A Large Fusiform Aneurysm of the Left Main Coronary Artery: A Case Report

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SOL ANA KORONER ARTERİN BÜYÜK FÜZİFORM ANEVRİZMASI: OLGU SUNUMU

ÖZET

Normal segmentlerin 1,5 katından daha fazla genişlemiş segmentler olarak tanımlanan koroner arter anevrizmaları şekillerine göre füziform ve sakküler olarak sınıflandırılırlar. Değişik infeksiyöz ve inflamatuar etkenlere bağlı olabilen bu patoloji daha çok ateroskleroz zemininde gelişir ve sol ana koroner arteri nadiren tutar. Bu yazıda iki damar hastalığıyla birlikte seyeden büyük bir füziform sol ana koroner anevrizma olgusu sunulmaktadır.

Anahtar kelimeler: *Koroner anevrizma, koroner angiyografi*

Coronary arterial aneurysms were first recognized and reported in postmortem studies. The first case was reported by Morgagni in 1761 [1]. With the advent of coronary angiography coronary aneurysms are being diagnosed with increased frequency. The reported incidence among patients with suspected coronary artery disease is 0.15- 4.9%. [1-4]. They are most commonly found in the proximal and midportions of the right coronary artery. The left main coronary artery (LMCA) is rarely involved [4,5].

We report on a patient with a large coronary artery aneurysm of atherosclerotic origin involving the LMCA.

CASE REPORT

A 62 year old, previously healthy man came to the outpatients-clinic due to new onset exertional chest pain and dyspnea. His past medical history was negative for hypertension, diabetes mellitus, hyperlipidemia and family history for cardiovascular disease. He was an exsmoker and has had chronic bronchitis for 24 years and has been treated with aminophylin.

Physical examination revealed no pathologic findings except for a blood pressure of 90/60 mmHg. Chest X-ray was normal. ECG showed normal sinus rythm. Because of typical complaints cardiac catheterization was undertaken.

Left ventricular angiography revealed a normal left ventricular cavity with mildly hypokinetic anterolateral and apical segments. Coronary angiography revealed a 30 mm x 15 mm aneurysm of the left main coronary artery without calcification or thrombus. Significant stenosis were also noted in the proximal portion of the left anterior descending artery (%70) and midportion of the circumflex artery (%80) (Fig. 1 and 2).

The patient subsequently underwent succesful surgical revascularization. At the operation intermedier artery, left anterior descending artery and the first diagonal arteries were bypassed with preharvested saphenous vein grefts. LIMA was not used because of its low quality. With a diagonal aortotomy, left coronary ostium and the aneurysm were exposed. The aneurysm was filled with "surgicell" and the left coronary ostium was obliterated with 5/0 polypropylene suture just to avoid embolisation. Peroperative and postoperative period of the patient was uneventful. He continues to be asymptomatic 12 months after surgery.

DISCUSSION

Coronary arterial aneurysms are defined as dilated coronary arterial segments >1.5 times the diameter of adjacent normal segments or the largest coronary artery or three times the diameter of a standart coronary catheter [1-5]. They are classified as either fusiform (with a dilatation along the axis of a vessel at least twice the diameter of the transverse dimension) or saccular (with the transverse dimension greater than the longitudinal dimension) [6]. In older adults the vast majority of cases coexist with significant atherosclerotic disease [4]. Other potential causes include congenital malformation and a variety of infectious and inflammatory lesions (e.g. subacute bacterial endocarditis, Kawasaki's disease, Marfan syndrome, Takayasu's arteritis, rheumatic fever, mycosis, syphilis) and trauma [7]. There are also a few reported cases associated with previous balloon angioplasty [8,9].

