

Left atrial myxoma supplied by the circumflex coronary artery arising from the right sinus of Valsalva

Sağ sinüs Valsalvadan köken alan sirkumfleks koroner arterden beslenen sol atriyum miksoması

İbrahim Özdoğru, M.D., Mustafa Duran, M.D., Bahadır Şarlı, M.D., Abdurrahman Oğuzhan, M.D.

Department of Cardiology, Medicine Faculty of Erciyes University, Kayseri

Myxoma is the most common primary tumor of the heart. Although cardiac myxomas are histologically benign, they may be a source of emboli and cause intracardiac obstruction resulting in acute myocardial infarction. A 38-year-old male patient was admitted with a clinical presentation of acute coronary syndrome and angina of six-month history. The electrocardiogram showed sinus rhythm and pathological Q waves in leads D2-3 and aVF. Two-dimensional echocardiography showed a large immobile mass, 6.8x3.4 cm in size, in the left atrium, causing obstruction of the left ventricular inflow. The mass protruded through the mitral valve into the left ventricle. There was also inferior wall akinesia. Selective coronary angiography showed normal coronary arteries, but demonstrated marked neovascularization of the left atrial mass which was supplied by the left circumflex artery originating from the right coronary cusp. Ventriculography showed inferior wall akinesia. The patient was immediately submitted to cardiac surgery. The mass was resected and histologic diagnosis was atrial myxoma. The patient had an uneventful postoperative course.

Key words: Coronary angiography; coronary vessel anomalies; embolism/etiology; heart atria; heart neoplasms; myocardial infarction/etiology; myxoma/complications.

Intracardiac myxoma is the most frequent benign tumor of the heart. Myxomas are more common among women and can affect the atria, ventricles, or mitral valve, the left atrium being most commonly involved. Clinical presentation is characterized by obstruction of the mitral valve, embolism, and constitutional symptoms, in addition to fever, anemia, or an elevated erythrocyte sedimentation rate.^[1] About 29% of myxomas may lead to embolic events, the most frequent site of embolism being the cerebrum, fol-

Miksoma kalbin en sık rastlanan tümörüdür. Kardiyak miksomalar histolojik olarak benign olmalarına rağmen, akut miyokard infarktüsü ile sonuçlanan emboli kaynağı ve kalp içi tıkanıklık nedeni olabilirler. Otuz sekiz yaşında erkek hasta akut koroner sendrom tablosuyla ve altı aylık angina öyküsüyle başvurdu. Elektrokardiyografide sinüs ritmi ve D2-3 ve aVF derivasyonlarında patolojik Q dalgaları izlendi. İkiboyutlu ekokardiyografide sol atriyum içinde, sol ventrikül doluşunu engelleyen, 6.8x3.4 cm büyüklüğünde bir kitle görüldü. Kitle mitral kapağından sol ventrikül içine uzanım göstermekteydi. Ayrıca, inferior duvar akinezi saptandı. Selektif koroner anjiyografide koroner arterler normal bulunurken, sol atriyum kitlesinde belirgin neovaskülarizasyon izlendi. Kitle sağ koroner küspisden köken alan sol sirkumfleks koroner arterden besleniyordu. İnférieur duvar akinezi ventrikülografi ile de doğrulandı. Hasta acil şartlarda ameliyata sevk edildi. Çıkarılan kitlenin histolojik tanısı miksoma idi. Hastanın ameliyat sonrası seyri sorunsuz geçti.

Anahtar sözcükler: Koroner anjiyografi; koroner damar anomali; embolizm/etyoloji; kalp atriyumu; kalp neoplazileri; miyokard infarktüsü/etyoloji; miksoma/komplikasyon.

lowed by peripheral arteries and coronary arteries.^[2] Coronary embolism may present as acute myocardial ischemia with the typical clinical symptoms of acute myocardial infarction,^[3,4] or as a silent infarct.^[5] Tumor neovascularization at an angiographically detectable level is rare and sometimes starts from the branches of the coronary arteries.^[6] In this paper, a case of atrial myxoma is presented, which was supplied by the circumflex coronary artery arising from the right coronary cusp.

