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## ■ Case Report

# A huge aneurysm of the left main coronary artery in a patient presenting with acute anterior myocardial infarction

## *Akut anterior miyokard infarktüsü ile başvuran bir hastada distal sol ana koroner arterin dev anevrizması*

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### Abstract

Coronary artery aneurysms (CAAs) are uncommon clinical presentations associated with some acute and chronic complications. They are generally detected incidentally. Stasis in aneurysm may cause thrombosis and thus acute coronary syndrome. This manuscript presents a giant aneurysm of the LMCA observed in the coronary angiography of a 37-year-old female patient who was brought to emergency services due to cardiac arrest and whose electrocardiography (ECG) revealed acute anterior myocardial infarction.

**Keywords:** acute myocardial infarction; coronary artery aneurysm; left main coronary artery

### Öz

Koroner arter anevrizmaları, bazı akut ve kronik komplikasyonlarla ilişkili, nadir görülen klinik tablolardır. Genellikle tesadüfen tespit edilirler. Anevrizma içerisindeki durgunluk tromboza ve dolayısıyla akut koroner sendroma neden olabilir. Bu yazıda kalp durması nedeniyle acil servise getirilen ve elektrokardiyografisinde akut anterior miyokard enfarktüsü saptanan 37 yaşındaki kadın hastanın koroner anjiyografisinde görülen devasa sol ana koroner arter (LMCA) anevrizması sunulmaktadır.

**Anahtar Kelimeler:** akut miyokard enfarktüsü, koroner arter anevrizması, sol ana koroner arter

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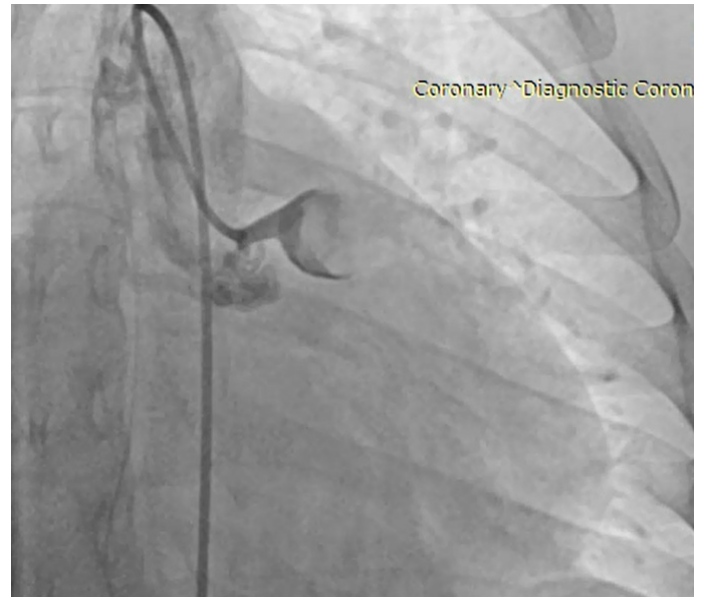
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## Introduction

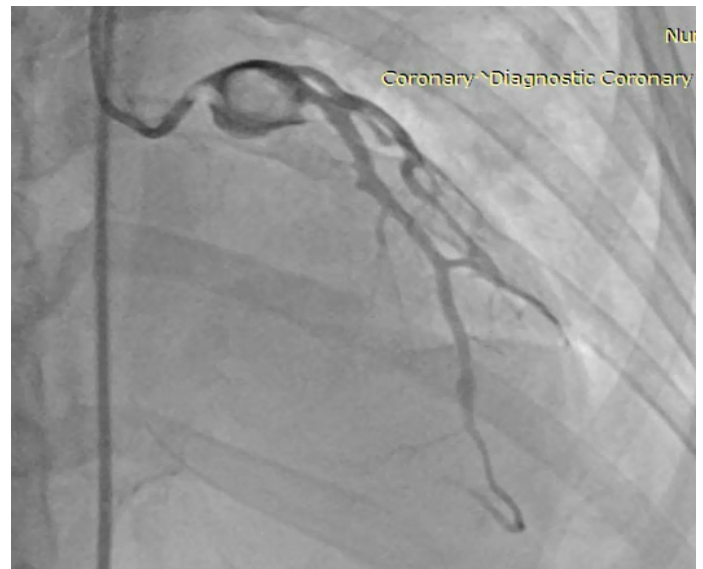
A coronary artery aneurysm (CAA) is identified as a 1.5-fold or more fusiform or sagittal enlargement of the normal coronary artery diameter.[1] It is usually caused by the right coronary artery (RCA); however, it may also involve the left anterior descending (LAD) artery, the circumflex artery (Cx) and occasionally the left main coronary artery (LMCA).[2] As it may be congenital, it may especially develop due to atherosclerosis, infection, trauma, vasculitis, Kawasaki disease, autoimmune diseases, postoperative, spontaneous dissection and metastatic tumors.[3-5] It is more common in men and the frequency of angiography ranges from 0.3 to 4.9 percent.[6] In this case, we present a 37-year-old female patient with SLE disease who had a giant aneurysm in LMCA who underwent coronary angiography upon detection of acute anterior myocardial infarction when she was brought to the emergency service after cardiac arrest.

