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Case Report

Acute myocardial infarction with simultaneous involvement of right coronary artery and left anterior descending artery: A case report

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ABSTRACT

Simultaneous acute thrombosis of more than one coronary artery known as double or combined infarction, is an uncommon angiographic finding in acute ST-segment elevation myocardial infarction (STEMI). It usually leads to cardiogenic shock or even sudden cardiac death. We report a case of 56-year-old man presenting with persistent chest pain and ST-segment elevation in precordial and inferior leads in electrocardiography (ECG). Emergent coronary angiogram showed total occlusion of both right coronary artery (RCA) and the left anterior descending artery (LAD). We performed successful thrombus aspiration and stenting of LAD and RCA both.

1. Introduction

The pathogenesis of acute myocardial infarction (AMI) is rupture of coronary artery plaque resulting in acute thrombotic occlusion of a coronary artery that is the ''culprit'' lesion, but on rare occasions this culprit lesion can be found in more than 1 artery. This is rare and has poor prognosis. Here, we report a case of acute myocardial infarction (AMI) with simultaneous total occlusion of the left anterior descending artery (LAD) and right coronary artery (RCA).

2. Case report

A 56-year-old male presented to the emergency department with sustained chest pain and diaphoresis since past 3 h. He was chronic smoker since past 15 years. Patient was on antihypertensive drugs since last 2 years. Patient did not have history of chest pain before. He had no history of diabetes mellitus or family history or past history of coronary artery disease. On presentation his blood pressure was 140/90 mm Hg and physical examination revealed no abnormality. His lung

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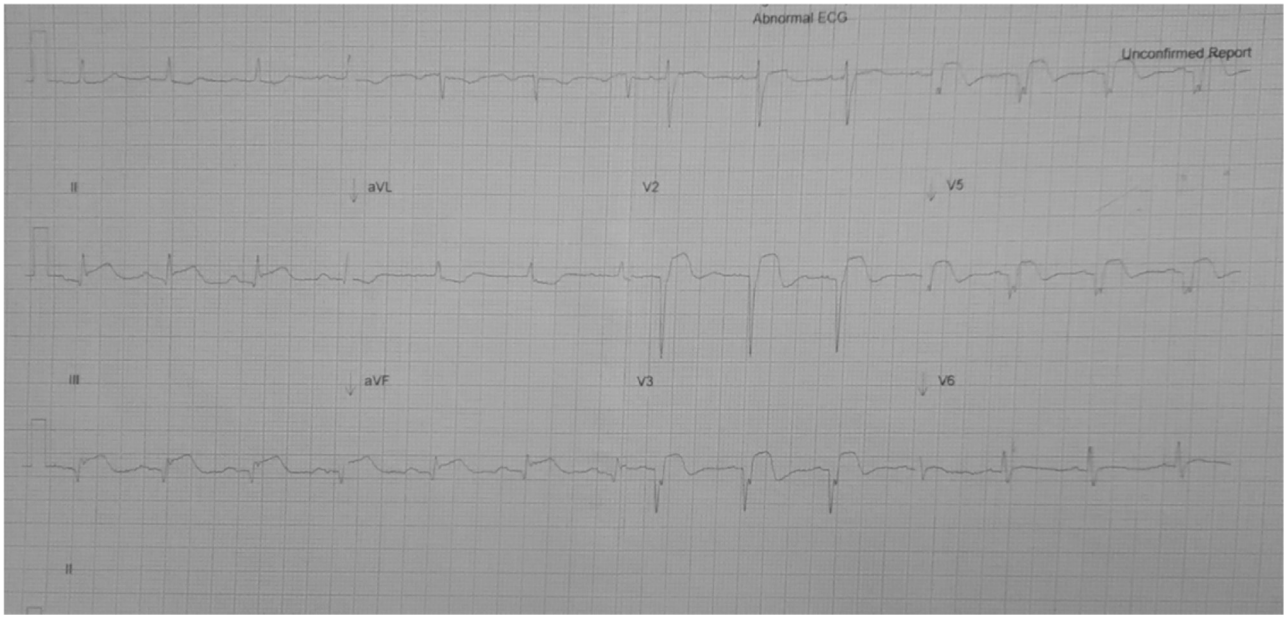

