

Sinus of valsalva aneurysm and dissection: a delayed presentation of infective endocarditis

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Received 27 April 2023; revised 20 August 2023; accepted 31 August 2023; online publish-ahead-of-print 4 September 2023

ESC Curriculum 2.2 Echocardiography • 4.1 Aortic regurgitation • 4.10 Prosthetic valves • 4.11 Endocarditis • 9.1 Aortic disease

Summary

A 33-year-old female with active intravenous drug use (IVDU) presented with a cardiac arrest caused by drug overdose. A chest computed tomography (CT) was concerning for an aortic root aneurysm. She then underwent a transthoracic echocardiogram (TTE), especially due to her prior history of incompletely treated *Staphylococcus aureus* infective endocarditis (IE) and the presence of a bioprosthetic aortic valve (AV). It showed a vegetation on the AV and a linear structure in the left atrium, possibly an aneurysm.

A subsequent transoesophageal echocardiogram (TEE) with 3D echo confirmed an aneurysm of the Sinus of Valsalva (SOV) with infectious dissection of the aortic root, annulus, and mitral annular curtain, communicating with the left ventricle (LV) (Figure). Notably, the prosthetic AV remained relatively stable, only causing moderate AR, as the dissection did not rupture into the aorta. The patient remained hemodynamically stable and blood cultures were negative.

Case description

The impressive imaging findings (Figure 1, Supplementary material online, Videos S1–S5) were considered a consequence of her history

of incompletely treated IE. It was proposed that she might have developed an SOV abscess which perforated into the LV forming a contained space that now appeared as an SOV aneurysm and dissection. This case underscores the significance of multi-modal imaging in the diagnosis of complications of IE. A Multislice CT has a diagnostic accuracy similar to TEE, and 3D echo allows better spatial analysis.

While surgical treatment is preferred for aortic root aneurysms and dissection, the patient's active IVDU posed challenges for surgery. Surgery in endocarditis cases among active IVDU is associated with high operative mortality/morbidity and poor long-term outcomes due to the risk of re-infection and drug-related mortality.^{1–3} Hence, since our patient was haemodynamically stable, the decision following a multi-disciplinary discussion was made to manage her medically with the possibility of surgical correction in the future if she successfully abstains from drug use.

Supplementary material

Supplementary material is available at *European Heart Journal – Case Reports*.

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Handling Editor: Jamal Nasir Khan

Peer-reviewers: Noor Sharrack; Enrique Garcia-Sayan

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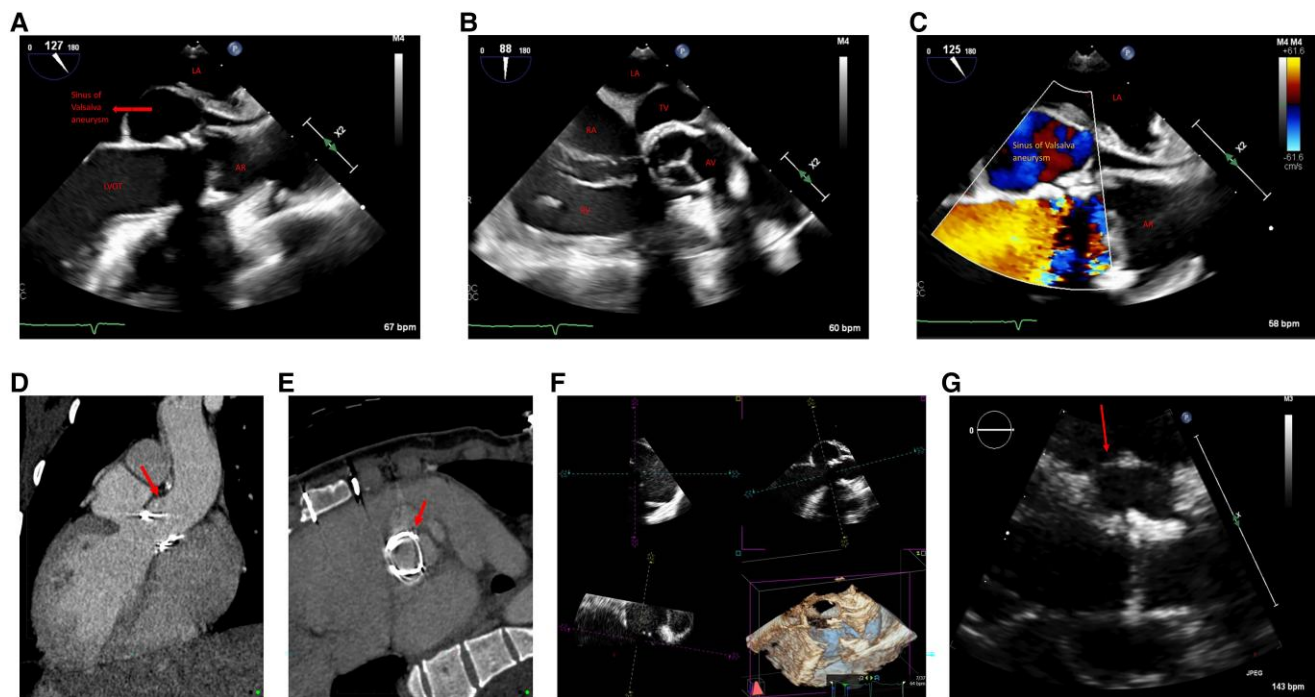


Figure 1 (A) Mid-oesophageal long-axis view looking at aortic valve, sinus of Valsalva aneurysm, and left ventricle outflow tract. (B) Mid-oesophageal short-axis view looking at the aortic valve with aneurysmal dilatation of the sinus of Valsalva. (C) Closer view of the mid-oesophageal view with colour flow Doppler looking at aortic valve, aortic root, and aneurysm of the sinus of Valsalva. (D) Re-constructed computed tomography image replicating the transoesophageal echocardiogram long axis view showing the left ventricle, aortic root, and ascending aorta. Arrow indicating the sinus of Valsalva aneurysm. (E) Re-constructed computed tomography image replicating the transoesophageal echocardiogram short axis view with arrow indicating the prosthetic aortic valve and sinus of Valsalva aneurysm. (F) Three-dimensional echo with multi-planar re-construction demonstrating the sinus of Valsalva aneurysm. (G) Transthoracic echocardiogram parasternal long-axis view with arrow indicating the sinus of Valsalva aneurysm.

Acknowledgements

We acknowledge the contribution of Dr Marcus Cox in the editing of this manuscript and clinical care of the patient. We also acknowledge the contribution of Dr Kelvin Diaz Perez and Dr Michael O'Loughlin in obtaining the re-constructed Computed Tomography images vital to the case.

Consent: The authors confirm that witnessed verbal consent for submission and publication of this case report including images and associated text has been obtained from the patients detailed in this case report. This has been discussed with the editors.

Conflict of interest: None declared.

Funding: None declared.

Data availability

The data underlying this article are available in the article and in its online [supplementary material](#).

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