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Left Main Coronary Artery Aneurysm That Presented With Anginal Complaints

KEYWORDS: Coronary aneurysm; Coronary angiography; Coronary artery disease

* Yavuzer Koza	Zakir Lazoğlu	Esma Selva Ateş
Ataturk University Faculty of Medicine, Department of Cardiology, Erzurum,Turkey, 25100. * Corresponding Author	Ataturk University Faculty of Medicine, Department of Cardiology, Erzurum,Turkey, 25100.	Ataturk University Faculty of Medicine, Department of Cardiology, Erzurum,Turkey, 25100.

ABSTRACT *Left main coronary artery aneurysm is an extremely uncommon angiographic finding with few cases described in the literature. It is usually asymptomatic but can be presented with acute myocardial infarction and sudden death. Atherosclerosis is the most common cause, although several autoimmune diseases and congenital abnormalities have been associated with the presence of coronary aneurysms. We describe herein a 52 year old man presenting with palpitation and chest pain complaints whose coronary angiography revealed left main coronary artery aneurysm. The clinical picture, workup, and treatment options for such patients are also discussed.*

INTRODUCTION

Coronary artery aneurysms (CAA) are usually defined as dilated segments greater than 1.5–2 times the diameter of an adjacent normal segment. It has been diagnosed with increasing frequency since the advent of coronary angiography. The incidence of CAAs is 1-5% with male dominance.[1] Aneurysms of the left main coronary artery (LMCA) are extremely uncommon, with an incidence of 0.1%.[2] Coronary artery aneurysms are prone to spasm, spontaneous dissection, intraluminal thrombus formation and distal embolisation which could lead to myocardial ischemia or infarction. The management of coronary artery aneurysm is not yet well established, owing to its rarity and unpredictable natural history. Treatment options include anticoagulation, covered stents, reconstruction, resection, and exclusion with bypass.[3,4] We describe a 52-year old male with LMCA aneurysm who was admitted to the hospital with anginal complaints.

CASE

A 52 year old man was admitted to our hospital with the complaint of palpitation and chest pain. He had no traditional coronary risk factors except smoking. His medical history was unremarkable and physical examination was normal. Cardiovascular tests including; electrocardiogram, echocardiography and cardiac enzyme levels at presentation and in hospital follow-up were normal. Exercise treadmill test was positive. A coronary angiogram revealed a fusiform aneurysm arising from the left main coronary artery (LMCA) and a non-significant lesion in the left anterior descending artery (LAD) with normal right and left circumflex coronary arteries (Figure 1). Coronary anatomy was further evaluated with multislice computed tomography (MSCT) which confirmed the angiographic findings of the left coronary system (Figure 2A, B). Due to inducible ischemic finding in the exercise treadmill test and its risk of rupture, coronary bypass surgery was recommended to the patient. However, he refused the surgery and was conservatively managed on a regimen of warfarin, b-blocker and statins. At the third month follow-up he was free from angina.

DISCUSSION

LMCA aneurysms are very rare clinical entities that most commonly discovered incidentally at routine coronary angiography. LMCA aneurysm is very rare with only 0.1% incidence.[2] It has been demonstrated that atherosclerosis is the major cause of CAAs. Other causes include congenital heart diseases, trauma, Kawasaki disease, Ehlers-Danlos syndrome, Marfan syndrome, systemic lupus erythematosus, Takayasu arteritis, polyarteritis nodosa, syphilitic aortitis, scleroderma, Behcet's disease and fibromuscular dysplasia. Hypertension, dyslipidemia, hyperinsulinemia, smoking, hyperhomocysteinemia and specific human leukocyte antigens (HLA) and RAS gene polymorphisms have been identified as risk factors for the development of CAA.[5] In this case, typical characteristics of inflammatory disease, such as high erythrocyte sedimentation rate (ESR) or C-reactive protein (CRP) levels were absent. Etiological evaluation was also negative for immune disorders, hematopoietic alterations and syphilis. Clinically, most aneurysms are silent. The primary complication is myocardial ischemia or infarction secondary to the abnormal flow within the aneurysm which causes thrombus formation and distal embolization.[1] Our patient was admitted with chest pain and palpitations. Atherosclerosis seems to be the most probable cause of the aneurysm in our patient. Coronary angiography is the gold standard for the diagnosis. However, in patients who have difficulties in diagnosis during angiography (e.g. inability to visualize the distal segment of the vessel), other non-invasive tests such as; MSCT, cardiac magnetic resonance imaging (MRI), intracoronary imaging including intravascular ultrasound (IVUS) and optical coherence tomography (OCT) should be keep in mind for valuable anatomic information of the coronary anatomy. We could not perform IVUS or OCT due to technical incompetence. The management is challenging due to rarity of disease and unpredictable natural history. Recommendations for treatment have been based mainly on case reports with no known established guidelines. Medical management aims to prevent thromboembolic complications. Treatment with oral antiplatelet and anticoagulation therapy with close follow-up has been successfully applied in symptom-free patients with uncomplicated LMCA aneurysms.[6] Surgical management is preferred in symptomatic patients who suffer from myocardial ischemia with evidence of thromboemboli to the distal vessels. Surgery is also indicated in cases of progressive enlargement of the LMCA aneurysm, as documented by serial angiographic evaluation.[2,6] Patients not treated surgically must be monitored very closely and treated with antiplatelet and anticoagulation therapy to prevent thrombus formation within the aneurysm. It is essential to follow up these patients every 3 months.