Fig. 1 – Electrocardiogram of the patient showing ST segment elevation in leads II, III, aVF, and V2–V5.

fields were clear. The initial 12 lead electrocardiogram showed a sinus rhythm with ST segment elevation in leads II, III, aVF, and V2–V5 (Fig. 1). The echocardiographic examination showed hypokinetic wall motion abnormality of mid distal anteroseptal, apical and basal inferior wall of left ventricle, with left ventricular ejection fraction (LVEF) of 40%. Patient was in killip class 1 and TIMI score was 2/14 (hypertension, anterior lead ST elevation). Patient was started on antiplatelets, statin, heparin and was taken for primary percutaneous coronary intervention (PCI). Coronary angiography showed anomalous origin of LCX from right coronary sinus (Fig. 2) and total occlusion with suspected thrombus formation in mid RCA and mid LAD (Figs. 3 and 4). Patient underwent successful

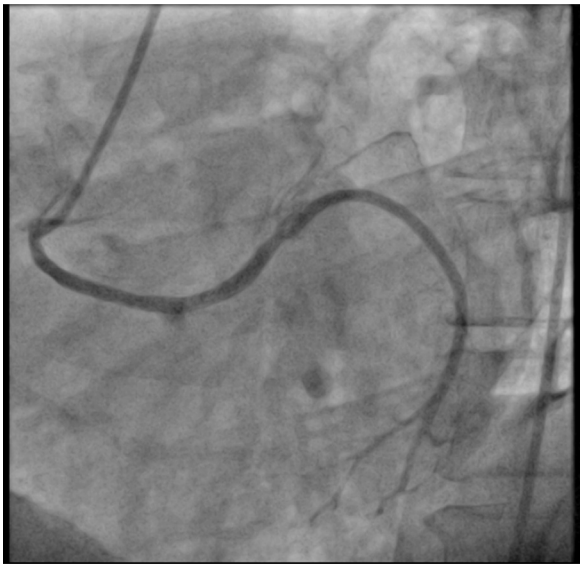

Fig. 2 – Coronary angiography showing anomalous origin of LCX from right coronary sinus without any significant stenosis seen.

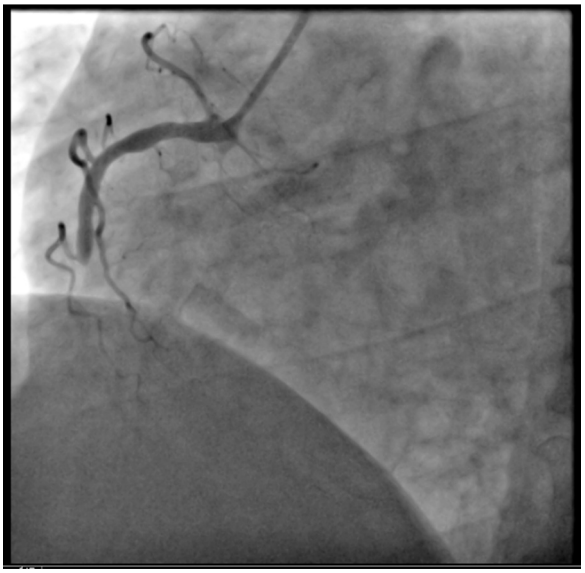

Fig. 3 – Coronary angiography LAO view showing total occlusion with suspected thrombus formation in mid RCA.

PCI, with drug eluting stent implantation in both LAD and RCA. Thrombus aspiration was performed in both arteries, eptifibatide was used. Stenting was done of mid LAD with single drug eluting stent followed by mid RCA stenting. Further hospital stay was uneventful and patient was discharged on day four.

3. Discussion

AMI commonly occurs through occlusion of a coronary artery by atheromatous plaque rupture followed by thrombus formation.[1] In the present case, this phenomena occurred simultaneously in two coronary vessels. Incidence of double-vessel