Left Atrial Myxoma and Concomitant Atherosclerotic Coronary Artery Disease

Sol Atriyal Miksomaya Eşlik Eden Aterosklerotik Koroner Arter Hastalığı

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Abstract

Here we describe the case of a 71-year-old female patient who was admitted to our department with acute coronary syndrome. Trans-thoracic echocardiography evaluation to assess left ventricular functions incidentally detected a left atrial mass attached to the inter-atrial septum together with a left ventricular segmental wall motion abnormality due to acute anterior myocardial infarction. Coronary angiography revealed diffuse coronary artery disease. Because early surgery was not advised due to the high mortality risk, successful coronary angioplasty and stenting was performed in this emergecy situation. It may be informative to study the images from the echocardiography prior to angiography in this study as well as to determine the anticipated signs that may affect the treatment options for similar patients.

Keywords: Left atrial mass, Atherosclerotic coronary artery disease, Acute coronary syndrome

Özet

71 yaşında kadın hasta akut koroner sendrom nedeni ile başvurdu. Koroner anjiyografi öncesi sol ventrikül fonksiyonlarını değerlendirmek için yapılan transtorasik ekokardiyografi akut koroner sendroma bağlı olarak gelişen sol ventrikül duvar hareket kusuruna ilavaten tesadüfen sol atriumda interatriyal septuma bitişik bir kitle gösterdi. Koroner anjiyografide ise diffüz damar hastalığı tespit edildi. Cerrahi girişim yüksek mortalite nedeni ile yapılamayınca bu çok acil durumda sol ön inen damara başarılı anjiyoplasti ve stent uygulandı. Anjiyografi öncesi yapılan ekokardiyografi beklenen bulgulara ilaveten başka bulgularda sağlayabilir ve bu, tedavi seçeneklerini etkileyebilir.

Anahtar Kelimeler: *Sol atriyal kitle, Aterosklerotik koroner arter hastalığı, Akut koroner sendrom*

Introduction

Atrial myxoma is the most common cardiac neoplasm, and up to 80% of myxomas are localized in the left atrium. Of these, 75% involve the interatrial septum. The mean age of presentation has been reported to be between 30 and 70 years. There is a female-to-male predominance between 3:2 and 2:1 [1,2]. Concomitant presence of coronary artery disease has been described, although infrequently [3]. The aim of this study is to report the case of a patient with left atrial myxoma and an obstructive coronary lesion presenting with acute myocardial infarction and to discuss the early revascularization needs of the patient.

Case Report

A 71-year-old female was admitted to another hospital with a diagnosis of acute ST elevation anterior wall myocardial infarction (MI) with a 2-hour duration and received thrombolytic therapy. She was referred to our institution for early percutaneous coronary intervention (PCI) due to persistent chest pain and dynamic ECG results. Upon physical examination, the patient had a heart rate of 78 beats/min, and a regular blood pressure of 140/80 mmHg. Examination of the lung and abdomen was normal. However, cardiac examination revealed a grade 2/6 systolic ejection murmur. The electrocardiogram (ECG) showed ST elevation in leads V1-V6. Echocardiographic evaluation identified left ventricular apical akinesis with an ejection fraction of 38% and incidentally a left atrial mass, 20 x 18 mm in size, attached to the interatrial septum of left atrium, although not leading to obstruction hemodynamically. A flow of mild to moderate grade mitral regurgitation was also observed by color Doppler echocardiography. Coronary angiography performed for the patient on the first day of admission showed plaques with non-critical stenosis in the left circumflex (LCX) artery, an ostial stenosis of 50% of the right coronary artery (RCA), but 99% stenosis at the proximal portion of the left anterior descending (LAD) artery (Figure 1. A). Left ventriculography demonstrated antero-apical akinesia with an ejection fraction of 35%. The left atrial mass has no feeding artery. Cardiac operation consisting of myxoma resection and coronary artery by-pass surgery was not recommended by cardiac surgeons in the setting of acute myocardial infarction and high troponin level (>22.7 µg/L). Therefore, the patient was scheduled for PCI. After balloon angioplasty, a successful treatment of the LAD lesion by stenting was performed.

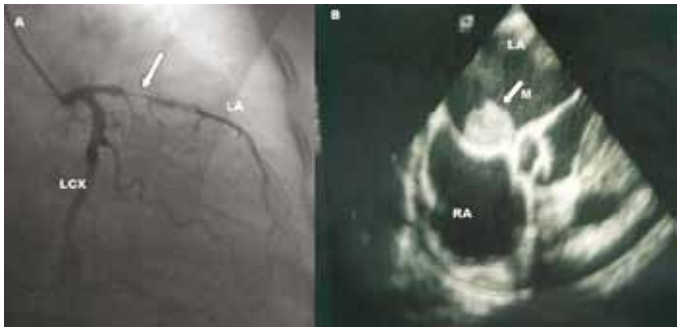

Fig. 1 — A: Coronary angiogram in RAO project demonstrating severe stenosis in LAD artery (White arrow). (LAD, Left anterior descending artery; LCX, Left circumflex artery; RAO, right anterior oblique image). B: Transesophageal image clearly reveals a sessile mass attached to interatrial septum (White arrow) (LA, Left atrium; RA, right atrium; M, Miksoma).