Received: September 03, 2007 Accepted: October 09, 2007

Correspondence: Dr. İbrahim Özdoğru, Erciyes Üniversitesi Tıp Fakültesi, Yılmaz ve Mehmet Öztaşkın Kalp Hastanesi, 38039 Kayseri, Turkey. Tel: +90 352 - 437 49 37 / 27790 Fax: +90 352 - 437 61 98 e-mail: iozdogru@erciyes.edu.tr

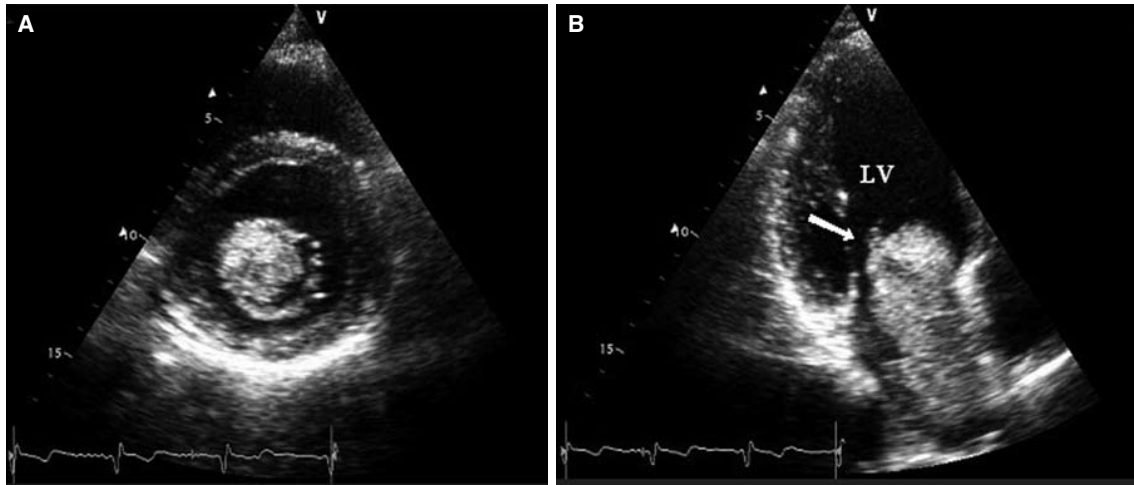


Figure 1. (A) Myxoma obstructing the mitral valve during diastole in the parasternal short-axis view. **(B)** The apical four-chamber view showing myxoma protruding through the mitral valve into the left ventricle.

CASE REPORT

A 38-year-old male patient was admitted to our hospital with a clinical presentation of acute coronary syndrome and angina of six-month history that had markedly progressed during the past weeks. Smoking was the only risk factor for coronary artery disease. On physical examination, a diastolic murmur was audible at the fifth intercostal space. His chest X-ray was normal. The electrocardiogram showed sinus rhythm and pathological Q waves in leads D2-3 and aVF. Levels of serum creatine kinase and its MB-fraction were 134 IU/l and 16 IU/l, respectively, and cardiac troponin T was negative. Two-dimensional echocardiography showed a large sessile mass lesion in the

normal-sized left atrium, arising from the left side of the interatrial septum. The mass seemed to be an atrial myxoma with 6.8 x 3.4 cm dimensions (Fig. 1a). It obstructed the left ventricular inflow and caused a mean gradient of 8 mmHg by Doppler echocardiography. In the apical four-chamber view, the mass protruded through the mitral valve into the left ventricle (Fig. 1b). There was also akinesia of the inferior wall of the left ventricle. Findings of technetium-99m sestamibi myocardial perfusion single-photon emission computed tomography were compatible with inferior wall infarction (Fig. 2).

Preoperative selective coronary angiography showed no signs of coronary artery disease, but demonstrated marked neovascularization of the left atrial mass supplied by the left circumflex artery which originated from the right coronary cusp (Fig. 3). Ventriculography showed inferior wall akinesia. The patient was immediately submitted to cardiac surgery. The mass was resected and histologic diagnosis was atrial myxoma. The patient had an uneventful postoperative course.

DISCUSSION

Myxomas are associated with clinical symptoms of intracardiac obstruction, embolism, or constitutional disturbances, and may rarely remain asymptomatic in the presence of very slow tumor growth.^[2] In our case, chest pain was the main symptom on admission. Coronary emboli due to myxoma may cause myocardial infarction.^[2,4,5] In our patient, myocardial perfusion scintigraphy showed perfusion defects in the inferior wall; however, on angiography, coronary arteries were found to be normal. Ventriculography

