ABCResearch

Arch Basic Clin Res 2024; 6(2): 157-158 • DOI: 10.5152/ABCR.2024.24265

Image of Interest

Left Main Coronary Artery Aneurysm

Hakkı Yeşilyurt[1], Düzgün Can Şenbil[2], Zeynep Deve[2]

[1]Department of Anatomy, Yüksek İhtisas University Faculty of Medicine, Ankara, Türkiye
[2]Department of Radiology, Erzincan Binali Yıldırım University Faculty of Medicine, Erzincan, Türkiye

Cite this article as: Yeşilyurt H, Can Şenbil D, Deve Z. Left main coronary artery aneurysm. *Arch Basic Clin Res.* 2024;6(2):157-158.

ORCID IDs of the authors: H.Y. 0000-0002-6885-3443, D.C.S. 0000-0003-0233-7371, Z.D. 0009-0003-9159-0981.

Left main coronary artery aneurysms are incredibly uncommon clinical entities that are incidentally detected in about 0.1% of individuals undergoing standard angiography.[1,2]

In this study, we report a case of left main coronary artery aneurysm, a rare finding on computed tomography coronary angiography (CTCA) imaging in a 59-year-old male patient. Our study was retrospective and patient consent was obtained.

A 59-year-old male patient with known hypertension was admitted to the cardiology outpatient clinic with the complaint of chest pain radiating to the back, which had been intermittent for the last 1 month. The patient had a history of coronary angiography for chest pain once before, hypertension for 8 years, and smoking 20 packs/year and was taking amlodipine 10 mg once a day. On physical examination, arterial blood pressure was 151/92 mm Hg, pulse 83/min rhythmically and respiratory system examination was normal. On cardiac auscultation, S1 and S2 were normal. No pathologic findings were observed on chest radiography. Electrocardiogram showed normal sinus rhythm. Echocardiography findings were normal and left ventricular ejection fraction (LVEF) was 55%. Laboratory findings including complete blood count, liver, kidney, and thyroid function tests were within normal limits and no increase in cardiac biochemical markers was observed. Computed tomography coronary angiography was planned because of the patient's existing conditions and current complaint. The CTCA scan revealed the presence of a saccular aneurysm of approximately 15 mm at the apex of the left main coronary artery (LMCA) at the junction where the left anterior descending artery–circumflex artery (LAD-Cx) branches from the LMCA (Figure 1, 2). Additionally, there were calcific atheroma plaques observed in the surrounding vascular structures at this particular level. Medical treatment consisting of antiplatelet and statin group drugs was planned for the patient and medical follow-up was decided.

A rare condition known as coronary artery aneurysm (CAA) is characterized by the expansion of segments that are more than 1.5 times the diameter of nearby coronary arteries.[1-3] Most often (40%-70%), the right coronary artery is damaged, then the left anterior descending artery (32.3%) and left circumflex artery (23.4%). Involvement of three coronary arteries or the left main artery is substantially less common, occurring in only 3.5% of cases.[3]

About half of the cases of CAA are caused by atherosclerosis; other causes include trauma, scleroderma, fibromuscular dysplasia, syphilitic aortitis, polyarteritis nodosa, congenital heart diseases, Ehlers–Danlos syndrome, Kawasaki disease, Marfan syndrome, and Takayasu arteritis.[1,2] In our case, narrowing of other vessels due to plaque suggests an atherosclerotic origin, and no other cause was found.

Even though CAAs can occur at any age, those associated with atherosclerosis typically manifest later in life than those that are inflammatory or congenital.[1]

Although CAAs are usually asymptomatic, their clinical presentations differ based on the underlying cause when symptoms do emerge.[4] Patients with symptoms typically present at the cardiology clinic with indications of heart failure or ischemia.[4] However, acute myocardial infarction, coronary thrombosis, and sudden death are serious complications.[2] During diagnostic coronary angiography, aneurysms are frequently unintentionally

Corresponding Author: Zeynep Deve, **E-mail:** zeynephansu@gmail.com

Received: March 8, 2024
Revision Requested: April 19, 2024
Last Revision Received: April 30, 2024
Accepted: May 3, 2024
Publication Date: May 27, 2024

Figure 1. CTCA images (axial) of the patient: a saccular aneurysm at the apex of the LMCA at the junction where the LAD-Cx branches from the LMCA (arrow). CTCA, computed tomography coronary angiography; LAD-Cx, left anterior descending artery–circumflex artery; LMCA, left main coronary artery.

found, despite the fact that the majority of patients are asymptomatic. Also, noninvasive methods such as echocardiography, CT, and MR imaging can be used to diagnose them.[3]

Patients with left main coronary artery aneurysms can be adequately handled with surgery or medication, depending on the severity of the underlying coronary stenosis.[1]

In conclusion, left coronary artery aneurysm is a rare condition, and treatment planning should consider the aneurysm's location, size, and clinical manifestations.

Informed Consent: Informed consent was obtained from the patient who agreed to take part in the study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – H.Y., D.C.Ş.; Design – H.Y., D.C.Ş., Z.D.; Supervision – H.Y., D.C.Ş.; Resource – D.C.Ş., Z.D.; Materials – D.C.Ş.; Data Collection and/or Processing – H.Y., Z.D.; Analysis and/or Interpretation – H.Y., Z.D.; Literature Search – D.C.Ş., Z.D.; Writing – H.Y., D.C.Ş., Z.D.; Critical Review – H.Y., D.C.Ş.

Declaration of Interests: The authors have no conflict of interest to declare.

Funding: The authors declared that this study has received no financial support.

Figure 2. CTCA images of the patient: a saccular aneurysm at the apex of the LMCA at the junction where the LAD-Cx branches from the LMCA (arrow). CTCA, computed tomography coronary angiography; LAD-Cx, left anterior descending artery–circumflex artery; LMCA, left main coronary artery.

REFERENCES

1. Doustkami H, Maleki N, Tavosi Z. Left main coronary artery aneurysm. *J Tehran Heart Cent*. 2016;11(1):41-45.
2. Pavlidis AN, Malakos JS, Karavolias GK, et al. Left main coronary artery aneurysm. *Herz*. 2012;37(5):565-566. [CrossRef]
3. Abou Sherif S, Ozden Tok O, Taşköylü Ö, Goktekin O, Kilic ID. Coronary artery aneurysms: a review of the epidemiology, pathophysiology, diagnosis, and treatment. *Front Cardiovasc Med*. 2017;4:24. [CrossRef]
4. Altay S, Velibay Y, Keleş İ, et al. Dev sol ön inen koroner Arter (LAD) Anevrizması. *Cerrahpaşa Tıp Derg*. Kasım 2013; 41(1):29-31.