

## The superdominant RCA with double PDA

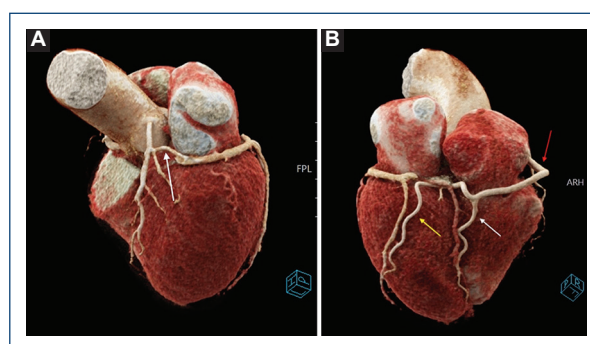
### *El RCA superdominante con doble PDA*

Mesut Mutluoglu\*, Kristof De-Smet, Ilse Crevits, and Stefaan Gryspeerdt

Department of Radiology, AZ Delta campus Rumbeke, Roeselare, Belgium

Coronary artery anomalies (CAAs) are congenital disorders observed anywhere along the trajectory of the coronary arteries with an incidence around 0.6-1.3%<sup>1</sup>. The right coronary artery (RCA) is dominant in 85% of the general population and supplies the posterior descending artery (PDA) and posterolateral artery (PLA) branches<sup>1</sup>. The term superdominant has been coined to describe a coronary artery with one or more additional branches which take over the perfusion of a territory that is normally perfused by the other coronary artery which, in this case, is missing one of its main branches<sup>1</sup>.

In this specific case, we have incidentally identified an extremely rare variant of the coronary circulation with an hypoplastic left circumflex artery (LCx) (Fig. 1A red arrow) and a prominent so-called 'superdominant' RCA (Fig. 1B red arrow) which after delivering a normal interventricular R-PDA (Fig. 1B white arrow) extends leftwards beyond the crux cordis and continues within the atrioventricular sulcus to deliver a second PDA, namely, the R-PLA (Fig. 1B yellow arrow), parallel to the original one, to supply the inferior and posterolateral walls of the left ventricle, normally perfused by the LCx. While several previous studies suggested an increased risk for atherosclerosis in patients with CAA, there is as yet no established consensus on the precise implications of coronary anomalies on the long-term prognosis<sup>2</sup>.



**Figure 1.** Volume rendered images of the heart demonstrating (A) hypoplasia of the LCx (white arrow) and the presence of (B) the 'super dominant' RCA (red arrow), which gives off a double PDA, that is, R-PDA (white arrow) and a long R-PLV branch (yellow arrow), the latter supplying the posterolateral wall of the left ventricle, normally supplied by LCx.

### Funding

This research has not received any specific grant from public, commercial, or non-profit sector agencies.

### Conflicts of interest

The authors declare that they have no conflicts of interest.

### \*Correspondence:

Mesut Mutluoglu

E-mail: mesut.mutluoglu@azdelta.be

Date of reception: 19-12-2021

Date of acceptance: 15-03-2022

DOI: 10.24875/ACM.21000402

Available online: 02-02-2023

Arch Cardiol Mex. 2023;93(1):105-106

www.archivoscardiologia.com

1405-9940 / © 2022 Instituto Nacional de Cardiología Ignacio Chávez. Published by Permayer. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## 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.

**Right to privacy and informed consent.** The authors have obtained the written informed consent of

the patients or subjects mentioned in the article. The corresponding author is in possession of this document.

## References

1. Angelini P. Coronary artery anomalies: an entity in search of an identity. *Circulation*. 2007;115:1296-305.
2. Click RL, Holmes DR Jr., Vlietstra RE, Kosinski AS, Kronmal RA. Anomalous coronary arteries: location, degree of atherosclerosis and effect on survival-a report from the coronary artery surgery study. *J Am Coll Cardiol*. 1989;13:531-7.