RARE CORONARY ANOMALY ASSOCIATED WITH MASSIVE ACUTE MYOCARDIAL INFARCTION

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Russ J Cardiol 2014, 4 (108), Engl.: 68–69

Key words: anomalous, coronary, artery, infarction.

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Received April 04, 2014.
Revision received April 15, 2014.
Accepted April 22, 2014.

РЕДКИЙ СЛУЧАЙ АНОМАЛИИ КОРОНАРНОЙ АРТЕРИИ, В СОЧЕТАНИИ С МАССИВНЫМ ОСТРЫМ ИНФАРКТОМ МИОКАРДА

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Российский кардиологический журнал 2014, 4 (108), Англ.: 68–69

Ключевые слова: аномальный, коронарный, артерия, инфаркт.

Indeed, considerable variability exists in the anatomy of the left coronary artery, yet, the scientific record lists only roughly five cases of an anomalous PDA originating from the LAD [1] and ours is the second report of a PDA originating from the LAD whereby the LAD continues as the PDA across the left ventricular apex and into the posterior inferior interventricular groove with a non-dominant RCA [2]. Here we describe two cases of two separate patients presenting with disparate clinical syndromes both of which possess this extremely rare coronary anomaly.

CASE 1: A 68 year old man was referred for coronary angiography secondary to development of putative cardiogenic pulmonary edema. Coronary angiography revealed an especially unique variant (Figure 1). The patient was diagnosed with stage II diastolic dysfunction. He was treated for heart failure with preserved systolic function and discharged to home on a diuretic and a beta blocker.

CASE 2: A 51 year old male presented to the emergency department of a community hospital 1 hour following acute onset of severe substernal chest pressure, nausea and vomiting. He received thrombolytics and was transferred to our tertiary care institution. Figure 2A illustrates his electrocardiogram (ECG). The Flaherty, MP: "Anomalous PDA arising from the LAD" coronary angiogram during rescue PCI is shown in Figure 3. Stenting of the proximal LAD was performed. Echocardiography following percutaneous coronary intervention revealed severely reduced left ventricular systolic function with an EF of

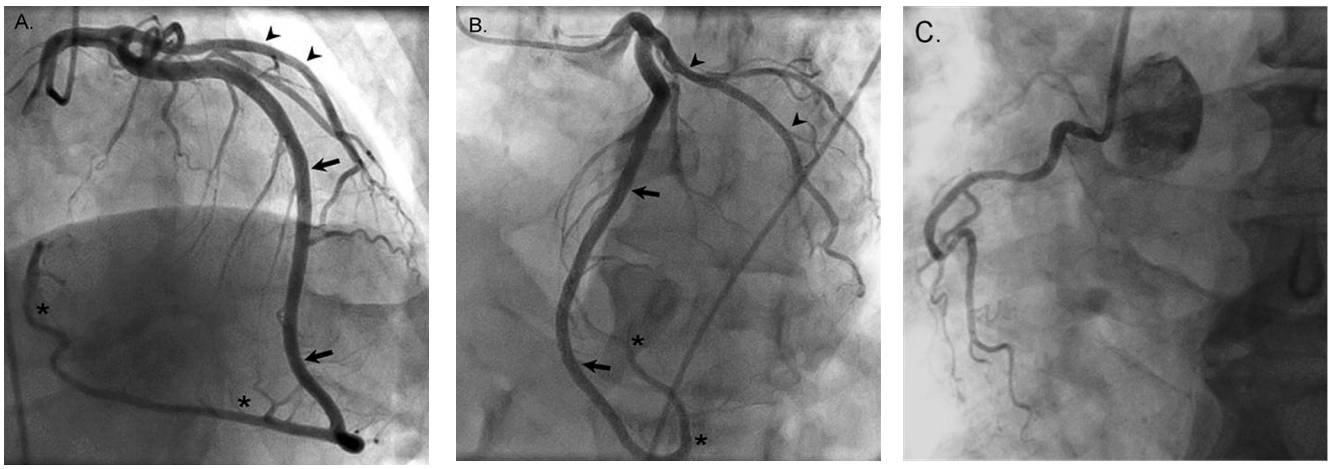

Figure 1. RAO and an LAO cranial views of the LCA **(A and B)** and an LAO view of the RCA **(C):** (i) the LCx is depicted by arrowheads and the LAD by arrows; (ii) note that the LAD wraps around the apex and gives rise to an anomalous large posterior descending artery (asterisk) that courses within the posterior inferior interventricular groove and gives rise to septal perforating branches before terminating at the level of the posterior atrioventricular groove; (iii) a small non-dominant right coronary artery originates from the right coronary cusp.

