

## Cardiac Imaging

# Bilateral Coronary Artery Fistula Originating from the Right Sinus of Valsalva and Left Circumflex Artery, and Draining into the Pulmonary Artery

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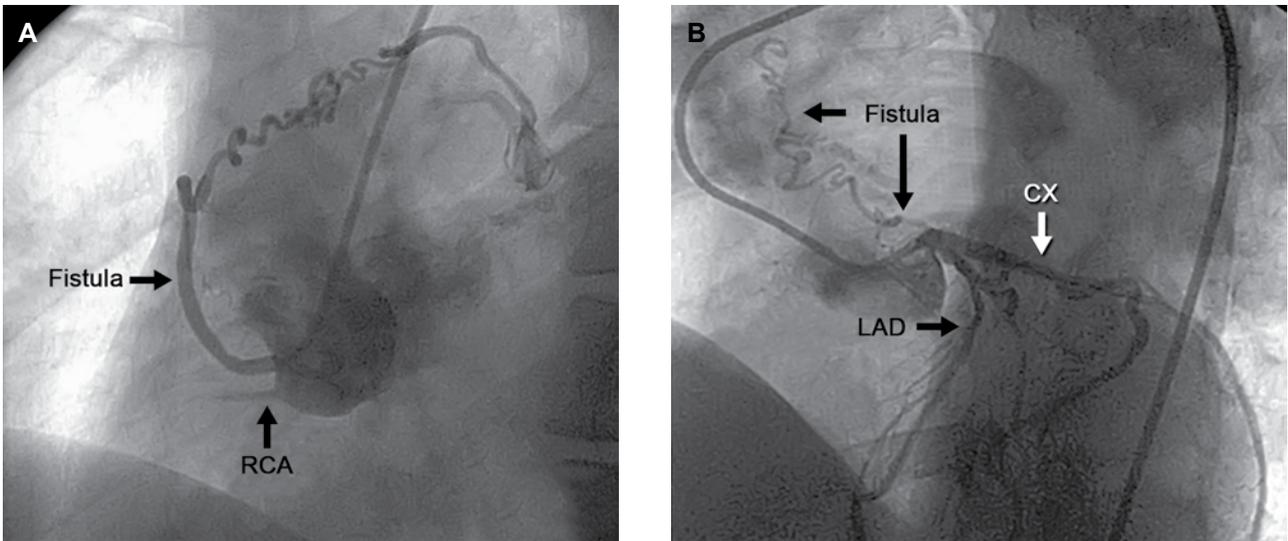
**D**ual coronary artery fistulas including both the right and left side are uncommon, accounting for only 7-16% of all cases.<sup>1-3</sup> Fistulas originating from the right sinus of Valsalva (RSV) and draining into the pulmonary artery are very rare.<sup>4-5</sup> Surgical ligation or percutaneous closure of the fistula is recommended if it causes myocardial ischemia, heart failure, and large shunts. Here we report a case of a bilateral fistula originating from the RSV and circumflex artery, demonstrated using conventional and computed tomographic coronary angiography.

A 55-year-old man presented with chest pain during exercise. Past medical history and clinical examination were unremarkable. A 12-lead electrocardiogram showed diffuse T-wave inversions. There were diffuse wall motion abnormalities and left ventricular ejection fraction was 45% on echocardiographic examination. Additionally, no intracardiac shunt could be detected. Coronary arteriography revealed a fistula originating in the RSV from an ostium separate from that of the right coronary artery, and another fistula originating from the left circumflex artery, both draining into the pulmonary artery (Figure 1 A-B). In addition, three-vessel coronary

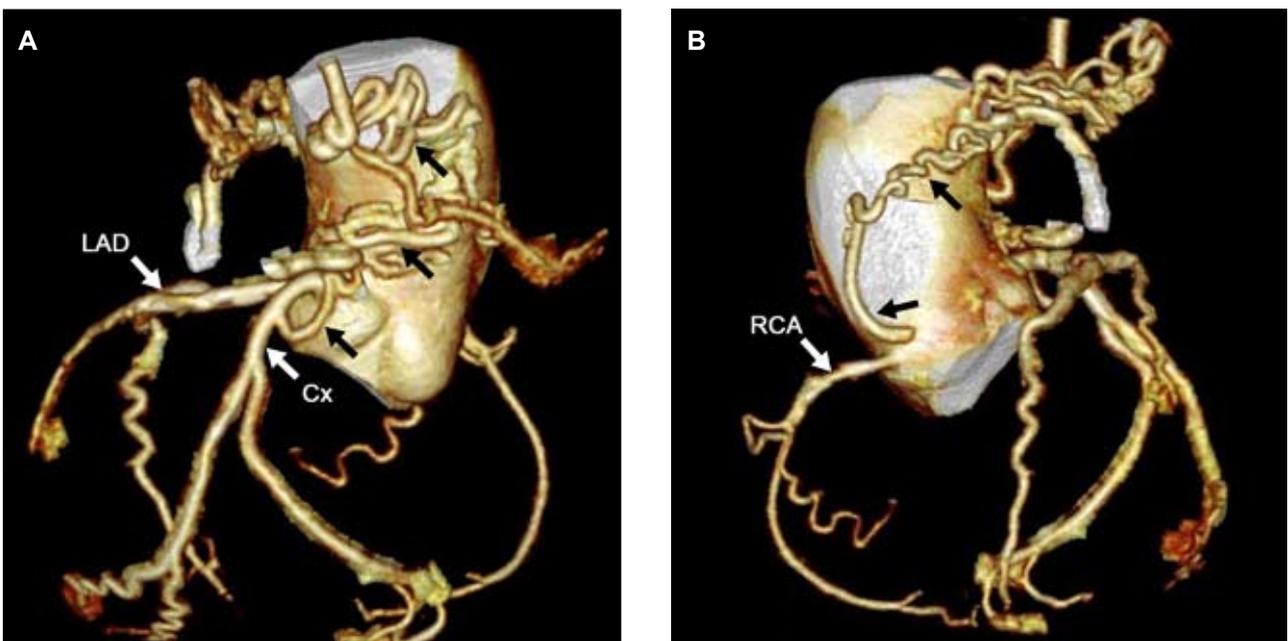
artery disease was observed. Right cardiac catheterization demonstrated significant oxygen step-up; the pulmonary to systemic flow ratio (Qp/Qs) was 1.8:1. Computed tomographic coronary angiography was performed to elucidate the complex anatomy and course of the fistula (Figure 2 A-B). Because of the presence of three-vessel coronary artery disease and significant left-to-right shunt, surgical therapy was recommended; however, the patient refused this procedure.

## References

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**Figure 1.** A: Left anterior oblique view showing the fistula originating from the right sinus of Valsalva and draining into the pulmonary artery. B: Angiographic demonstration of the fistula from the circumflex coronary artery to the pulmonary artery. CX – left circumflex artery; LAD – left anterior descending artery; RCA – right coronary artery.



**Figure 2.** Computed tomographic coronary angiography. A: Fistula (black arrows) from the circumflex coronary artery to the pulmonary artery. B: Fistula (black arrows) from the right sinus of Valsalva to the pulmonary artery. Abbreviations as in Figure 1.