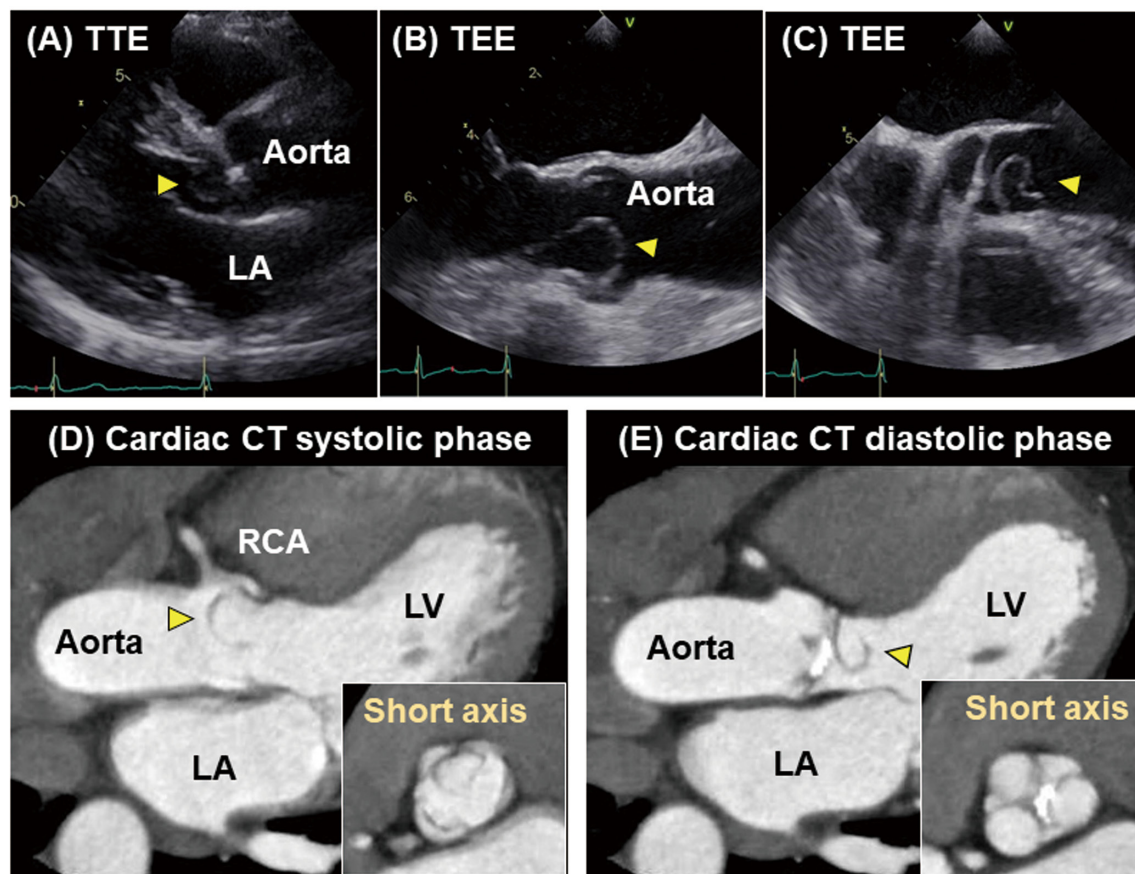


## Parachute-Like Structure Oscillating Between Left Ventricular Outflow Tract and Sinus of Valsalva

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**Figure.** Parachute-like structure flailing back and forth between the left ventricular outflow tract and the sinus of Valsalva. **(A)** Transthoracic echocardiography (TTE). The arrowhead indicates parachute-like structure. **(B,C)** Transesophageal echocardiography (TEE). Arrowheads indicate parachute-like structure. **(C,D)** Cardiac computed tomography (CT) during the systolic **(D)** and diastolic **(E)** phases. Insets show short axis images of the aortic valve. Arrowheads indicate parachute-like structure. LA, left atrium; RA, right atrium; RCA, right coronary artery.

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An asymptomatic 56-year-old male presented to hospital because of newly diagnosed Levine III/IV systolic ejection murmur in his right intercostal sternum. Transthoracic echocardiography (TTE) demonstrated a slightly accelerated blood flow in the left ventricular outflow tract (LVOT) without aortic valve (AV) stenosis (AV area 1.51 cm<sup>2</sup>; AV peak velocity 2.2 m/s). Furthermore, TTE and transesophageal echocardiography revealed an oscillating mobile membranous structure in the patient's LVOT (**Figure A–C**; **Supplementary Movies 1,2**), crossing over the AV reaching to the sinus of Valsalva during the systolic phase. To further understand the 3-dimensional structures,<sup>1</sup> we performed an additional contrast-enhanced coronary computed tomography angiography (CCTA) examination, which showed that the structure got closer to the right coronary artery (RCA) ostium during the systolic phase (**Figure D,E**). Although this raised concerns regarding myocardial ischemia, CCTA revealed no evidence for obstruction of the RCA based on disturbed coronary blood flow (**Figure D**). Based on the specific images available on CCTA and echocardiography, the differential diagnosis was giant fenestration, valve strand of the AV, or subaortic membrane accompanied by elongation<sup>2</sup> (**Supplementary Movie 3**). Although open heart surgery to prevent sudden cardiac death was discussed, the patient was managed with a careful watching strategy with echocardiography. At the 1-year follow-up, echocardiography confirmed the absence

of the LVOT obstruction and other complications, supporting the conservative management strategy.

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### Disclosures

None declared.

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### Supplementary Files

**Supplementary Movie 1.** A TTE image of parachute-like structure.

**Supplementary Movie 2.** TEE images of parachute-like structure.

**Supplementary Movie 3.** 3D CCTA images of parachute-like structure.

Please find supplementary file(s);

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