

In Ectopic Origin of the Left Coronary Artery from the Right Sinus of Valsalva

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ABSTRACT

The incidence of various coronary artery anomalies ranges between 0.3 and 0.8% in patients undergoing cardiac catheterization. Anomalous coronary arteries are not considered a risk factor for development of coronary atherosclerosis. Most anomalies are discovered as incidental findings during coronary arteriography or at autopsy. In this case, the coronary angiography was performed the patient admitted with atrioventricular complet block and, left main coronary artery arising from the right sinus of Valsalva as a single coronary ostium was seen. This is an extremely rare coronary anomaly.

Key words: Single coronary artery, anomalous of coronary artery, AV complet block

Sol Ana Koronerin Sağ Sinus Valsalvadan Tek Koroner Ostium Gibi Çıkışı

ÖZET

Kardiyak kateterizasyon yapılan hastalarda çeşitli koroner arter anomalilerinin insidansı yüzde 0.3 ile 0.8 arasındadır. Koroner arter anomalileri koroner ateroskleroz gelişimi için bir risk olmadığı düşünülür. Çoğu anomaliler otopsi ya da koroner angiografi sırasında tesadüfen bulunur. Bu vakada, atrioventriküler tam blokla gelen hastaya koroner angiografi yapıldı ve sol ana koronerin sağ sinus valsalvadan tek koroner ostium gibi çıktığı görüldü. Bu oldukça nadir bir koroner anomalidir.

Anahtar kelimeler: Tek koroner arter, koroner arter anaomalisi, AV tam blok

INTRODUCTION

Left main coronary artery arising from the right sinus of Valsalva as a single coronary ostium is an extremely rare anatomic anomaly occurring in approximately 0.019% of angiographic series. Some single coronary ostium variants have been reported to carry a significant risk of severe cardiac events including myocardial infarction and sudden cardiac death, especially during exercise (1).

CASE

A 65-year-old woman with a prior history of hypertension, diabetes mellitus and chronic obstructive pulmonary disease was admitted to our hospital with shortness of breath. On physical examination his blood pressure

was 90/60 mmHg, pulse rate was 35 bpm, expirium was prolonged. Her electrocardiogram was complet atrioventricular block because of verapamil overdose. The patient a temporary pacemaker was inserted. Coronary angiography showed absence of the left coronary ostium and an anomalous left main coronary artery (LMCA) arising from a single ostium in the right sinus of Valsalva (Figure 1,2). In additional another coronary artery output was not viewed at the aortic root angiography. LMCA was normal, left anterior descending artery (LAD), circumflex artery (Cx) and right coronary artery (RCA) stenosis was noncritical. The patient's electrocardiography returned to normal sinus rhythm after stopping verapamil. We decided to medical following.

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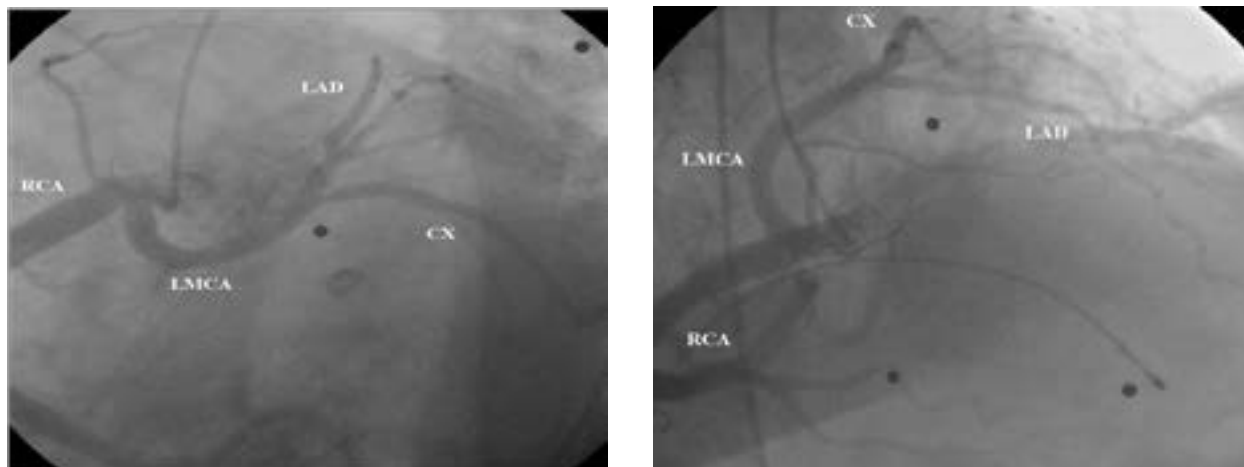


Figure 1. Coronary angiography showed absence of the left coronary ostium and an anomalous left main coronary artery(LMCA) arising from a single ostium in the right sinus of Valsalva

DISCUSSION

The incidence of various coronary artery anomalies ranges between 0.3 and 0.8% in patients undergoing cardiac catheterization. The most common abnormality in LAD and Cx coronary arteries is to have separate places of output 35.3% (1,2). Left main coronary artery arising from the right sinus of Valsalva as a single coronary ostium is an extremely rare anatomic anomaly occurring in approximately 0.019% of angiographic series (3).

In ectopic origin of the left coronary artery from the right sinus of Valsalva, the entire left coronary artery arises from the right sinus of Valsalva. The RCA arise separately, or share a common ostium with the anomalous left coronary and is considered a form of single coronary artery. Five anatomical subtypes exist and a reclassified according to the relationship of the anomalous coronary artery with the aorta and pulmonary artery, i.e., “anterior,” “between,” “septal,” “posterior,” and “combined.” In this series, the “septal” subtype was the most common, where as the “between” type was rare (4). Anomalous coronary arteries are not considered a risk factor for development of coronary atherosclerosis but 20% of anomalies produce angina, myocardial infarction, syncope or sudden cardiac death because of extrinsic compression between the aorta ascendens and pulmonary artery, especially with exercise, because of slowing down in bloodflow (5). Most anomalies are discovered as incidental findings during coronary arteri-

ography or at autopsy. However, some anomalies present with symptoms or potentially serious sequelae that require surgical treatment. The clinician should suspect the presence of a coronary artery anomaly in a young person who experiences exertional syncope, myocardial infarction, exercise-induced arrhythmias, or cardiac arrest (4). Coronary angiography is the best imaging method for the diagnosis of coronary artery anomalies. Other imaging modalities including multislice computed tomography, magnetic resonance imaging (MRI) and transesophageal echocardiography are considered to have a complementary role (6).

In this case, coronary angiography was performed to understand the complete AV block was secondary to ischemia. Left main coronary artery arising from the right sinus of Valsalva as a single coronary ostium was seen. It is thought that overdosage of verapamil is due to complete AV block. Therefore, we decided to medical following. We do not think to make an additional diagnostic assessment for the single coronary anomalies classification.

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