## Case

A 37-year-old female patient, who had been followed up with SLE diagnosis, was brought to the emergency services due to cardiac arrest that developed following chest pain. An acute anterior myocardial infarction was observed in the ECG taken after receiving a response to a cardiopulmonary resuscitation (CPR) performed in the emergency service. The patient was intubated and then taken into the catheterization laboratory, by applying CPR at intervals. A giant aneurysm of distal LMCA and with a thrombus inside were observed through coronary angiography. No flow was observed in the LAD and Cx arteries (Figure 1). Floppy wires were used to pass the LAD and Cx arteries. CPR-guided distal flow was achieved after performing repeated thrombus aspiration, intracoronary thrombolysis (Alteplase) and percutaneous transluminal coronary angioplasty (PTCA) (Figure 2). Nevertheless, no response was observed to extended CPR and the patient was pronounced dead.



**Figure 1:** A giant aneurysm of distal LMCA and with a thrombus inside were observed through coronary angiography. No flow was observed in the LAD and Cx arteries.



**Figure 2:** CPR-guided distal coronary flow was achieved after performing repeated thrombus aspiration, intracoronary thrombolysis and percutaneous transluminal coronary angioplasty.

## Discussion

Coronary artery aneurysms (CAA) are associated with high morbidity and mortality rates. LMCA aneurysms are particularly difficult due to their anatomical location and involvement of multiple arterial branches. Affected patients are asymptomatic, but some are at risk of plaque rupture, dissection and other complications. Optimal management is uncertain and research into the optimal management of these vascular malformations continues.

Coronary aneurysm at LMCA location is encountered extremely rarely. Standard coronary angiography is the gold standard method for diagnostic purposes; however computed tomography and magnetic resonance angiography are being increasingly used for evaluation of such coronary aneurysms.[7-8] Most frequent causes include atherosclerosis, autoimmune diseases (Kawasaki disease, Systemic lupus erythematosus (SLE), Takayasu disease), dissection, and trauma. [3-5] In our case SLE seems to be the most probable etiologic factor. Coronary artery aneurysms might cause various clinical problems. Our case presented with cardiac arrest due to acute myocardial infarction likely due to thrombotic occlusion and distal embolization, originating from the distal huge left main aneurysm. Other potential life threatening complication is rupture of coronary artery aneurysms.

Management of CAAs is controversial and generally depends on clinical presentation. Conservative or surgical approaches can both be recommended.[9] Medical therapy includes antiplatelet agents with/or without anticoagulants. Interventional therapies like covered stent to obliterate the aneurismal cavity was reported to be used with good short term outcome.[10] However current standard therapy is surgical revascularization with coronary artery bypass. [11] In acute occlusion situations, systemic or intracoronary fibrinolysis, thrombus aspiration and percutaneous coronary intervention techniques may be useful.

## Conclusion

In conclusion, it may be suggested that coronary lesions should be screened in the follow-up and treatment of SLE, which may be a cause of acute myocardial infarction in young people.

## Declaration of conflict of interest

The authors received no financial support for the research and/or authorship of this article. There is no conflict of interest.

\*This study was approved by our Institutional Review Board. Informed consent was obtained from all patients and the principles of the Helsinki Declaration were followed.

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