

Miyokardiyal Köprüleşme ve Anormal Çıkışlı Sirkumfleks Arter

ABNORMAL ORIGIN OF CIRCUMFLEX ARTERY AND MYOCARDIAL BRIDGING

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Özet

Sirkumfleks arterin anormal orijinlenmesi en yaygın koroner arter anomalilerinden birisidir. Biz, akut miyokard infarktüsü ile başvuran ve anjiyografide sağ koroner arterin terminal uzantısı olarak sirkumfleks arter ve sol ön inen arterin orta kısmında miyokardiyal köprüleşmenin olduğu bir vakayı bildirmekteyiz.

Anahtar kelimeler: Sirkumfleks arter anomalisi, miyokard infarktüsü, miyokardiyal köprüleşme

Summary

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Anomalous origin of circumflex artery is one of the most common coronary artery anomalies. We reported a case presented with acute myocardial infarction and whose coronary angiography revealed circumflex artery originating from the terminal extension of the right coronary artery and myocardial bridging in the middle portion of the left anterior descending artery.

Keywords: Circumflex artery anomaly, myocardial infarction

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Introduction

Anomalous origin of coronary arteries is not a infrequent finding during angiographic evaluation and may lead to myocardial ischemia, infarction and sudden death [1-4]. We describe a case presented with acute myocardial infarction and whose coronary angiography revealed circumflex artery arising as a terminal extension of the right coronary artery and coincidental myocardial bridging in the middle portion of the left anterior descending artery.

Case

A 66 year-old man presented with complaint of squeezing chest pain for two hours. Systematic questioning elicited no further significant symptom except dyspnea. The blood pressure was 130/80 mmHg and Heart rate was 50 bpm. Examination of the other systems was normal. Family history for coronary artery disease was negative, but he had history of smoking (one pack/day, for 20 years). Electrocardiography showed sinus rhythm with an acute infero-posterior myocardial infarction. The patient was taken to the cardiology intensive care unit. Aspirin (300 mg/day), standard heparin (10000 U bolus and 1000 U/hour infusion), nitroglycerin (10

mg/minute) and streptokinase infusion (1.500.000 IU) were started. During follow-up, transvenous pace-maker was inserted because complete atrioventricular block occurred after admission to the cardiology intensive care unit. Then, chest pain and ST segment elevation persisted, and hypotension and oliguria ensued. Third heart sound and rales involving more than one third of the lung fields were evident. Bedside echocardiography revealed inferior and posterobasal akinesia, anterolateral and apical hypokinesia with an ejection fraction as 20%. In spite of inotropic agents, the patient's condition gradually worsened and thereupon, the patient's was transferred to catheterization laboratory for rescue percutaneous transluminal coronary angioplasty. The left coronary system was visualised in the left and right oblique, right cranial and caudal, and antero-posterior cranial positions. The proximal left anterior descending artery was aneurysmatic and myocardial bridging was observed in the mid segment of the left anterior descending artery and the left circumflex artery (Cx) could not be visualized during the left coronary angiography (Figure 1a-c). Aortography showed no separate ostium for Cx. The right coronary system imaging revealed proximal aneurysmatic dilatation, 90-95% dissected lesion in the mid portion of the right coronary artery (RCA) and Cx artery arising as a terminal extension of the right coronary artery (Figure 2a-b). TIMI-1 flow was present in right coronary



Figure 1a. Systolic compression at the mid-portion of LAD from the left lateral view.

Figure 1b. Normalization of systolic compression at the mid-portion of LAD.

Figure 1c. The absence of left circumflex artery in aortic root imaging from the right anterior oblique view.

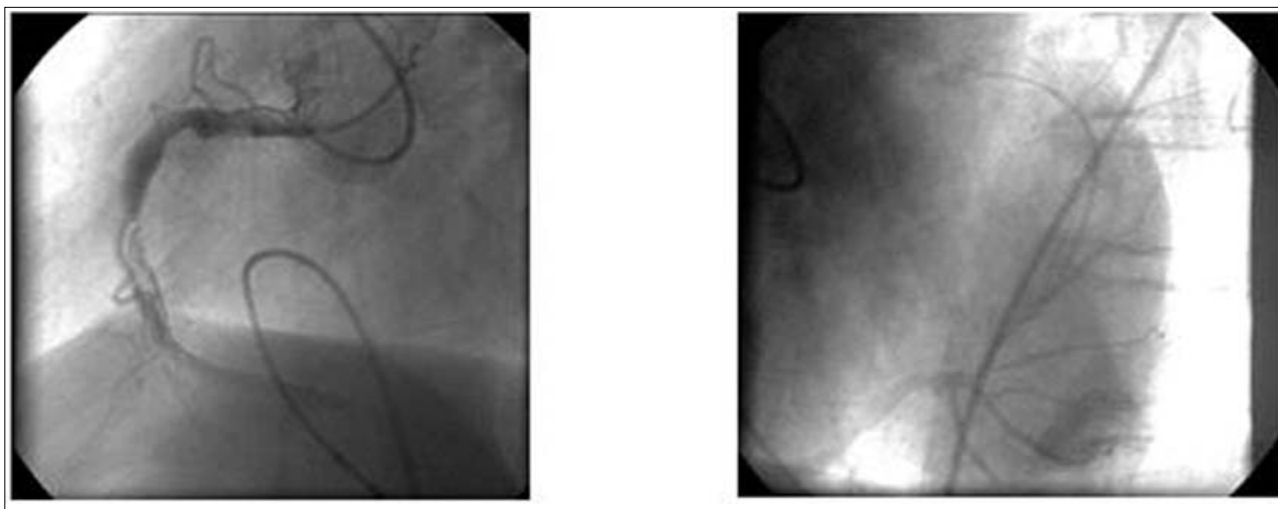


Figure 2a. Proximal aneurysmatic dilatation and 90-95% dissected lesion in mid RCA from the left anterior oblique view.

Figure 2b. The left circumflex coronary artery arising as a terminal extension of the right coronary artery from the right anterior oblique view.

system. The right coronary artery lesion was considered unsuitable for percutaneous transluminal coronary angioplasty and thus, the patient was transferred to the cardiology intensive care unit. Immediately, the patient was consulted with the cardiovascular surgical team. However, surgical intervention was postponed for 12 hours because the patients had received thrombolytic therapy. Intraaortic balloon counterpulsation was planned but the patient's condition deteriorated rapidly and cardiac arrest occurred which did not respond to resuscitation.

Discussion

Many types of coronary anomalies have been detected during coronary angiography, most of them occurring in the circumflex artery [2]. It usually originates from the right coronary sinus or right coronary artery, and frequently remains asymptomatic [1]. However, it may rarely lead to chest pain, positive exercise stress test and even sudden death despite its benign course [1-

4]. The left circumflex artery arising as a terminal extension of the right coronary artery is an extremely rare abnormality and it has been reported to be associated with chest pain and left ventricular dysfunction [5]. However, in our case there was an accompanying myocardial bridging in the mid-left anterior descending artery and, proximal part of left and right coronary systems were also aneurysmatic. Moreover, the patient presented with acute myocardial infarction. The fact that the right coronary artery supplied a large myocardial territory, along with superimposed diffuse and dissected lesion might have facilitated the fatal course of our case.

This case, together with previous reports highlights the clinical significance of abnormal origin of the circumflex artery and suggests that this abnormality should be kept in mind in differential diagnosis of chest pain. Also, knowledge of this abnormality may be important for surgical intervention.

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