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Multilobulated aneurysm of the sinuses of Valsalva demonstrated using multimodality imaging methods

A 45-year-old male was admitted to our emergency department with progressive dyspnea on exertion. Transthoracic echocardiography (TTE) showed aneurysm of the aortic sinuses of Valsalva, severe aortic regurgitation with elongated annulus, ejection fraction of 50%, and left ventricular dilatation. Transesophageal echocardiography (TEE) revealed a 54×28-mm aneurysm with a neck of 18 mm, originating from the right and left coronary sinus of Valsalva (Fig. 1, Video 1, 2). Coronary angiography revealed significant stenosis of the left and right coronary artery. Computed tomography (CT) scan confirmed TEE findings. Multilobulated aneurysm with a size of 54×59×28 mm at the level of the right and left sinuses of Valsalva, originating from right sinus, was identified (Fig. 2a, 2b). An emergent operation was performed (Fig. 2c). A pseudoaneurysm that had formed between the right and left coronary sinuses of Valsalva was excised and repaired using sutures with pledgets. The Bentall procedure was performed. The left internal mammary artery was anastomosed to the left anterior descending artery, whereas the saphenous graft was anastomosed to the right coronary artery. Histopathological examination of the aneurysmal tissue confirmed a congenital etiology, with a deficiency of elastic fibers and hyaline deposits. The aortic tissue was fragile and adhesive, and the patient expired on the day of operation. Regardless of a congenital or acquired etiology, aneurysm of the sinuses of Valsalva is a rare disease that frequently originates from the right sinus of

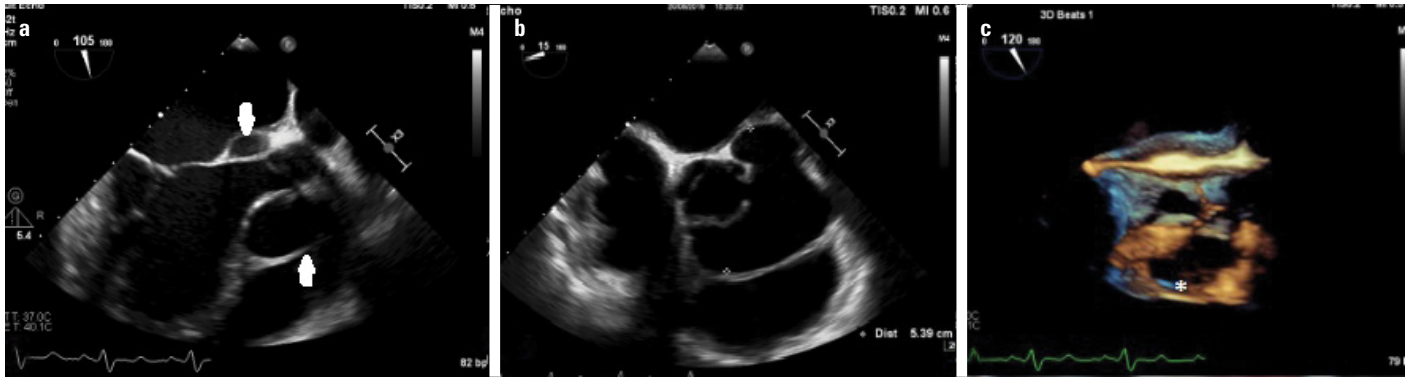

Figure 1. (a, b, c) Transesophageal echocardiography; a) Two-dimensional mid-esophageal long-axis view shows aortic aneurysm at the level of the left and right coronary sinuses (arrow); (b) The short axis view of the aortic valve at the mid-esophageal level shows the large aneurysm surrounding the left and right coronary sinuses; (c) Three-dimensional transesophageal echocardiographic view shows the aneurysm of the right coronary sinus of Valsalva (asterisk)

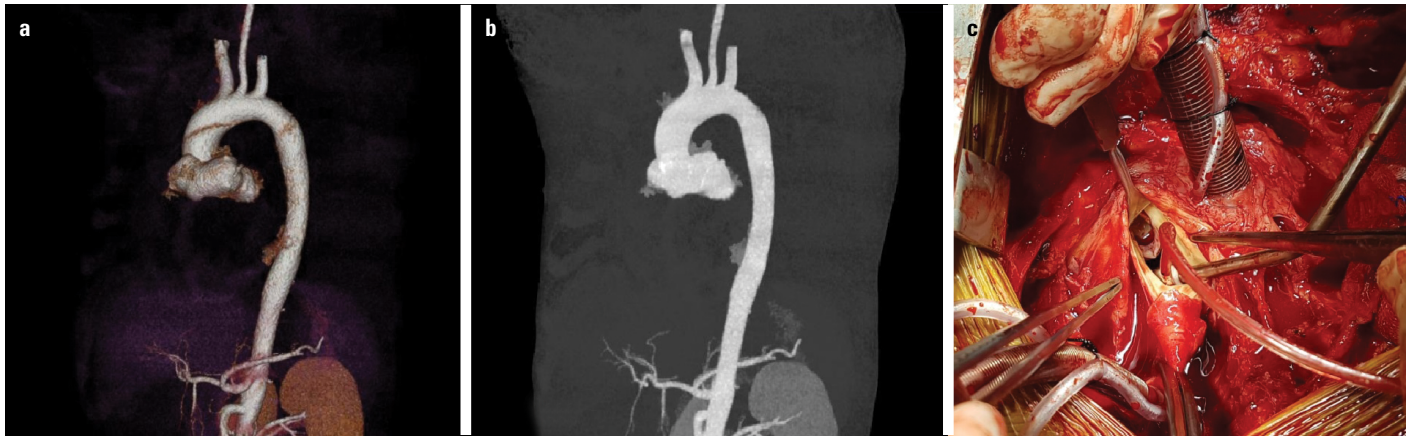

Figure 2. (a) Three-dimensional CT shows the aneurysm of the right coronary sinus of Valsalva extending to left lateral side; (b) Reconstituted image of the contrast enhanced computed tomography is shown; (c) Intraoperative view shows the orifice of the aneurysm of the sinus of Valsalva

Valsalva. Our image represents a rare and life-threatening case of aortic aneurysm.

Informed consent: Infromed consent was obtained from the patient.

Video 1. In transesophageal echocardiography, the two-dimensional mid-esophageal long-axis view shows the aneurysm of the right coronary sinus of Valsalva as well as severe aortic regurgitation.

Video 2. In transesophageal echocardiography, the two-dimensional mid-esophageal long-axis view shows aneurysms of the right and left coronary sinuses of Valsalva.

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