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Right Coronary Artery Arising from Circumflex Artery: A Case of Single Coronary Artery Anomaly

Sirkumfleks Arterden Köken Alan Sağ Koroner Arter: Tek Koroner Arter Olgusu

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ABSTRACT

Coronary artery anomalies could be cause of conflicts for catheterization, especially, in the setting of acute coronary syndrome. We described a case of rare single coronary anomaly which the right coronary artery arisen from terminal part of left circumflex artery. Patient was presented with non-ST segment elevation myocardial infarction. Coronary angiography revealed subtotal stenosis of left anterior descending artery at the mid portion. Left circumflex artery lying in usual route and branch out the posterior descending artery. The right coronary artery arisen from terminal circumflex artery. Left anterior descending artery lesion was stented without any complication.

Key Words: *Coronary vessel anomalies; acute coronary syndrome; catheterization.*

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ÖZET

Koroner arter anomalileri tanı ve tedavide zorluğa yol açabilir. Özellikle akut koroner sendrom seyrinde tanınması tanı ve tedavinin hızlı ve güvenli yapılabilmesi açısından önemlidir. Tek koroner arter anomalileri ise seyrek görülür. Biz de akut koroner sendrom seyrinde tanısı konulan sirkumfleks arter distalinden köken alan sağ koroner arter olgusu sunduk. Hasta ST elevasyonsuz miyokart enfarktüsü kliniğiyle başvurdu. Koroner anjiyografide sol ön inen arterinde tama yakın tıkanıklık olduğu, sirkumfleks arterin normal anatomik pozisyonunda olduğu, ancak postero-desending arteri verdikten sonra sağ atriyoventriküler sulkustan sağ koroner arter yerleşimi boyunca uzandığı izlendi. Aynı seansta sol inen arter lezyonuna başarılı stent yerleştirme işlemi yapıldı.

Anahtar Kelimeler: *Koroner damar anomalileri; akut koroner sendrom; kateterizasyon.*

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INTRODUCTION

Single coronary artery anomaly of coronary vessels is a rare occasion. It could be cause of conflict though misguide the physician, especially, in the setting of acute coronary syndrome. We described a single coronary case presented with acute coronary syndrome, and treated successfully by percutaneous coronary intervention.

CASE REPORT

A 44-year-old male admitted to our emergency service with prolonged chest pain setting at rest. He was hypertensive and ex-smoker; and he had a positive family history for coronary artery disease. His vital findings and physical examination were in normal limits. The electrocardiography showed non-specific ST segment and T wave abnormalities on the precordial leads. Troponin-I and creatine kinase enzyme levels were in normal range. The serum low density lipoprotein (LDL) and high density lipoprotein (HDL) levels were 175 mg/dL and 44 mg/dL, respectively. Other biochemistry parameters and blood counts were normal. Transthoracic echocardiography was performed to disclose challenge. On echocardiography no pathological findings was found other than the first grade diastolic dysfunction of left ventricle. The physician decided to perform urgent selective left coronary angiography due to ongoing chest pain. It revealed subtotal stenosis of left anterior descending (LAD) artery at the mid portion. Left circumflex artery lying in usual route and branch out the posterior descending artery. But, unusually, tail of the LCx outranges the posterior crux and lying to right atrioventricular groove. Namely the right coronary artery (RCA) arising from terminal left circumflex artery (Figure 1). The absence of the coronary ostium at the right sinus of Valsalva was confirmed by aortagraphy. Percutaneous coronary angioplasty was performed. 3.0 x 25 mm bare metal stent was implanted to the LAD lesion without any complication. Patient was discharged on five day of admission, and followed-up on medical treatment without any complication for a year.

DISCUSSION

Previous publications demonstrated that single coronary artery is very rarely seen by the diagnostic coronary angiography as low as 0.024% to 0.066%[1,2]. It was classified by Lipton et al. according to the origin; from left (L type) or right (R type) sinus of Valsalva[2]. Our case is an example of L-1 type, of which the posterior descending artery (PDA) is branched from the dominant LCx artery at the posterior crux and left circumflex continues along the atrioventricular groove of which is the anatomic course of the RCA. LAD originated from the left main coronary artery, and coursed in the usual place[2]. Very few number of L-1 type coronary anomalies have been reported in the literature[1-5]. This type of coronary anomalies might be misdiagnosed as an ostial total occlusion of RCA by the inexperienced physicians. This situation may be more important in the setting of urgent percutaneous coronary interventions. Else, known of anomaly may be more useful for fast and accurate decision in the following interventions and surgeries.

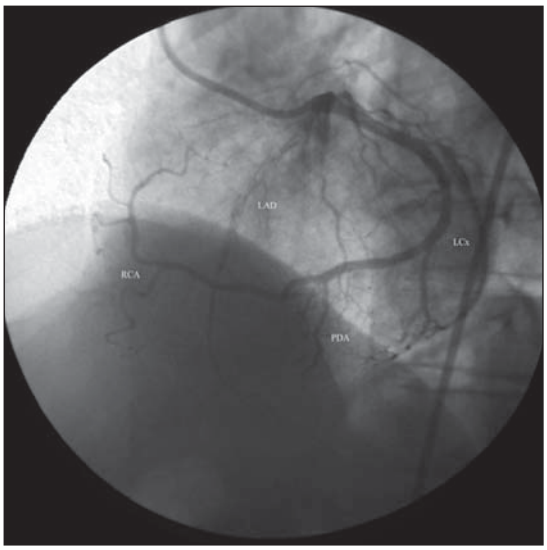

Figure 1. Left anterior oblique-cranial view of the single coronary artery. Posterior descending artery (PDA), right coronary artery (RCA) arising from circumflex artery (LCx), and subtotal occluded left anterior descending artery (LAD) are seen.

CONFLICT of INTEREST

None declared.

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