Images in Cardiology

A rare case of ‘superdominant’ single coronary artery

Abhisekh Mohanty a,*, Sharad Chandra b

a Senior Resident, Department of Cardiology, King George Medical University, Lucknow, India
b Professor, Department of Cardiology, King George Medical University, Lucknow, India

ABSTRACT

A 45 year male patient with no risk factors and no associated cardiac anomaly presented to us with exertional chest pain since 10 years. During coronary angiography, we were unable to intubate the left main coronary artery. Cannulation of the right coronary ostium showed a ‘superdominant’ Right coronary artery, which initially followed the course of the normal right coronary artery, then proceeded via a posterolateral segment into the course of the normal left circumflex artery, and finally followed the course of the normal left anterior descending artery (Images 1–3). CT coronary angiogram confirmed the findings (Images 4–5). Intramyocardial bridging was also seen which probably explains the angina.

This subtype is named type R-IA according to Lipton’s classification and is by far the most rare type of single coronary artery with an incidence of 0.0008%. Some patients may present with myocardial ischemia or stable angina. The exact mechanism is unknown but may be related to intramyocardial bridging or coursing of epicardial arteries between great arteries.

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This subtype is named type R-IA according to Lipton’s classification and is by far the most rare type of single coronary artery with an incidence of 0.0008%. It is usually an isolated anomaly. Some patients may present with myocardial ischemia or stable angina. The exact mechanism is unknown but may be related to intramyocardial bridging or coursing of epicardial arteries between great arteries.

* Corresponding author. Duplex no. 21, Suraj Vihar, Bargada Brit Colony, Brahmeshwarpatna, Bhubaneswar, Odisha 751018, India. Tel.: +91 9005052611.
E-mail address: abhisekh.mhnt@gmail.com (A. Mohanty).
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Coronary angiogram image showing absence of left coronary ostia.

LAO (left anterior oblique) cranial view showing a superdominant single right coronary artery.

LAO cranial view showing the superdominant right coronary artery filling the left circumflex artery (LCX) retrogradely which is then filling the left anterior descending (LAD) artery antegradely.

CT coronary angiogram showing the absence of any direct communication of the left circumflex artery and left anterior descending artery with the aortic root.
Conflicts of interest

The authors have none to declare.

REFERENCES


Image 5 – CT coronary image showing the origin of a large single right coronary artery from the aortic root.