Case Report/Vaka Sunumu

ANEURYSM INVOLVING BIFURCATION OF LEFT MAIN CORONARY ARTERY: A CASE REPORT

SOL ANA KORONER ARTER BİFÜRKASYON ANEVRİZMASI

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Abstract

Coronary artery aneurysms (CAA) are rare entities with a reported incidence rate of 0.1% to 5.3% in patients who have undergone coronary angiography. Atherosclerosis and connective tissue disorders are the main causes of CAA. However, trauma, vasculitis, and congenital and idiopathic reasons are also known to lead to CAA. Aneurysms usually arise from the proximal and middle segments of the right coronary artery, with aneurysms of the left main coronary artery being extremely uncommon. Though CAA may be asymptomatic, it can present in serious clinical manifestations including ruptured aneurysm, distal thrombosis and myocardial infarction. The case in this report is unusual as it involves bifurcation of the left main coronary artery, a rare localization for CAA. The purpose of this report is to highlight the clinical picture and treatment options for such patients.

Keywords: Aneurysm, Left Main Coronary Artery, Coronary Angiography.

Özet

Koroner arter anevrizmaları (CAA) koroner anjiyografi geçiren hastalarda % 0.1 ila 5.3 oranında görülen nadir bir durumdur. Ateroskleroz ve bağ doku hastalıkları CAA'nın başlıca nedenleridir. Bununla birlikte, travma, vaskülit, konjenital ve idiyopatik nedenlerin de CAA'a yol açtığı bilinmektedir. Anevrizmalar genellikle sağ koroner arterin proksimal ve orta kesimlerinden kaynaklanırken, sol ana koroner arter anevrizmaları son derece nadir olarak görülmektedir. CAA, asemptomatik olabileceği gibi anevrizma rüptürü, uzak tromboz ve miyokard infarktüsü gibi ciddi klinik belirtilerle de ortaya çıkabilir. Bu vaka bildirimindeki olgu sol ana koroner arter bifürkasyon bölgesinde görülen bir anevrizma olması nedeniyle nadirdir. Bu olgu sunumuyla, bu tür hastalar için klinik tablo ve tedavi seçeneklerinin vurgulanması amaçlanmaktadır.

Anahtar kelimeler: Sol koroner arter anevrizması, Koroner anjiografi

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Introduction

CAA is defined as >1.5-fold dilation of a coronary segment. Aneurysms involving coronary arteries are rare entities with a reported incidence rate of 0.1% to 5.3% in patients who undergo coronary angiography in different studies (1, 2). They are more prevalent among men than women. Atherosclerosis is the main cause of CAA in adults, and Kawasaki disease in children and adolescents. Other causes include connective tissue disorders -- such as polyarteritis nodosa, -- systemic lupus erythematosus, trauma, vasculitis, and mycotic, congenital and idiopathic reasons (2, 3). Aneurysms usually arise from proximal and middle segments of the right coronary artery (RCA) and, less frequently, they arise from the left anterior descending (LAD) and circumflex (CX) arteries. The left main coronary artery (LMCA) is a rare localization for CAA, with an incidence of 0.1% (4-5). Despite its rare occurrence, aneurysms involving LMCA may cause unfavorable clinical conditions that can result in death. These include myocardial infarction, distal thrombosis and the rupture of an aneurysm (6). Yet, there is no standardized treatment modality for CAA. Current approaches vary from conservative to surgical treatment.

Case report

A 64-year-old man presented to our clinic with shortness of breath, abnormal sweating and chest pain during exertion that was relieved with rest. These symptoms had been occurring over a 4 month period. His medical history revealed hypertension, hyperlipidemia and a positive family history of coronary artery disease. Upon physical examination, no abnormality was detected. Electrocardiography showed a normal sinus rhythm (67 bpm) and non-specific ST-T wave changes; thus, ECG was considered within normal range. No abnormality was detected in complete blood count and biochemical analyses, inclusive of cardiac enzymes. Echocardiography revealed mild septal hypertrophy, grade 1 diastolic dysfunction and normal left ventricular systolic function (60% by modified Simpson's method). A saccular, aneurysmal lesion (11.9 x 13.8 mm in size) was detected on coronary angiography extending from distal segment of the left main coronary artery to the left anterior descending and left circumflex arteries.

In addition, non-critical stenosis was detected in the left anterior descending (50%) and right main coronary (30%) arteries (Fig. 1A-1B-1C). Ventriculography performed in the same session was considered within normal range. The patient's symptoms improved after treatment with acetylsalicylic acid (100 mg), metoprolol (50 mg),and atorvastatin(20 mg) and a decision was made to discharge him with the recommendation of medical therapy. At the 3-month follow-up examination, the patient was found to be doing well. At the 5- month follow-up examination, the patient presented with poor but improved exercise capacity and no angina attacks at rest. At the 7-month follow-up examination, the patient was doing well and had no compliant.