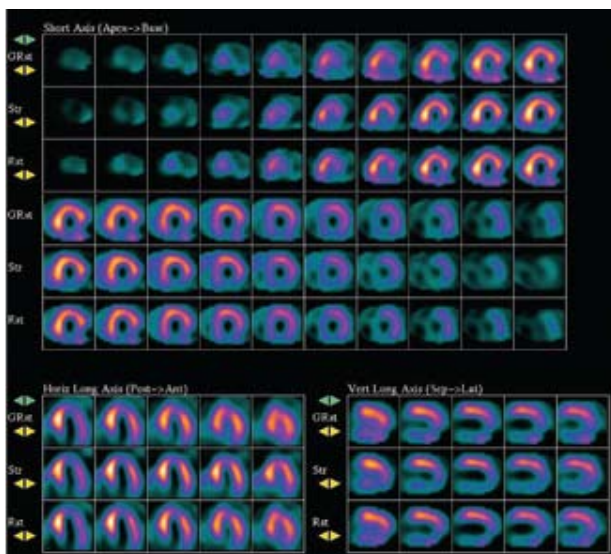


Figure 2. Myocardial perfusion single-photon emission computed tomography demonstrates inferior wall infarction.

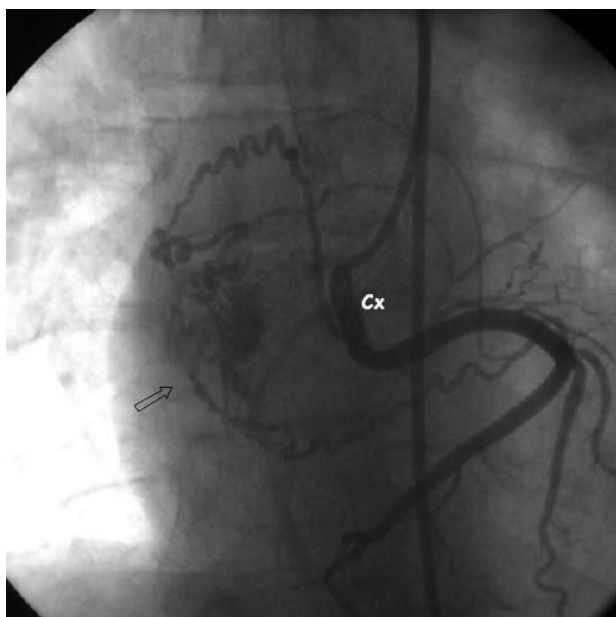


Figure 3. Angiographic view demonstrating marked neovascularity of the left atrial myxoma supplied by the left circumflex artery (Cx) originating from the right coronary cusp.

showed inferior wall akinesia. It was thought that an embolus originating from the myxoma was the cause of chronic inferior myocardial infarction. Although echocardiography showed mild obstruction of the mitral valve during diastole, the patient had no symptom related to this obstruction.

In addition to the presence of myxoma, the patient had a coronary anomaly detected incidentally dur-

ing coronary angiography. The circumflex coronary artery not only supplied the tumor but also originated from the right coronary cusp. In a continuous series of 1,950 angiograms, the incidence of the circumflex coronary artery arising from the right cusp was found as 0.67%.^[7] Our patient is the first reported case of left atrial myxoma, supplied by the circumflex coronary artery arising from the right cusp. The myxoma both caused inferior myocardial infarction and moderate mitral valve obstruction.

REFERENCES

1. Reynen K. Cardiac myxomas. *N Engl J Med* 1995;333:1610-7.
2. Pinede L, Duhaut P, Loire R. Clinical presentation of left atrial cardiac myxoma. A series of 112 consecutive cases. *Medicine* 2001;80:159-72.
3. Panos A, Kalangos A, Sztajzel J. Left atrial myxoma presenting with myocardial infarction. Case report and review of the literature. *Int J Cardiol* 1997;62:73-5.
4. Yavuz T, Peker O, Ocal A, Ibrisim E. Left atrial myxoma associated with acute myocardial infarction. *Int J Cardiovasc Imaging* 2005;21:235-8.
5. Lattanzi F, Paci AM, Topi A, Squarcini G, Topi PL. Left atrial myxoma evidenced by silent acute myocardial infarction. *G Ital Cardiol* 1995;25:1325-9. [Abstract]
6. Reynen K, Kockeritz U, Taha M, Strasser RH. Neovascularization in left atrial myxoma. *Z Kardiol* 2004;93:69-71.
7. Angelini P, Velasco JA, Flamm S. Coronary anomalies: incidence, pathophysiology, and clinical relevance. *Circulation* 2002;105:2449-54.