Evidence of right coronary from mid-left anterior descending coronary: a rare case of coronary anomalous origin

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A 53-year-old man with a familial history of CAD, a smoker, and with a high LDL cholesterol was referred to our cardiology division for typical angina. Stress ECG and myocardial perfusion scintigraphy were positive for an extended area of ischaemia on the anterior left ventricle wall. We then performed a coronary angiography showing normal left main originating from the left sinus of valsalva. The left anterior descending (LAD) showed a 90% stenosis after the second septal perforator, where an anomalous right coronary artery (RCA) arose. The anomalous vessel coursed to the right, anterior to the pulmonary and the right ventricular outflow tract (Panels A and B). A dominant circumflex (CX) demonstrated mild irregularities. Aortic root injection showed a single coronary artery originating from the left coronary sinus (Panel C).

Considering the severity of the stenosis we perform, with the protection of a guide wire in the anomalous RCA, a balloon angioplasty and a sirolimus-eluting stent were implanted on mild LAD with a TIMI 3 final flow (Panel D).

Anomalous origin of the RCA was described from various sites including the pulmonary trunk, left ventricle, left main coronary artery, and circumflex coronary artery. In the literature, there are only two cases of origin of the RCA from the mid-LAD. To our knowledge, this is the first case reporting a concomitant presence of significant atherosclerotic stenosis with regard to anomalous origin of the RCA.

Panels A and B. Right oblique and left anterior oblique views of coronary artery angiograms demonstrating the anomalous origin of the RCA from the mid-portion of the LAD, just next to a 90% LAD stenosis.

Panel C. Aortic root angiography revealed no coronary artery arising from the right coronary sinus.

Panel D. Right oblique view of coronary artery angiogram after PCI demonstrates resolution of the stenosis.

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