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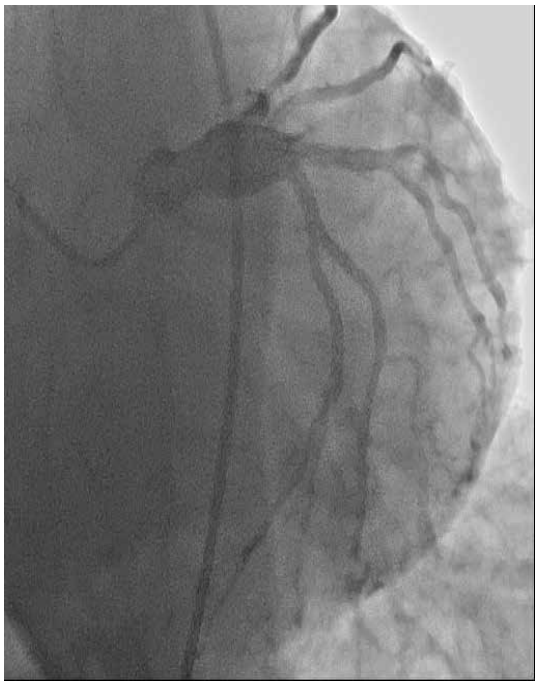

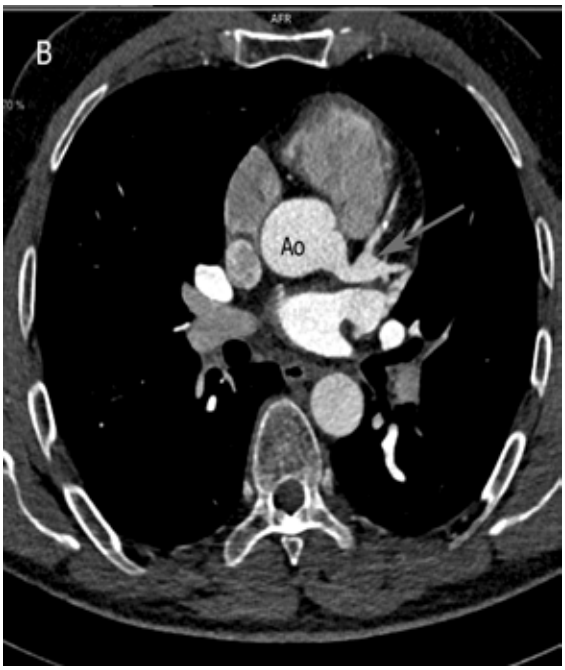

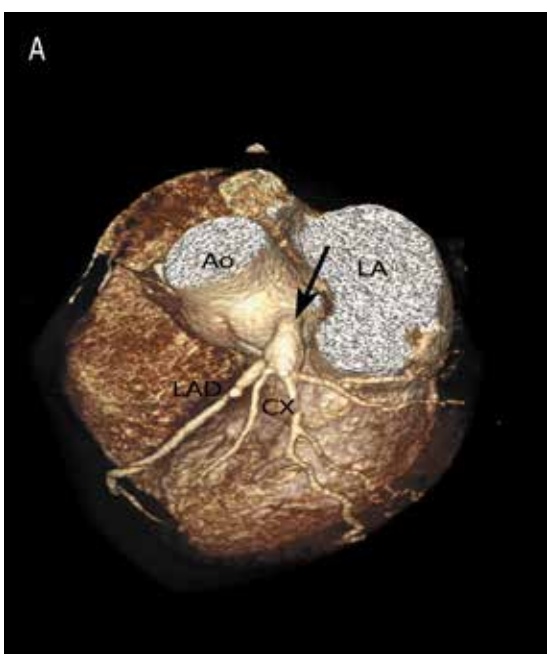

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