

## Exceptional origin of left anterior descending artery from right sinus of Valsalva

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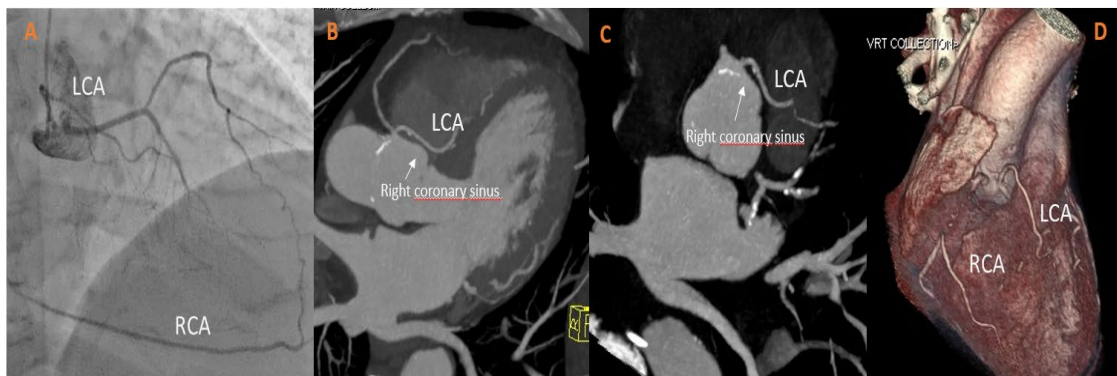
### Abstract

A 61-yo pt presented with atypical chest pain. Echocardiography showed inferior wall akinesia. Coronary angiography demonstrated anomalous origin of the left anterior descending artery (LAD), originating from the right coronary sinus, with an intermediate lesion in its middle part. To better define the relationship of the LAD with respect to the aorta, a coronary CT-scan was carried out revealing the anomalous retro-aortic position of LAD, without compression, and without high acute take-off. This variant of LAD arising from the RSV is very rare and data are lacking on its prognostic significance, it is extremely important to assess its course by coronary CT.

### Case Report

A 61-yo patient, known for hypertension and type 2 diabetes, presented with atypical chest pain and dyspnoea on exertion. Echocardiography showed akinesia of the inferior wall. Elective coronary angiography showed a chronic total occlusion of the proximal right coronary artery, an intermediate lesion on the proximal left circumflex not hemodynamically relevant (fractional flow reserve 0.83), and anomalous origin of the left anterior descending artery (LAD), originating from the right coronary sinus, with an intermediate lesion in its middle part (panel A). Stress cardiac MRI confirmed the inferior wall akinesia without residual viability, and the absence of inducible myocardial ischemia in LAD. To better define the relationship of the LAD with respect to the aorta, a coronary CT-scan was carried out revealing the anomalous retro-aortic position of LAD, without compression, and without high acute take-off (panel BCD), so that a conservative approach was advised without indication to revascularize the CTO of the RCA and the intermediate lesion of the LAD.

Coronary artery anomalies are found in <1% of the population [1]. They are classified in benign or malignant based on origin, course, and hemodynamic significance [2]. The non-atherosclerotic mechanisms causing malignant risks include small caliber, high acute take-off, compression of LAD, and myocardial squeezing. In a large retrospective study [3] including 2572 pts, in only 2 pts (0.08 %) was found the variant of LAD arising from the RSV. Since it is very rare and data are lacking on its prognostic significance, it is extremely important to fully assess its course by coronary CT.



### Panel's legend

A Coronary angiogram shows the anomalous origin of the LAD, originating from the right coronary sinus, with an intermediate lesion in its middle part

BCD Coronary CT-scan reveals the anomalous retro-aortic position of LAD, originating from right sinus of Valsalva, without compression, and without high acute take-off

### Consent

Written informed consent form was obtained from the patient

### Acknowledgements

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### Disclosure of interest

Nothing to declare.

### References

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