

A Case of Fusiform Aneurysm of Left Main Coronary Artery

Hüseyin Yılmaz, MD, İbrahim Demir, MD, Oktay Sancaktar, MD
Akdeniz University, Medical Faculty, Cardiology Department, *Antalya*

Introduction

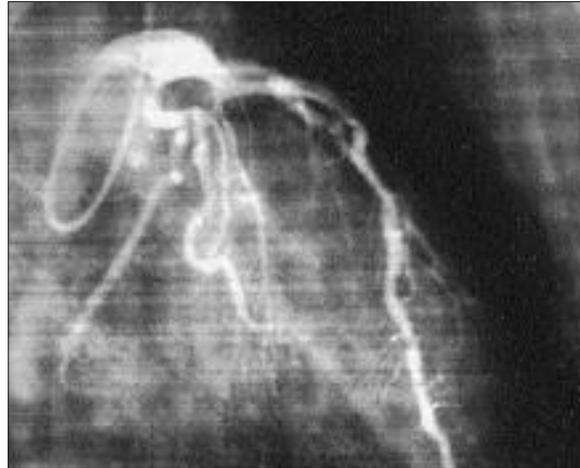
Left main coronary artery aneurysm is a rare coronary anatomic abnormality. Despite its rarity, it may lead to undesirable clinical circumstances that may cause death. Those are myocardial ischemia, myocardial infarction (1-3), distal thrombosis, and rupture of coronary aneurysm (3). Reported incidence of coronary aneurysm is between 0,15-4,9 % among all patients who underwent coronary angiography (1). Up to date limited number of cases have been described in the literature.

This report has the objective of presenting a case of aneurysm of the left main coronary artery and summarizing the available data from the literature about this uncommon entity and of its yet uncertain management.

Case Report

A 59 years old male was admitted to the emergency department on account of squeezing type of chest pain of 1-month duration that had been worsened within 2 days. Patient had had the history of inferior myocardial infarction 6 months before. As risk factors for coronary disease, diabetes mellitus, hypertension and hyperlipidemia were found. His physical examination was normal and ECG revealed pathologic Q waves in inferior derivations. After intensive medical management with intravenous nitrate, beta-blocker, acetylsalicylic acid, and LMW heparin, he was devoid of any symptoms of myocardial ischemia. He subsequently underwent coronary angiography and left ventriculography (VG). Coronary angiography revealed an aneurysm of the left main coronary artery measuring 12 mm in diameter extending

into proximal left anterior descending and circumflex arteries (Figure-1). Other lesions were 75% stenosis of mid LAD, 95% stenosis of intermediate artery, 70% stenosis of 1st obtuse marginal branch of CX and 80% stenosis of right coronary artery (RCA). Left VG demonstrated good systolic function (EF % 55) with akinesis of the posterobasal segment. There were no clinical history and laboratory findings suggesting any underlying disease except atherosclerosis.



After careful consideration of coronary anatomy and clinical symptoms, patient underwent myocardial revascularization. Aneurysm was ligated to get rid of complications such as rupture and thrombosis. He was free of symptoms with preserved left ventricular function 4 weeks after operation without inducible ischemia on non-invasive evaluation.

Discussion

Coronary artery aneurysm (CAA) is defined as the presence of a segment of coronary artery with a diameter of >1,5 times the adjacent normal section

(4). Reported incidence of CAA is between 0,15-4,9 % among all patients who underwent coronary angiography (1). The highest rate of incidence was reported in the CASS (the Coronary Artery Surgery Study) study, which found that 4.9% of the total population of the register had aneurysmatic dilatation (1). Highest rates of coronary aneurysm were reported in Kawasaki disease as a late complication, but there are no reported isolated aneurysms of LMCA in case of Kawasaki disease. Atherosclerotic coronary disease is the most common cause in the United States. Hartnell et al. (4) in a prospective study of almost 5,000 cardiac catheterizations found coronary dilations in 70 patients. According to Lenihan and co-workers (2), CAA in patients younger than 33 years-old are congenital. In most patients older than 33 years-old and in all patients older than 56 years-old, the CAAs are caused by atherosclerosis (2). Other reported causes of LMCA aneurysm include, Takayasu disease (5), thoracic trauma and complicated angioplasty (6).

The natural course of CAAs is variable. The main complication is myocardial ischemia or infarction (1), but aneurysm rupture can also occur rarely (3). Rath et al. (6) reported that occlusion of the aneurysmatic nonstenotic coronary artery caused infarction in all five patients in the follow-up.

Natural history and progression of this condition is not known and undetermined. Whichever is the responsible mechanism, it is definite that the dilated sections present in coronary arteries are not benign entities. Reports in the literature (1, 3, 4, 7, 8) show that these areas, even without the association of stenosis, are subject to spasm, thrombosis, and spontaneous dissection, and as such, are potential causes of acute myocardial infarction.

Treatment modality is not standardized for LMCA aneurysm. The conservative treatment consists of attempts to prevent thromboembolic complications by anticoagulants or antiplatelet drugs. Surgical modalities are isolation, resection, reconstruction, or ligation of LMCA with concomitant myocardial revascularization to eliminate the risk of aneurysm rupture and coronary thrombosis (6). In early cases LMCA aneurysm were treated by bypass grafting

alone without exclusion of the aneurysm from the coronary circulation, and later, by isolating the aneurysm with ligatures or resecting the aneurysm and performing simultaneously necessary bypass grafts (9, 10). Leung AW et al. (10) reported sealing of LMCA aneurysm by stent graft only in one patient.

In summary LMCA aneurysm is rare and its etiology, treatment, and prognosis remain obscure, but, depending on pooled data from the literature coronary artery by-pass grafting with ligation of the aneurysm seems to be an ideal surgical treatment for LMCA aneurysm.

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