

Image in cardiology

Multimodality assessment of a coronary artery aneurysm with arteriovenous fistula



Evaluación multimodal de un aneurisma de arteria coronaria con fístula arteriovenosa

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Received 5 April 2024; Accepted 10 May 2024

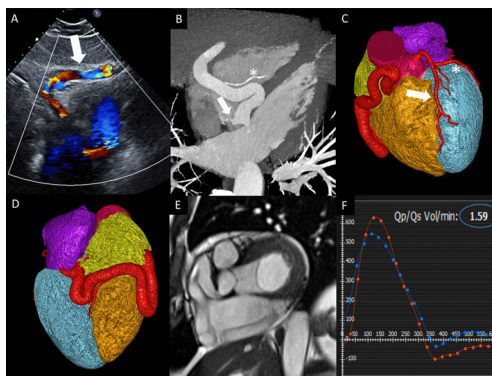


Figure 1.

An asymptomatic 64-year-old man presented for cardiovascular evaluation due to a systolic murmur. Transthoracic echocardiogram with Doppler demonstrated flow in a tubular structure between the liver and the right ventricle in the subcostal view (arrow figure 1A), as well as abnormal flow into the coronary sinus (video 1 of the supplementary data). Cardiac computed tomography was performed for further evaluation. The multiplanar reconstruction, at a similar angle to the echocardiogram, showed a diffusely aneurysmal and tortuous right coronary artery (RCA) measuring up to 1.4 cm in diameter with a fistulous connection to the coronary sinus at the entrance of the right atrium (arrow figure 1B). The posterior descending artery was normal in size without evidence of aneurysm (asterisk figure 1B). Volume rendering reconstructions (figure 1C,D) compare the aneurysmal and tortuous RCA to the normal left anterior descending artery (arrow figure 1C) and left circumflex artery (asterisk figure 1C). Cardiac magnetic resonance (CMR) was performed to evaluate the functional impact of the fistulous connection (video 2 of the supplementary data). Figure 1E and video 2 of the supplementary data show short-axis cine images with the aneurysmal proximal, mid, and distal segments of the RCA. Phase-contrast CMR demonstrated a pulmonary to systemic flow ratio (Qp/Qs) of 1.6 (blue circle figure 1F), consistent with a significant left-to-right shunt. At this time, the patient has received no treatment and is waiting for follow-up imaging.

We present a very rare case of a fistula between an aneurysmal RCA and the coronary sinus with a multimodality evaluation integrating complex anatomy and function.

FUNDING

M. Ferrández-Escarabajal is a recipient of the «Alfonso Martin Escudero Foundation» grant.

ETHICAL CONSIDERATIONS

Written consent for publication of this report and the accompanying images was obtained from the patient. We have considered the SAGER guidelines in the preparation of our paper.

STATEMENT ON THE USE OF ARTIFICIAL INTELLIGENCE

We have not used any artificial intelligence tools in the preparation of this manuscript.

AUTHOR'S CONTRIBUTIONS

G. LaRocca was involved in management of this patient. M. Ferrández-Escarabajal and S. Bienstock wrote this paper. All authors read and approved the final manuscript.

CONFLICTS OF INTEREST

None declared.

ACKNOWLEDGEMENTS

The authors would like to thank J. Sanz for checking the figures, videos, and main manuscript.

APPENDIX. SUPPLEMENTARY DATA

Supplementary data associated with this article can be found in the online version, at <https://doi.org/10.1016/j.rec.2024.05.003>

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Available online 17 May 2024

<https://doi.org/10.1016/j.rec.2024.05.003>

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