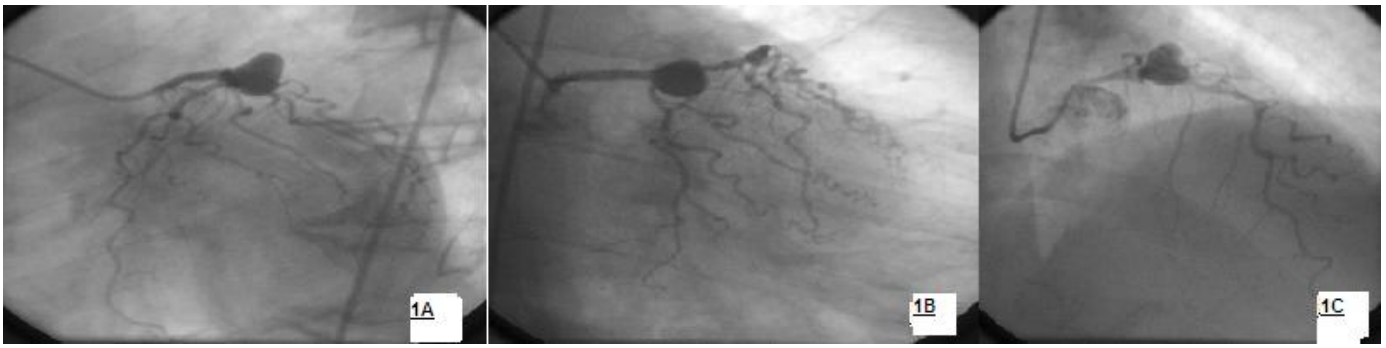

Figure: Angiographic view of left coronary system

Figure 1A: Left anterior, oblique, cranial angiographic view of left coronary system

Figure 1B: Right caudal angiographic view of left coronary system

Figure 1C: Right cranial angiographic view of left coronary system.

Discussion

Most CAA present as incidental findings, with rare cases of aneurysms involving LMCA. Such patients may have a broad clinical spectrum of conditions from asymptomatic disease to acute coronary syndromes, resulting in death. Abnormal flow within an aneurysm predisposes patients to the primary complication of myocardial ischemia or infarction. (7).

Rupture of a CAA is exceedingly rare (6) as CAA is extremely rare conditions. This makes conducting large, randomized, clinical trials a challenge. As a result, the decision making process for optimal management of LMCA aneurysms must be based on anecdotal reports, single case reports and small series. Treatment is determined by the experience and expertise of the clinician and the clinical findings in an individual patient. Treatment generally falls into two modalities. The first is conservative therapy (e.g. anticoagulant agents, anti-platelet agents, and statins) aiming to achieve anticoagulation and anti-aggregation for the prevention of complications. The other is surgical therapy (isolation, resection, thrombectomy, coronary artery reconstruction, and coronary artery bypass grafting). Surgical ligation is not generally indicated but should be considered for large aneurysms with evidence of recurrent thrombosis and embolization (6). Surgery is the first treatment of choice for CAA in settings of acute coronary syndromes (8). Surgery is also indicated in cases of progressive LMCA enlargement. Patients not managed surgically should be monitored at regular intervals (9). Regardless of the treatment modality employed, regular clinical and hemodynamic evaluations are recommended to prevent unfavorable clinical outcomes.

The patient in this case report complained of chest pain and dyspnea. His echocardiography showed no segmental wall hypokinesia and his cardiac enzymes were within normal ranges. Consequently, acute coronary syndrome was excluded. Coronary angiography showed non-critical lesions, TIMI-3 flow and CAA without associated fistula. There was no finding of hemodynamic instability. Poor exercise capacity was blamed for chest pain in this case, with CAA as an incidental finding.

In patient with CAA and acute coronary syndrome initial therapy with aspirin, clopidogrel, statin and anticoagulation is recommended. Patients with the following should be considered for revascularization; TIMI 0 or 1 flow in

the aneurysmal vessel, patients with recurrent angina or ischemia, sustained ventricular tachycardia or hemodynamic instability including sustained hypotension. If these findings are not present during the initial presentation a conservative management strategy is recommended (10).

As the patient was stable, medical therapy -- including antiplatelet, statin and b-bloker -- was chosen. Although anticoagulant therapy is recommended for patients with giant CAA, our patient refused anticoagulant therapy, because of the risks of bleeding.

In this case report, a rare localization of coronary artery aneurism has been presented. Although aneurysms may cause unfavorable clinical conditions including death, they can be silent as seen in the patient in our report.Although surgery is the preferred therapy in patients who have significant coronary artery lesions, concomitant valvular disease, fistulas, etc., medical therapy is an option for stable patients. As our patient had no history of any of these conditions, medical therapy was initiated.

Atherosclerosis is the main cause of CAA in adults. Likewise, based on test results and observations, it is our belief that the etiology of this patient's aneurysm was atherosclerosis.

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