

Intraoperative Transesophageal Echocardiography

Accurately Identifies Sinus of
Valsalva Aneurysm in a 27-Year-Old Man

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A 27-year-old man was referred for elective surgical removal of a right atrial mass. He had a history of dyspnea and mild chest discomfort on exertion. Four years earlier, he had undergone neck surgery to remove a swollen lymph node; it was benign and had not recurred. Recent cardiac magnetic resonance (CMR) images showed a $2 \times 2 \times 2$ -cm right atrial mass immediately inferior to the noncoronary sinus of Valsalva. The mass had a smooth, well-defined margin and was not attached to the interatrial septum (Fig. 1). Sensing a possible change in diagnosis, we performed intraoperative transesophageal echocardiography (TEE) via probe before making a median sternotomy. Compared with the preoperative CMR findings, TEE showed a sinus of Valsalva aneurysm (SVA) arising from the noncoronary cusp (Fig. 2), and no fistula between the aneurysmal sac and the cardiac chambers (Fig. 3). Aortic valve function and that of the other coronary sinuses were normal. After

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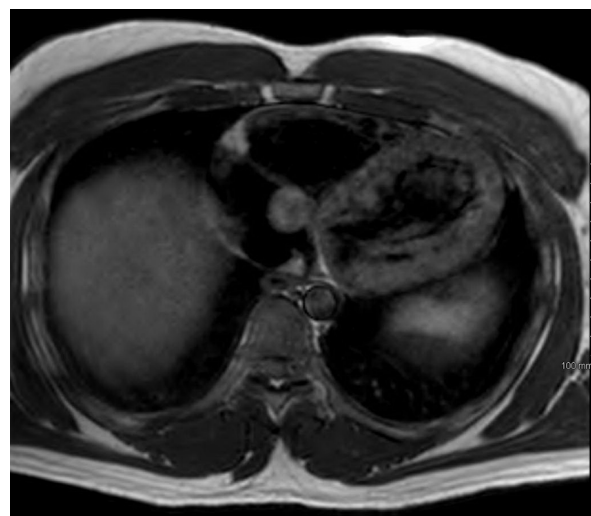


Fig. 1 Cardiac magnetic resonance image shows a right atrial mass, with a well-defined, smooth margin, immediately inferior to the noncoronary sinus of Valsalva.

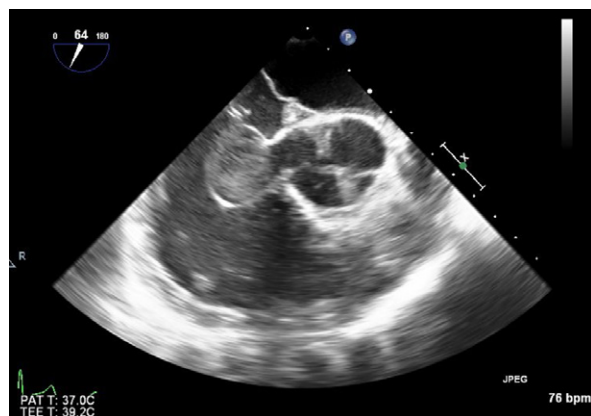


Fig. 2 Transesophageal echocardiogram shows the aneurysm of the noncoronary sinus of Valsalva.

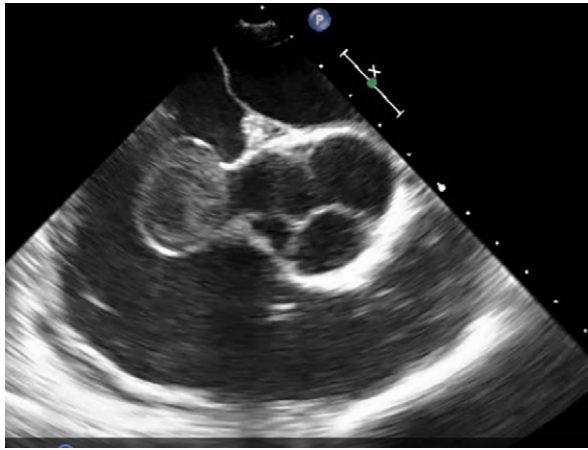


Fig. 3 Transesophageal echocardiogram shows no communication between the aneurysmal sac and the cardiac chambers.

Supplemental motion image is available for [Figure 3](#).

excising the aneurysmal sac, we repaired the resulting defect in the aortic wall in the usual fashion, placing a pericardial patch through an aortotomy (Fig. 4). Postoperatively, TEE showed normal aortic valve function and no regurgitation.

Comment

Sinus of Valsalva aneurysm, a rare defect, is reported most frequently in young and middle-aged men.¹ The right coronary sinus is most often affected.² Early detection, accurate diagnosis, and timely surgical treatment of SVA are crucial.³ Transthoracic echocardiography is typically the first-line diagnostic imaging technique; however, if the lesion is complex, this method cannot accurately show intracardiac anatomy or shunts. Computed tomography and CMR can clarify the aneurysm's

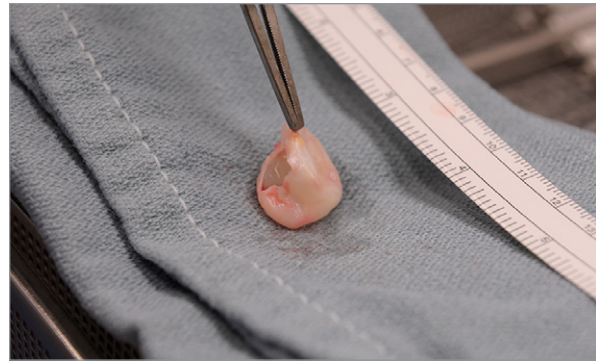


Fig. 4 Photograph shows the excised aneurysm.

location, size, and origin; its relationship with surrounding tissues; and the presence of ruptures. Beyond these characterizations, TEE enables sequential sectioning of an intracardiac mass, inspection of its inner aspects from multiple angles, and superior views of intracardiac shunts. In our patient, TEE confirmed the suspected diagnosis of SVA after other imaging techniques did not, and it guided surgical treatment. In cases involving complex intracardiac abnormalities, we think that intraoperative TEE should be an integral part of the operative procedure.

References

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