

## Continuous Murmur in a Young: Fistula from the Aortic Sinus of Valsalva to the Right Atrium

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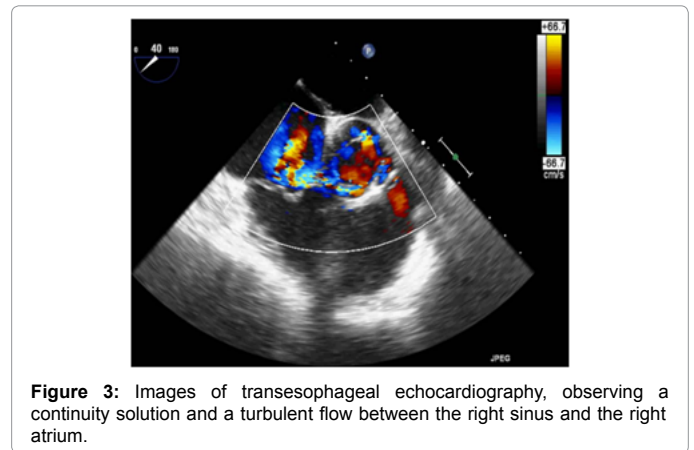
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### Case Report

Sinus of Valsalva aneurysm (SVA) is a rare condition, with an incidence ranging from 0.09%-0.15% and comprises up to 3.5% of all congenital cardiac anomalies. SVA are frequently associated with other congenital heart disease, in particular the ventricular septal defects, but may also be acquired, arising as a complication of infective endocarditis, trauma, Behcet's disease, Marfan syndrome or syphilis [1,2].

Aneurysms may originate in the right coronary sinus (60%), the noncoronary sinus (42%), and, rarely, the left coronary sinus (10%) [2].

SVA are usually diagnosed in the third or fourth decades of life as an incidental finding or after an acute rupture into an adjacent cardiac structure, being the right atrium the most frequently affected. When this rupture is present, a continuous cardiac murmur is an important physical sign [3]. About half of the aneurysms of SVA show a fistulous communication with a heart chamber or a great vessel. Thus, aneurysms of the right coronary sinus rupture preferentially into the right ventricle



**Figure 3:** Images of transesophageal echocardiography, observing a continuity solution and a turbulent flow between the right sinus and the right atrium.

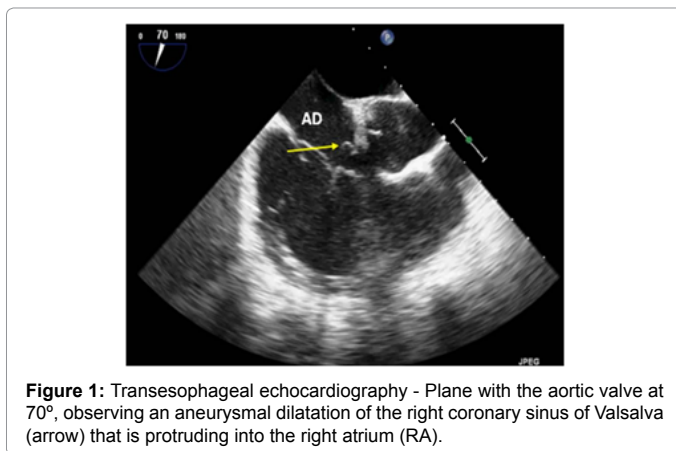
and aneurysms of non-coronary sinus rupture to the right atrium or to the right ventricle [4].

The management of an asymptomatic non ruptured aneurysm is not clear, however when the aneurysm is complicated by rupture the optimal management is surgical repair with an acceptably operative risk and good long term outcome [5,6].

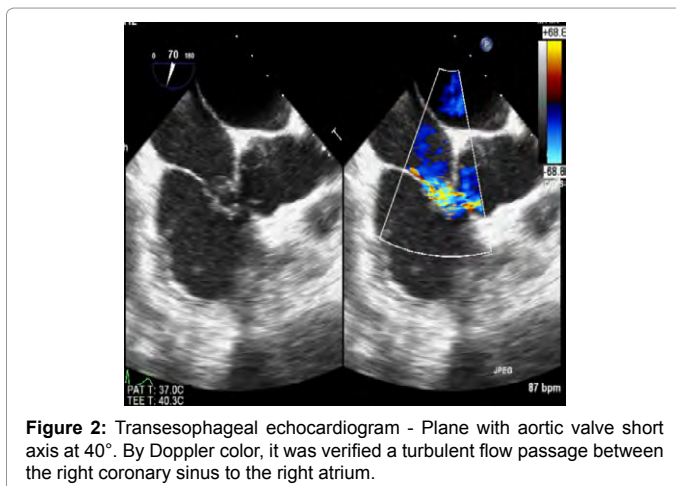
The authors described the case of a fistula between the right coronary sinus and the right atrium, whose diagnosis and anatomical characterization were established by transesophageal echocardiography.

A 30-year-old woman with no relevant personal or family history was referred to our hospital because of fatigue in moderate exercise and heart murmur. Her cardiovascular physical examination was significant for a “machine-type” continuous murmur of grade III/VI along the left and right paraesternal border. The transthoracic echocardiogram revealed the presence of possible aneurysm of the right coronary sinus.

To further characterize this pathology and exclusion of other associated cardiac anomalies, she rephrased a transesophageal echocardiogram which revealed the presence of a continuity solution between the right coronary sinus and the right atrium, compatible with a fistula between a small right coronary sinus aneurysms and the right atrium (Figures 1-3).



**Figure 1:** Transesophageal echocardiography - Plane with the aortic valve at 70°, observing an aneurysmal dilatation of the right coronary sinus of Valsalva (arrow) that is protruding into the right atrium (RA).



**Figure 2:** Transesophageal echocardiogram - Plane with aortic valve short axis at 40°. By Doppler color, it was verified a turbulent flow passage between the right coronary sinus to the right atrium.

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The patient denied any history of infection or trauma. The patient was successfully submitted to surgical correction of the fistula and is currently asymptomatic.

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