

Circumflex Artery Lesion Originating from Right Sinus Valsalva Presenting with Acute Inferoposterior Myocardial Infarction

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Abstract

Circumflex coronary artery originating from the right sinus valsalva is a common coronary anomaly that rarely causes symptoms. However, acute myocardial infarction and sudden death may occur. In this case, he presented with acute inferoposterior myocardial infarction. These anomalies are usually diagnosed by coronary angiography. Knowing this anomaly is important for early intervention to the lesion.

Keywords: Right sinus valsalva; Circumflex coronary artery; Frequent; Myocardial infarction; Coronary angiography; Early intervention

Introduction

Congenital coronary artery anomalies can lead to a wide range of clinical pictures from acute coronary syndrome to sudden death [1]. However, it is mostly asymptomatic. Coronary artery anomalies are detected in 0.6-1.5% of the patients undergoing coronary angiography [1]. The diagnosis of coronary artery anomalies is usually made by coronary angiography [2]. The circumflex coronary artery originating from the right sinus valsalva has no apparent clinical significance [3]. However, it is important to be taken into consideration in patients presenting with acute coronary syndrome, in order to avoid loss of time and early intervention. In this article, we present a circumflex coronary artery lesion presenting with acute inferoposterior myocardial infarction and originating from the right sinus valsalva.

Case Report

A 39-year-old male patient was admitted to the emergency clinic with a pressing chest pain that started 1 hour ago. There were no risk factors for coronary artery disease. His blood pressure was

115/75 mmHg, heart rate was 107/min, and respiratory rate was 12/min. Heart sounds were normal on listening. There was normal sinus rhythm on electrocardiography. In addition, there was ST segment elevation in D2, D3 and a VF, V5 and V6 on electrocardiography (Figure 1).

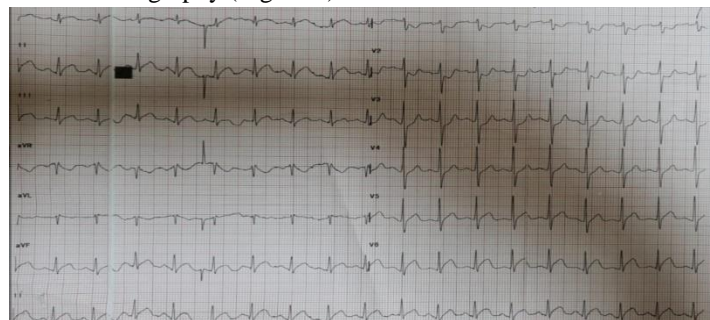


Figure 1: There is an appearance of acute inferoposterior myocardial infarction on electrocardiography.

In the emergency clinic, the patient was given 300 mg ASA and 180 mg ticagrelor. In addition, 70 IU/kg intravenous heparin was administered. The patient was evaluated by the cardiology clinic and was taken to the emergency coronary angiography unit with

the diagnosis of acute inferoposterior myocardial infarction. Coronary angiography was performed with a right Judkins 4 cm curve catheter with a radical approach, and the right coronary artery was evaluated as normal. The left anterior descending coronary artery was evaluated as normal in the left imaging performed with a left 3.5 cm curve judkins catheter, but the circumflex coronary artery was not observed (Figure 2).

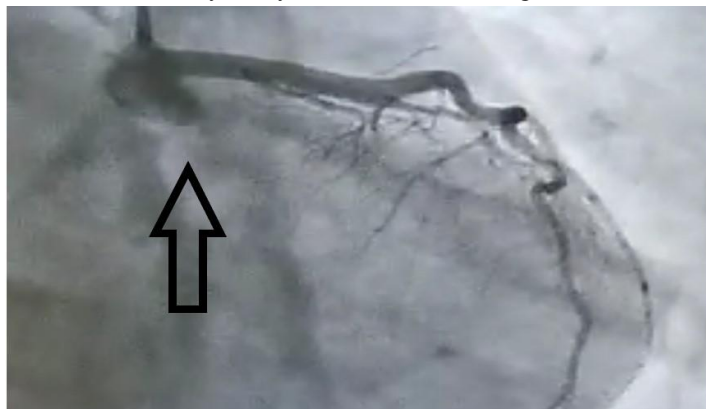


Figure 2: There is no circumflex coronary artery in the left coronary artery imaging.

Since the coronary artery could not be seen on left imaging, imaging was performed on the circumflex coronary artery in the right sinus valsalva in terms of possible coronary artery anomaly. Imaging revealed that the circumflex coronary artery originating from the right sinus valsalva was totally occluded (Figure 3).



Figure 3: Circumflex coronary artery originating from the right sinus valsalva is seen to be totally occluded.

Subsequently, the lesion was passed with a 0.014 inch guide wire and predilation was performed with 2.0×20 and 2.5×20 mm semi-compliant balloons. Afterwards, a 2.75×38 mm drug eluting stent was implanted in the circumflex coronary artery with 95% lesions. Subsequently, post-dilatation was performed with a 3.5×15 noncompliant balloon. Complete patency was achieved

in the coronary artery originating from the right sinus valsalva (Figure 4).



Figure 4: It is seen that the circumflex coronary artery originating from the right sinus valsalva is fully opened after the procedure.

Discussion

Sirkumflex coronary artery relative to the right sinus valsalva is a common anatomic variation [4]. This anomaly was first described by Antopol and Kugel in 1933, and its prevalence in angiographic series is 0.4-0.8% [2]. This variation was found to be at high risk of atherosclerosis in some studies [5]. In patients undergoing mitral valve surgery, the circumflex originating from the right sinus valsalva has been found to be associated with myocardial infarction [6]. This anomaly is usually asymptomatic and may present with acute myocardial infarction or sudden death [7]. In our case, it was presented with acute myocardial infarction. This presentation may be due to the increased risk of atherosclerosis, as we mentioned before. Conventional coronary angiography is very important in the diagnosis of coronary artery anomalies. We also diagnosed this anomaly by coronary angiography. In this anomaly, the right guiding catheter is extremely useful in intervening the lesion [8].

In conclusion, circumflex coronary artery anomaly originating from the right sinus valsalva is rarely symptomatic. This anomaly is common and may present with myocardial infarction. For this reason, it should be considered in order not to waste time and to intervene in the lesion early.

Declaration of Interest

The author has no relevant affiliations or financial involvement with a financial interest in or financial with the subject matter or materials discussed in the manuscript.

Conflicts of Interest

There is no conflict of interest.

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