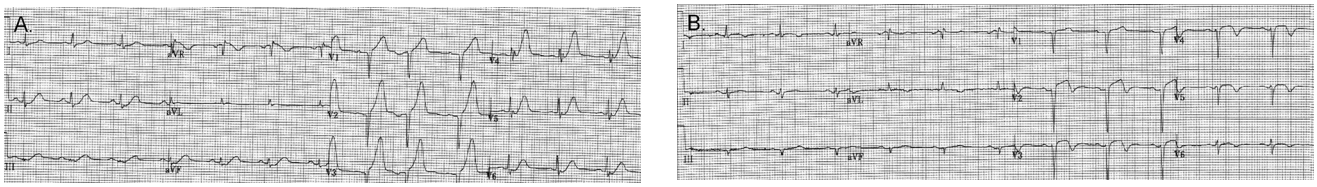

Figure 2. Electrocardiogram following thrombolytics **(A)** shows marked ST-segment elevation in leads V2-V3 with hyperacute T-wave in V4-V6 and greater than 1 mm of ST-segment depression in the inferior limb leads. A repeat electrocardiogram approximately 6 hours after PCI **(B)** reveals less ST-segment elevation in the anterior leads with biphasic T-waves and the new q-waves in the inferior leads.

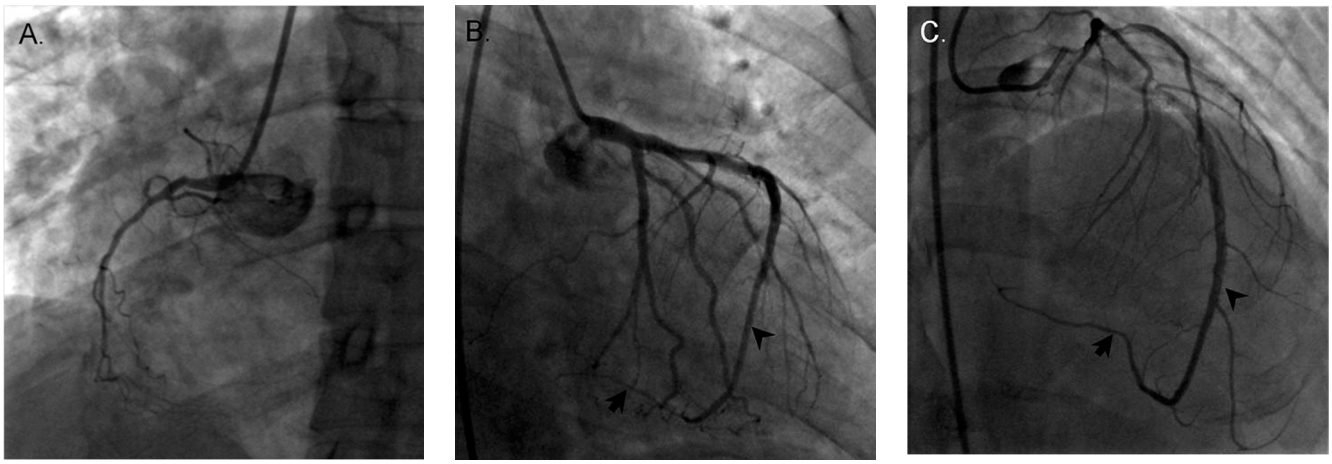

Figure 3. LAO view of the RCA **(A)** and RAO caudal **(B)** and cranial **(C)** views of the LCA: (i) a small non-dominant right coronary artery originates from the right coronary ostium; (ii) a large caliber LAD (arrowheads) is seen with a proximal filling defect consistent with thrombus and an underlying severe stenosis; (iii) note that TIMI II distal flow within the LAD distally shows the LAD wrapping around the apex (similar to Figure 1) giving rise to an anomalous large posterior Flaherty, MP: "Anomalous PDA arising from the LAD" descending artery (arrows) that courses within the posterior inferior interventricular groove and gives rise to septal perforating branches before terminating at the level of the posterior atrioventricular groove.

25–30% and akinesis of the distal anterior, apical, posterior and inferior walls and associated apical aneurysm; subsequent ECG also shows evidence of apical aneurysm and transmural anterolateral, apical and inferior wall infarctions (Figure 2B).

Discussion

Anomalous coronary anatomy occurs in 1% of the population, 60% of which involve either separate LAD and left *circumflex ostia* or the left circumflex artery originating from the right sinus or the proximal right coronary artery [3]. While considerable variability exists, the incidence of our especially unique variant is unknown [3], albeit rare, as only five cases of our anomaly exist in the literature [1, 2, 4, 5]. Regardless, the literature depicts an anomalous PDA arising from the distal LAD as a relatively benign entity. To our knowledge, this is the first reported case of a patient presenting with a massive left ventricular acute myocardial infarction as a result of this anomaly. Here, we hope to underscore the dire pathologic consequences owing to this particular anomaly should acute coronary thrombosis occur.

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