On the second day, transesophageal echocardiography showed an echodense, sessile immobile homogeneous tumor-like mass with a shaggy surface (20 × 20 mm in size) attached to the interatrial septum in the fossa ovalis region (Figure 1. B). Patent foramen ovale (PFO) was not present. Other tests including contrast enhanced computed tomography (CT) of the thorax and abdomen and laboratory tests were undertaken to rule out any tumor metastasis. The CT of the thorax and multiplanar reconstruction images revealed a sessile mass with an irregular surface size of 20 x 20 mm in the left atrium (Figure 2. A,B). These features were suggestive of a left atrial myxoma.

The patient was discharged after two days without any complications. Further medical treatment consisted of double oral antiplatelet therapy and eventual myxoma resection in an elective cardiac surgery. However, the patient is still considering this option.

Discussion

Here we have presented a unique case of concomitant atherosclerotic coronary artery disease and left atrial myxoma.

The myxoma embolization generally displays a predilection for the central nervous system, but can also affect other organs such as the liver, spleen, kidney, retina, coronary vessels, and distal arterial tree [4]. In conjunction with acute coronary syndromes and left heart myxoma, coronary embolization should always be considered. The incidence of coronary embolization of myxomas is 0.06%. A previous review documented that inferior myocardial infarctions have been seen in 63.6%, anterior in 22.7%, and posterior in 9.1% secondary to myxoma embolization [3]. However, diffuse atherosclerotic lesions such as moderate ostial stenosis in RCA and severe stenosis in LAD confirms atherosclerotic coronary artery disease rather than myxoma embolization in our patient. Notably, the patient's risk factors for atherosclerosis such as uncontrolled hypertension and postmenopausal status favor the diagnosis of coronary atherosclerosis.

Acute anterior myocardial infarction will give rise to thrombus formation particularly in the left ventricular apical region secondary to blood stasis [5], however the interatrial septum is an unlikely site for any thrombus formation in the presence of acute MI.

Paradoxical embolism occurs following the passage of embolic material from the venous to arterial circulation through a right to left shunt, frequently a PFO. Sometimes, a thrombus wedged across patent foramen ovale could be detected [6]. Although an entrapped thrombus in PFO is a diagnostic possibility when a paradoxical embolism is suspected, transesophageal echocardiography revealed no evidence of PFO, making this possibility unlikely in our patient.

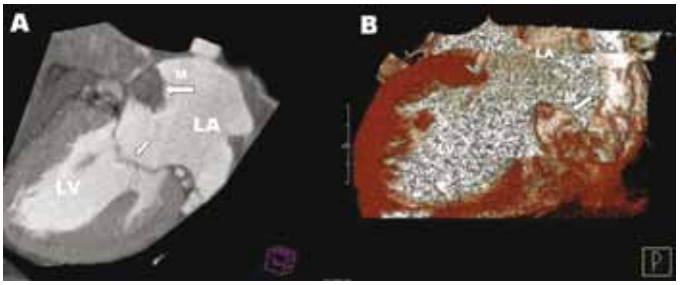

Fig. 2 — A: Axial oblique MIP image of the left heart shows the presence of an attached mass (White arrow) to the interatrial septum and clearly seen mitral valve (White small arrow). (LA, Left atrium; LV, Left ventricle; M, Miksoma). B: Three-dimensional volume-rendered posterior view reformation shows the presence of the same left atrial.

On the basis of our patient's clinical, echocardiographic, coronary angiographic findings, concomitant coronary atherosclerosis and left atrial myxoma was diagnosed. As noted previously in the literature, the prevalence of coronary atherosclerotic disease in patients with myxoma ranges between 20.3% and 36.6% [3]. The incidental co-existence of such different diseases in a same patient support the idea that all patients should undergo presurgery echocardiogaraphic examination, especially in stable conditions, As soon as the diagnosis is made cardiac surgery should be performed.

We believed that surgery involving myxoma resection and coronary by-pass grafting was not the best option for our patient who had acute MI/ high troponin levels, and that this procedure could potentially increase the mortality rate and would be considered only if the previous treatments such as PCI and thrombolytic therapy failed. Of the choices provided, the optimal treatment in this acute setting was PCI and elective cardiac surgery for myxoma resection was the most likely therapy in this particular patient.

Conflict interest statement The authors declare that they have no conflict of interest to the publication of this article.

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