The incidence of atherosclerotic coronary aneurysms is about 0.2% and the LMCA is the least frequently

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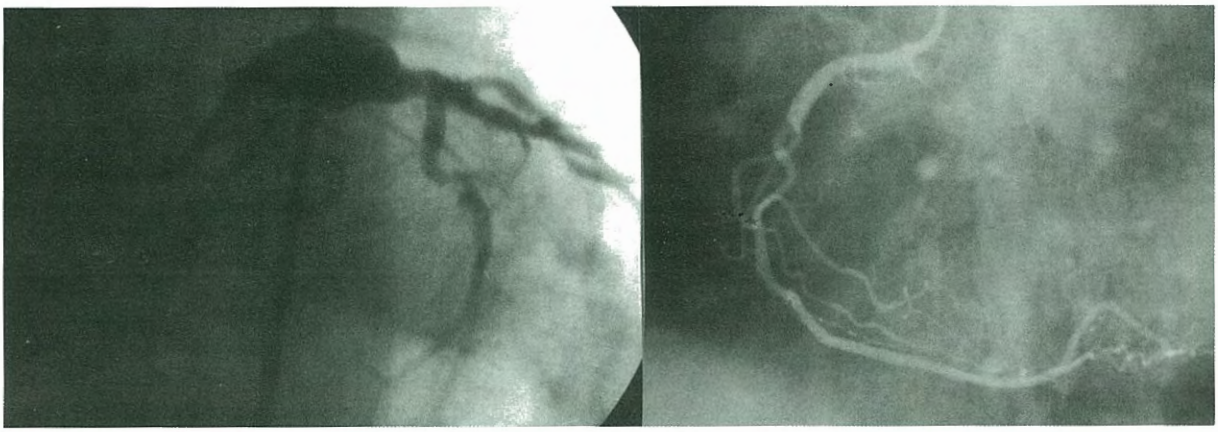

Figures 1. AP cranial view showing the aneurysmatic left main coronary artery and the obstructed LAD and Cx arteries. **2.** RAO view showing the normal RCA

involved artery [1-5]. As mentioned above left main coronary artery aneurysms (LMCAA) are extremely rare. The Coronary Artery Surgery Study (CASS) represents the largest series with 978 (4.9%) of 20087 patients identified as having aneurysmal coronary artery disease [4]. None of these patients had aneurysmal disease involving the left main coronary artery . Tunick et al evaluated 8422 patients referred to angiography and found only one LMCAA among 22 cases [10]. A literature review by Caputo et al done in 1995 revealed only 13 cases of LMCA aneurysms, 8 of which were associated with atherosclerosis [11]. Since then only 8 additional cases of LMCAA of atherosclerotic origin were reported [12-19].

Among the reviewed cases there are only two other cases of atherosclerotic LMCAA that were comparable in shape (fusiform) and dimension (30 x 15 mm) [5,20]. To our knowledge, this case represents the second largest LMCA aneurysm of atherosclerotic origin previously reported. Concomitant presence of 2-vessel disease and the lack of history of other conditions known to cause arterial aneurysm support the atherosclerotic etiology.

The therapeutic approach in patients with LMCA aneurysm without significant occlusive disease may be contraversial [10]. Hypothetically blood flow alteration in the aneurysm may cause hemostasis, thrombosis, angina and increased mortality. Reported complications for coronary artery aneurysms include thrombosis and distal embolization, rupture and vasospasm, and the natural history and prognosis remains obscure [22]. Several studies including all coronary aneurysms showed no difference in outcome of medically or surgically treated patients [10,23]. The status of atherosclerotic disease is the most important factor influencing the outcome. Surgery based on the severity of associated coronary stenosis rather than the mere presence of aneurysm is recommended for coronary aneurysms in general [22,24] A surgical approach was indicated for this patient because of significant symptomatic 2- vessel disease. For the reported LMCAA cases the preferred technique is revascularization with or without ligation [24]. Stenting has begun to play an increasingly important role in the management of coronary artery aneurysms [25]. Leung et al reported the sealing of a LMCAA with a stent graft succesfully [26].

The atherosclerotic aneurysm of the LMCA is a rarity. Surgical intervention based on the clinical status of the patient and associated coronary stenosis is recommended. With the advent of interventional cardiological techniques sealing by stent implantation may be an alternative approach.

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