A rare case of left coronary sinus Valsalva aneurysm in a woman

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Sinus Valsalva aneurysms (SVAs) are rare cardiac malformations observed in 0.09% of autopsies.¹ SVAs are often diagnosed during evaluation of associated cardiac abnormalities requiring surgery, and the incidence is up to 1.5% in surgical series.² The pathognomonic histologic finding is lack of continuity between the annulus fibrosus and the muscular and elastic aortic media.³ SVA formation is associated with perimembranous ventricular septal defect, bicuspid aortic valve, aortic regurgitation, and coarctation of the aorta.⁴ SVAs originate from the right coronary sinus in 70% of patients, the noncoronary sinus in 25% of patients, and the left coronary sinus in only 5% of patients, and the male to female ratio is 4:1.⁴ SVAs are usually clinically silent and detected by routine 2-dimensional echocardiography.

CLINICAL SUMMARY

A 68-year-old woman with previous patch repair of coarctation of the aorta at the age of 17 years was referred for aortic valve replacement. The patient was in New York Heart Association class II/IV, had atypical angina pectoris without relation to physical activity, and had no history of syncope or palpitations. Physical examination results were normal, including normal lower-extremity pulses.

IMAGING

Transthoracic echocardiography showed an ejection fraction of 65%, a bicuspid aortic valve with an opening area of 0.96 cm², and a mean gradient of 42 mm Hg. The patient had mild mitral, tricuspid, and pulmonary valve regurgitation and trace aortic regurgitation. A secundum atrial septal defect measuring 1.2 × 0.9 cm was identified. Coronary angiography revealed right dominance and no coronary artery disease. An SVA with an ostium of 9 mm was identified below the left main coronary artery (Figure 1). Computed tomography angiography showed that the SVA was 13 × 12 × 18 mm with the aortic orifice a few millimeters below the left main coronary artery (Figure 2). The aortic root was 28 mm, sinus Valsalva was 38 mm, sinotubular junction

FIGURE 1. Coronary angiogram. A, SVA. B, Left main coronary artery. C, Angiography catheter.

was 31 mm, ascending aorta was 36 mm, aortic arch was 23 mm, and proximal descending aorta was 16 mm at the point of coarctation patch repair.

CONCLUSIONS

The diagnosis of SVA in the present case was incidental during coronary angiography. The patient had undergone

FIGURE 2. Three-dimensional reconstruction of computed tomography angiogram of the thoracic aorta. A, SVA. B, Left main coronary artery. C, Patch repair of coarctation of the aorta.

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multiple previous examinations in the years before the SVA was diagnosed, including echocardiography, computed tomography angiography, magnetic resonance angiography, and coronary angiography. Perhaps there was a sudden increase in the patient's SVA diameter or, more likely, SVAs are malformations that are easily missed despite careful imaging. A large number of patients may have undiagnosed SVAs.

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