the noncoronary sinus are less frequent and mostly rupture into the right atrium. Unruptured aneurysms can be incidentally detected using imaging methods, but SVA is generally diagnosed after a rupture, resulting in clinical symptoms, which thereby necessitate an early surgical intervention. The treatment of choice is mainly a surgical approach, although there are also reports about the successful percutaneous closure of ruptured sinus aneurysms using occluder devices.

Informed consent: Informed consent was obtained from all individual participants included in the study.

Qian Tong, Dianbo Cao*, Chunyu Zhang*

Departments of Cardiovascular and *Radiology, The First Hospital of Jilin University; Changchun-China

Address for Correspondence: Chunyu Zhang, MD,
The First Hospital of Jilin University;
No.1 Xinmin Street 861
Changchun-China
Phone: 15 804 300 215
E-mail: caotianbo@126.com

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