Image Presentation / *Görüntü Sunumu*

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Extremely rare coronary artery anomaly: Left main coronary artery originating from the non-coronary sinus

Oldukça nadir bir koroner arter anomalisi: Non-koroner sinüsten çıkan sol ana koroner arter

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ABSTRACT

Although they are rare, left coronary artery anomalies can cause complications with high mortality, including arrhythmia and cardiac arrest. Left main coronary artery originates from the non-coronary sinus abnormality is rarely observed. This abnormality has been defined as a benign pathology in the past, although it is described in the literature to cause morbidity and mortality in some cases. We present very rare case of the left main coronary artery arising from non-coronary sinus detected on CCTA.

Keywords: Coronary artery anomaly, non-coronary sinus, computed tomography angiography, atypical chest pain.

ÖZ

Nadir olmasına rağmen sol koroner arter anomalileri, aritmi ve kardiyak arrest gibi yüksek mortaliteli komplikasyonlara neden olabilir. Koroner dışı sinüsten köken alan sol ana koroner arter anomalisi nadiren görülür. Bu anomali geçmişte bazı yazarlar tarafından iyi huylu bir anormallik olarak tanımlanmış olsa da literatürde bazı durumlarda morbidite ve mortaliteye neden olduğu tanımlanmıştır. Bilgisayarlı tomografi anjiyografide atipik göğüs ağrısı ile başvuran bir hastada koroner dışı kaynaklı bir sol ana koroner arter olgusunu sunuyoruz.

Anahtar Sözcükler *Koroner arter anomalisi, non-koroner sinüs, bilgisayarlı tomografi anjiyografi, atipik göğüs ağrısı.*

INTRODUCTION

Coronary artery anomalies are rare and most of them are discovered as incidental findings (1). These anomalies are present at birth and relatively few are symptomatic (2). But some high risk factors, such as interarterial course, can cause sudden cardiac death (3). It is very important to reveal this pathology, because it can cause situations that require intervention. From this point of view, especially if findings in coronary angiography are equivocal, coronary computed tomography angiography is recommended to show coronary artery anomalies because it is both easily accessible and non-invasive (4). We present very rare case of the left main coronary artery arising from non-coronary sinus detected in CCTA.

CASE REPORT

A 55-year-old female patient was admitted to the hospital with complaints of atypical chest pain, dyspnea and weakness. The patient had a history of heart failure and was under treatment.

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There was no family history of sudden cardiac death. Cardiac biomarkers and ECG were within normal limits. Transthoracic echocardiography was performed and it revealed aortic and mitral valve regurgitation and left ventricular diastolic dysfunction. To determine the etiology of atypical chest pain, coronary computed tomography angiography (CCTA) was performed. CCTA demonstrated that left main coronary artery was originating from left side of the non-coronary sinus (Figure-1A-D) and had a normal course and bifurcation except its origin. There was no sign of significant stenosis on coronary arteries. Since no sign of coronary artery disease or high risk factors except for anomalous origin of the left coronary artery was present, further investigations or interventions were not planned. Medical therapy of the patient was revised, yearly follow-up and life-style changing were recommended.

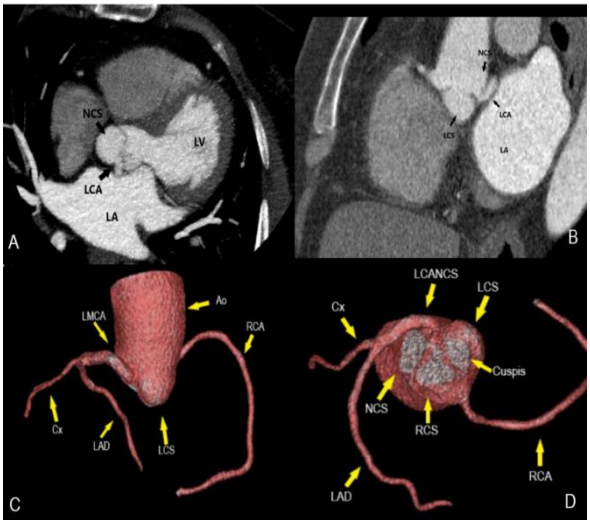

Figure-1A-B: Axial and sagittal reformat images of LCANCS

Figure-1C-D: 3D Volume rendering images of LCANCS (C-D). Note LCA not from Left coronary sinus.

DISCUSSION

Coronary artery anomalies are observed in approximately in %1 of patients undergoing coronary angiography and most of them are discovered as incidental findings (1). Although coronary angiography is diagnostic and therapeutic, coronary computed tomography angiography (CCTA) is a viable noninvasive modality and it can precisely demonstrate the origin of the coronary artery, delineate its run-off and its relationship with neighboring structures (4, 5). Anomalous origin of the left main coronary artery from the non-coronary sinus (LCANCS) is extremely rare (0.0008%) and there are small number of cases in literature (1, 6, 7). In Turkey, in a study of 10,042 adult patients (8), there is only 1 (0.009%) patient and in another study of 12,457 adult patients (2), there is not any patient has this anomaly. This anomaly has been defined as a ‘‘benign’’ situation in the past, although it is described in the literature to cause morbidity and mortality in some cases (6, 7, 9). Patients can be asymptomatic but in some cases, admissions with atypical chest pain, angina, sudden cardiac death and arrhythmia have been reported (7, 9). Some high-risk findings are described for anomalous origin of coronary arteries, such as interarterial and intramural course, acute take-off angle and slit-like ostium (3, 7, 9). Because of its rarity, there is no defined treatment and optimal risk-stratification schemes for LCANCS yet. However, surgical management can be applied to the patients who have risk for sudden cardiac death (7, 9). Although this abnormality is rare in adults, it is very important to recognize and indicate whether there are high risk factors for treatment and follow-up.

CONCLUSION

We report an extremely rare case of left main coronary artery arising from non-coronary sinus. The patient presented with atypical chest pain and was managed conservatively. It is important to be aware of this rare condition that carry a potential risk of arrythmia and cardiac death. With recent improvements in CT technology, coronary CT angiography has become gold standard in assessment of coronary anomalies. There is very little data in the literature regarding coronary CT of this anomaly. Future cases about this rare anomaly will highlight coronary CT findings and treatment approaches and will help management of patients.

Conflict of interest: None.

İnformed Consent

Informed consent was obtained from the patient.

Abbreviations from Text and Media

CCTA: Coronary Computed Tomography Angiography
LA: Left Atrium
LCA: Left Coronary Artery
LCANCS: Left Coronary Artery arising From Non-Coronary Sinus
LCS: Left Coronary Sinus
LV: Left Ventricle
NCS: Non-Coronary Sinus

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