

A rare case of an unruptured sinus of Valsalva aneurysm with multiple cardiac abnormalities

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A 51-year-old female was admitted to the hospital for a cough 3 months ago. On admission, her vital signs were stable, and a continuous Grade III–IV murmur was detected at the second intercostal space along the left sternal border. The rest of the physical examination, along with chest radiography, electrocardiography, and laboratory tests, were all unremarkable. Echocardiography revealed a dilated aneurysm (28 mm × 24 mm) from the right coronary Sinus of Valsalva, causing right ventricular outflow tract (RVOT) and pulmonary valve (PV) obstruction,

with a peak gradient of 27 mm Hg (Figure 1A–C; Supplementary material online, Videos S1 and S2). Colour Doppler showed severe aortic regurgitation (AR) and a patent ductus arteriosus (PDA) with a continuous left-to-right shunt (Figure 1E–G; Supplementary material online, Videos S3 and S4). There was no evidence of aneurysmal rupture or fistulous communication with adjacent cardiac chambers. Cardiac computed tomography angiography (CTA) further confirmed the unruptured sinus of Valsalva aneurysm (SVA), along with the associated

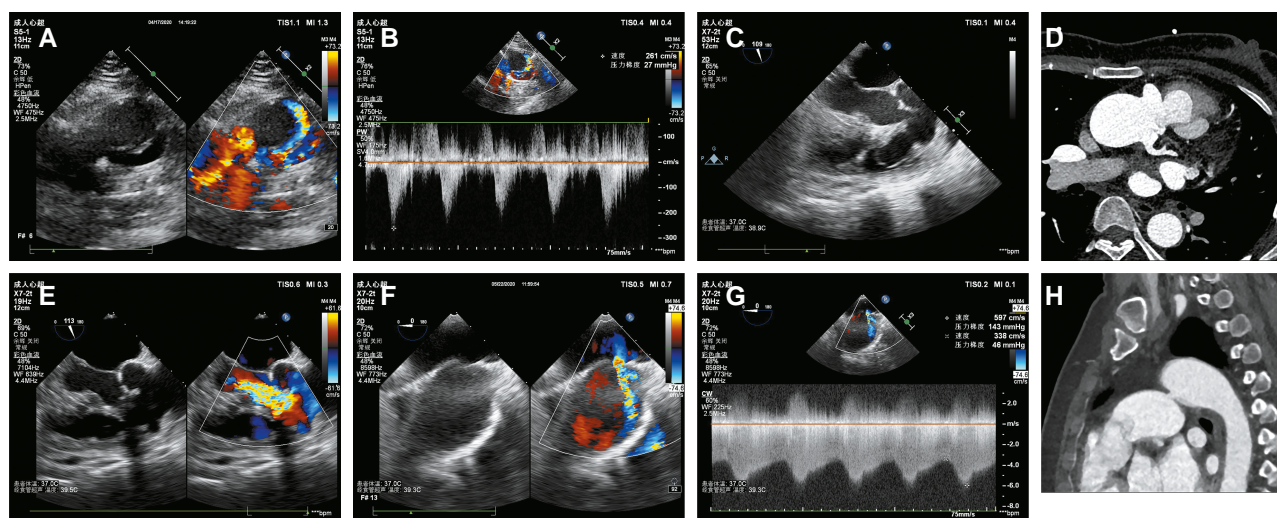


Figure 1 Transthoracic echocardiography imaging of (A) an unruptured sinus of Valsalva aneurysm and (B) associated right ventricular outflow tract and pulmonary valve obstruction. (C) Transoesophageal echocardiography and (D) computed tomography angiography imaging of the unruptured sinus of Valsalva aneurysm. (E) Transoesophageal echocardiography for severe aortic regurgitation. (F, G) Transoesophageal electrocardiograph imaging of the patent ductus arteriosus and (H) its corresponding computed tomography angiography image.

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RVOT and PV obstruction and the presence of a PDA ([Figure 1D and H](#)). The patient underwent SVA resection, pulmonary valvuloplasty, ductus arteriosus suture, and mechanical aortic valve replacement. Intraoperative findings confirmed the preoperative diagnoses. The patient demonstrated a favourable post-operative recovery.

This case is particularly notable for the incidental discovery of an unruptured SVA, most of which presented with minor symptoms and isolated RVOT obstruction.^{1,2} The SVA in this patient was accompanied by significant cardiac anomalies. The diagnosis was facilitated by continuous murmur detection and multimodal imaging, emphasizing the critical role of comprehensive imaging in complex cases.

Supplementary material

[Supplementary material](#) is available at *European Heart Journal – Case Reports* online.

Consent: The authors confirm that written consent for submission and publication of this case has been obtained from the patient in line with the Committee on Publication Ethics (COPE) Guidelines.

Conflict of interest: There is no conflict of interest to declare.

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Data availability

The data underlying this article will be shared on reasonable request to the corresponding author.

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