Ruptured Coronary Sinus Aneurysm
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Clinical History
A 36 year old man presented to his primary care physician with exercise intolerance and shortness of breath, and was found to have a heart murmur. A transthoracic echocardiography revealed a question of supracristal ventricular septal defect. A cardiac CTA was requested to further delineate the anatomy and exclude obstructive coronary artery disease.

Findings
CT angiography of the coronary arteries and the ascending aorta demonstrated the presence of an 8 mm defect between the wall of the right sinus of Valsalva and the right ventricle (figures 1,2) resulting in a left to right shunt. A transesophageal echocardiography performed at the day of the surgery confirmed a large abnormal communication between the right sinus of Valsalva and the right ventricle, consistent with a ruptured sinus of Valsalva aneurysm and a small supracristal ventricular septal defect. There was no associated fluid in the pericardial cavity to suggest extra-cardiac rupture.

The ruptured sinus of Valsalva aneurysm and small conal ventricular septal defect were closed surgically without complications.

Discussion
Sinuses of Valsalva are focal expansions of the aortic root and located between the aortic annulus and the sinotubular junction. The coronary arteries originate from the right and left sinuses of Valsalva, with no vessel arising from the non-coronary sinus. These sinuses provide a space behind the valve leaflets when the leaflets are open so that the coronary artery ostia do not get obstructed.

Sinus of Valsalva aneurysms most commonly originate from the right coronary sinus in 70-80% and less commonly from the non coronary (10-20%) and left sinuses (<5%) and may be congenital or acquired. Congenital aneurysms are thought to result from localized weaknesses of the elastic lamina and can be seen in patients with Marfan and Ehlers-Danlos syndrome. Acquired aneurysms can be seen in patients with tuberculosis, syphilis, atherosclerosis, cystic medial necrosis or trauma. The main complications associated with these aneurysms are rupture, arrhythmias, outflow tract obstruction and endocarditis.

Clinical symptoms vary in a wide spectrum from asymptomatic to hemodynamic collapse and sudden cardiac death. Surgical repair is the mainstay of the treatment with excellent survival rates.

REFERENCES