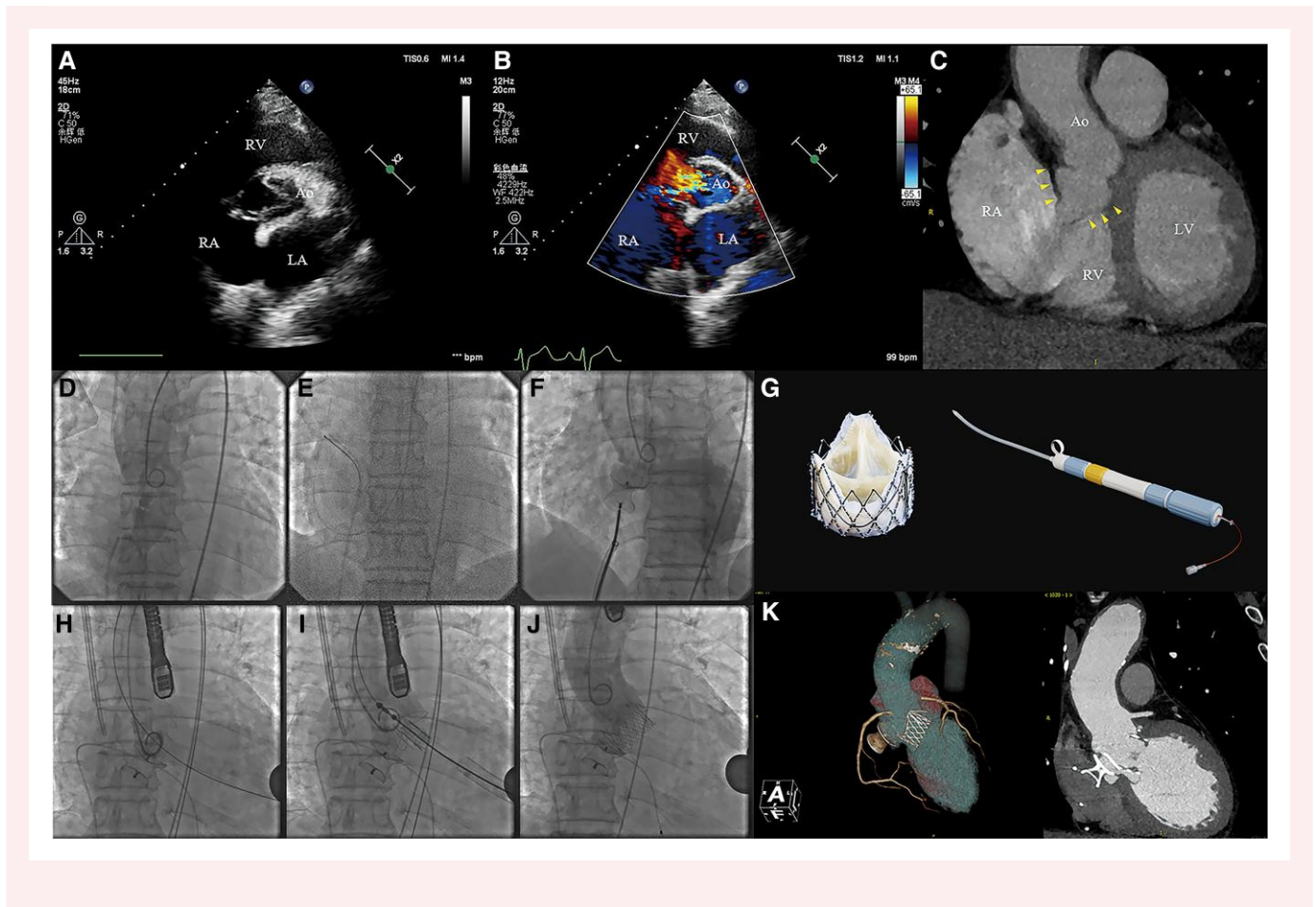


# Transcatheter aortic valve replacement and closure of ruptured right sinus of Valsalva aneurysm secondary to Behcet's disease

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A 50-year-old male presented with short of breath and oliguria for 1 week and was diagnosed with pneumonia and multiple organ failure by local hospital. He has a history of Behcet's disease for 10 years without regular therapy. The patient was transferred to our hospital for advanced treatment. Transthoracic echocardiography revealed an intimal tear at the right sinus of Valsalva with aneurysm formation and blood flow entering the right atrium (*Panels A and B*; [Supplementary material online, Videos S1 and S2](#)). Cardiac computed tomography (CT) showed the right sinus of Valsalva aneurysm (arrow) ruptured into the right atrium (*Panel C*). We implanted a 22/24 mm Cardi-O-Fix duct occluder (Starway Medical Technology, Beijing, China) at the entrance of aneurysm (*Panels D–F*; [Supplementary material online, Video S3](#)). One year later, his symptom relapsed. The echocardiography demonstrated severe aortic regurgitation without shunt to the right atrium (see [Supplementary material online, Video S4](#)). He underwent transapical transcatheter aortic valve replacement using a 29 mm J-valve (Jiecheng Medical Technology, Suzhou, China) (*Panels G–J*; [Supplementary material online, Video S5](#)). Postoperative CT scan and echocardiography revealed implantation devices in good position with mild perivalvular leakage (*Panel K*; [Supplementary material online, Video S6](#)). The patient recovered well and received immunosuppressive therapy.

Ruptured sinus of Valsalva aneurysm concomitant with aortic regurgitation is a rare complication of Behcet's disease. The pathological mechanism is inflammatory involvement in the aortic wall and annular

tissue. Postoperative prosthetic detachment or anastomotic pseudoaneurysm often occurs after conventional surgery. Transcatheter interventional therapy could be an alternative minimally invasive approach for such disease. However, for this case, the aortic regurgitation advanced to severe after occluding the ruptured sinus of Valsalva aneurysm. We speculate that it may be related to poor control of Behcet's disease. So, we recommend continuous management of Behcet's pathophysiological process even after receiving successful interventional therapy.

## Supplementary material

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

**Consent:** The authors confirm that written consent for submission and publication of this case report including images and associated text has been obtained from the patient in line with COPE guidance.

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## Data availability

No new data were generated or analyzed in support of this research.