

## IMAGES IN CARDIOLOGY

# Aneurysm of the right sinus of Valsalva dissecting into the interventricular septum, submitral aneurysm and left ventricular non-compaction: Three rare diseases in the same patient



## Aneurisma do seio de Valsalva direito dissecante para o septo interventricular, aneurisma subvalvular mitral e não compactação do ventrículo esquerdo: três doenças raras no mesmo doente

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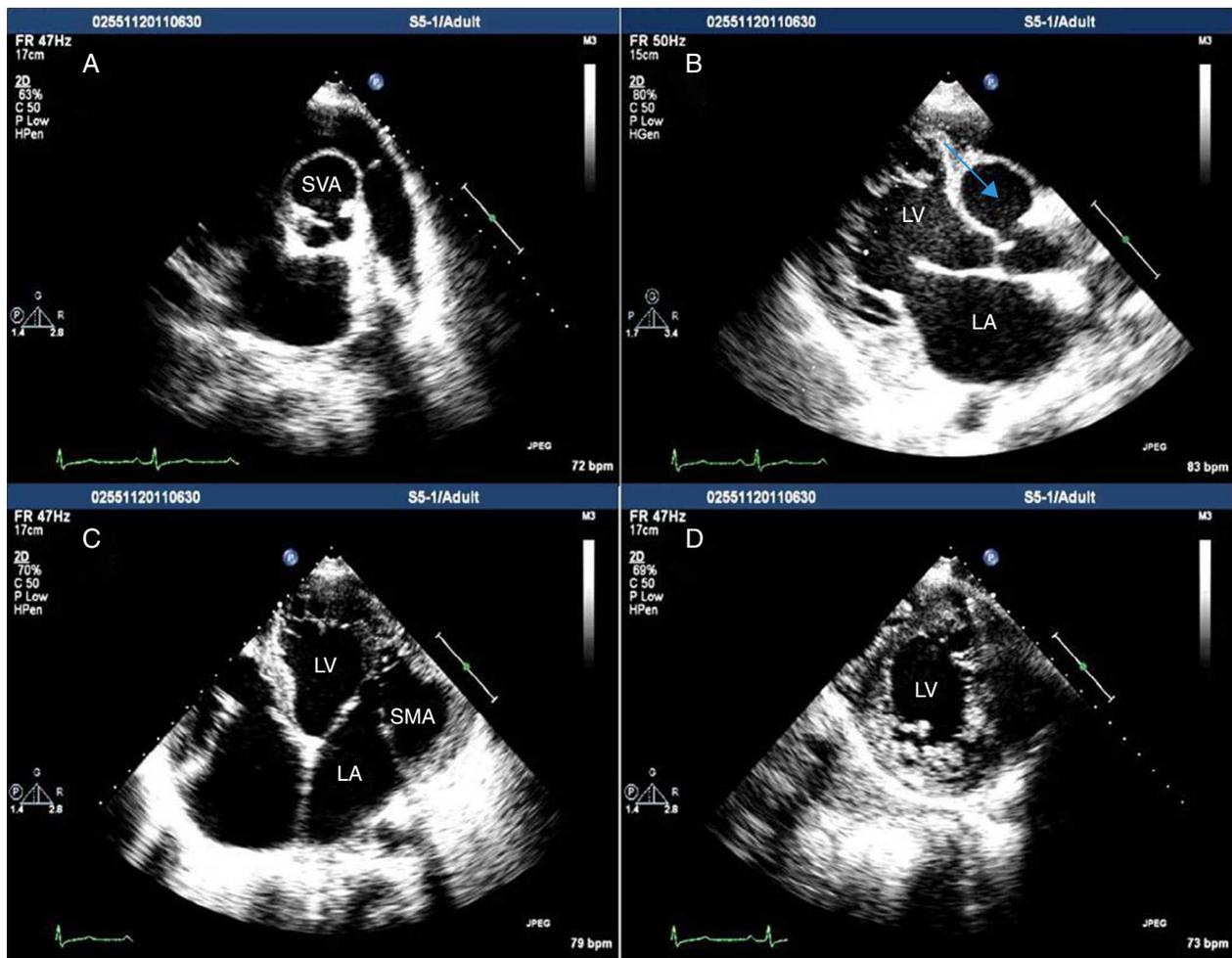
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A 24-year-old black man presented to the emergency department of our hospital with fatigue and dyspnea at rest of two weeks duration. The transthoracic echocardiogram (Figure 1) revealed aneurysm of the right sinus of Valsalva (Figure 1A) dissecting into the interventricular septum (arrow) (Figure 1B), dilated left ventricle with moderately to severely impaired systolic function, and echocardiographic criteria for left ventricular non-compaction (Figure 1C and D). A submitral aneurysm and a dilated left atrium were also observed (Figure 1C). Doppler echocardiography showed mild mitral and aortic regurgitation. Multislice computed tomography with contrast (Figure 2) revealed an aneurysm of the right sinus of Valsalva (Figure 2A) dissecting into the interventricular septum (arrow) (Figure 2B), as well as a submitral aneurysm (Figure 2C) and non-compaction of the left ventricle (Figure 2D), confirming the echocardiographic findings. The patient was admitted to the cardiac intensive care

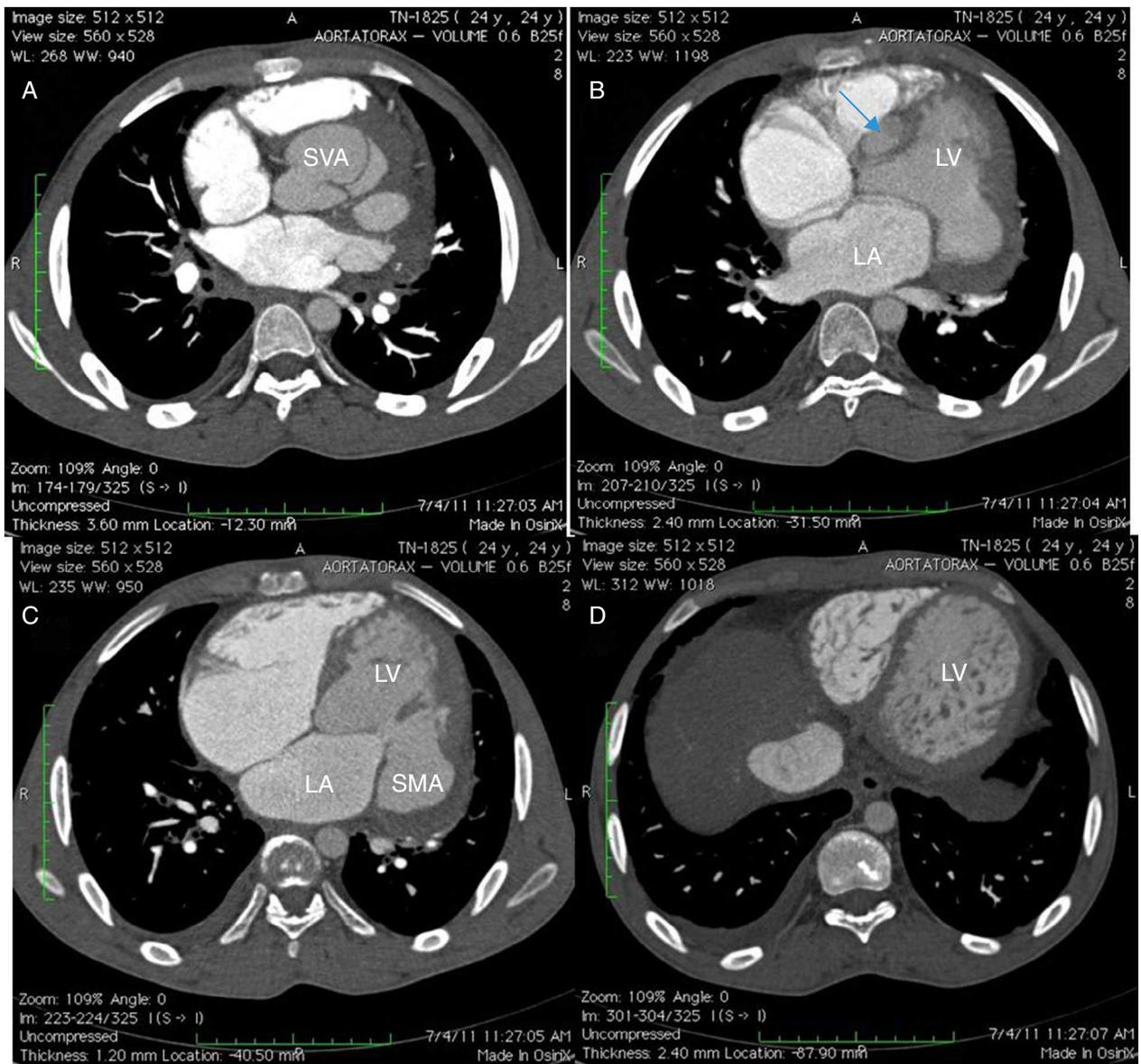
unit of our hospital and treated with diuretics, angiotensin-converting enzyme inhibitors and digitalis, with dramatic improvement in symptoms. He was proposed for surgery but refused and was discharged in New York Heart Association class I. The patient died one year after the first admission.

Subvalvular aneurysms are relatively rare, and left ventricular non-compaction is a rare cause of cardiomyopathy. In an exhaustive literature review we found coexistence of both sinus of Valsalva and submitral aneurysms in only a few case reports since the first in 1962. The association of sinus of Valsalva aneurysm and left ventricular non-compaction is extremely rare, reported in only two cases. Furthermore, we found no published cases of the association of sinus of Valsalva aneurysm dissecting into the interventricular septum, submitral aneurysm and left ventricular non-compaction in the same patient. This case supports the theory that these aneurysms are congenital in etiology.

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**Figure 1** Transthoracic echocardiography. LA: left atrium, LV: left ventricle, SMA: submitral aneurysm, SVA: sinus of Valsalva aneurysm.



**Figure 2** Multislice computed tomography. LA: left atrium, LV: left ventricle, SMA: submitral aneurysm, SVA: sinus of Valsalva aneurysm.

## Ethical disclosures

**Protection of human and animal subjects.** The authors declare that no experiments were performed on humans or animals for this study.

**Confidentiality of data.** The authors declare that they have followed the protocols of their work center on the publication of patient data and that all the patients included in the

study received sufficient information and gave their written informed consent to participate in the study.

**Right to privacy and informed consent.** The authors declare that no patient data appear in this article.

## Conflicts of interest

The author has no conflicts of interest to declare.