

Cardiac Myxoma Removal and Coronary Artery Bypass Grafting in a Middle-Aged Woman: A Case Report

Behrooz Motahedi¹, Majid Ghodsi², Bita Zargaran³, Roghaye Alavinejad⁴, Mahdi Kahrom^{1*}

¹ Cardiovascular Surgeon, Faculty of Medicine, Mashhad University Of Medical Sciences, Mashhad, Iran

² Cardiovascular Surgeon, Faculty of Medicine, Department of Cardiovascular Surgery, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

³ General practitioner, Faculty of Medicine, Islamic Azad University, Mashhad Branch, Mashhad, Iran

⁴ Msn in Medical Surgical Nursing Education, Research Assistant of Department of Cardiovascular Surgery, Faculty of Medicine, Mashhad University Of Medical Sciences

ARTICLE INFO

Article type:
Case report

Article history:
Received: 12 April 2019
Revised: 25 May 2019
Accepted: 02 June 2019

Keywords:
Pulmonary Embolism
Surgery
Survival

ABSTRACT

Cardiac myxoma is usually a benign tumor in the left atrium that accounts for more than 50% of primary cardiac tumors. A 55-year-old female referred to our hospital with chest pain, referred pain to the left hand, and severe dyspnea. Transthoracic Doppler Echocardiography was performed and the results showed a large and mobile left atrial mass without any attachment to the interatrial septum. In addition, the three-vessel disease was detected using angiography. Myxoma was resected followed by coronary artery bypass grafting surgery.

► Please cite this paper as:

Motahedi B, Ghodsi M, Zargaran B, Alavinejad R, Kahrom M. Cardiac Myxoma Removal and Coronary Artery Bypass Grafting in a Middle-Aged Woman: A Case Report. J Cardiothorac Med. 2019; 7(2):450-452

Introduction

Cardiac myxoma is usually a benign tumor in the left atrium that accounts for more than 50% of primary cardiac tumors (1). The most common area is in the left atrium and close to the interatrial septum (2,3). It could present as a sporadic case or in the positive familial history (4). The general symptoms include dyspnea,

chest pain, and syncope overlap with the other cardiac involvement; however, the catastrophic events cause an embolism, myocardial infarction, and/or sudden death (5,6). Echocardiography is the primary and reliable method to definite diagnosis of this tumor (1). We report a 55-year-old case with cardiac myxoma who had three-vessel disease.

*Corresponding author: Mahdi Kahrom, Department of Cardiovascular Surgery, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran. Tel: +98 915 501 7276; Email: m.kahrom@gmail.com

© 2019 mums.ac.ir All rights reserved.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/3.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Clinical Presentation

A 55-year-old female referred to our hospital with chest pain, referred pain to the left hand, and severe dyspnea in January 2019. She reported suffering from nausea, vomiting, and gradually increased pain. The positive past medical histories of hyperlipidemia, hypertension, diabetes, and addiction were recorded in this study. Complete blood count and troponin were completely normal. An electrocardiogram represented normal sinus rhythm.

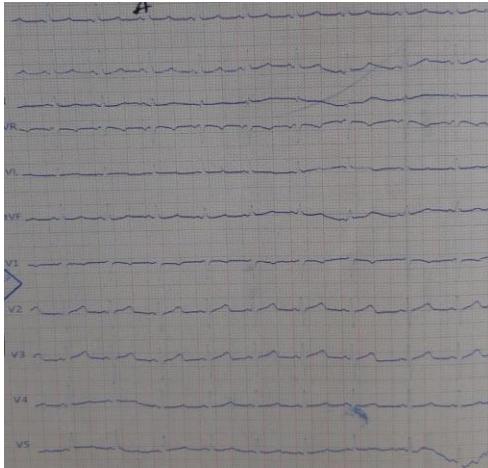


Figure 1. Normal sinus rhythm

The Transthoracic Doppler Echocardiogram result

The Transthoracic Doppler Echocardiogram (TDE) was performed and the results revealed a large and mobile left atrial (LA) mass without any attachment to the interatrial septum. The longest diameter was obtained at 52 mm. It protruded to the left ventricle during diastole. The ejection fraction was estimated to be 60%. According to general symptoms, the embolism was probably due to atrial myxoma. Stable angina and myocardial infarction were also considered in this case under study (Figure 1).

Angiography

Angiographic findings revealed a three-vessel disease. Moreover, 70-90%, 90-99%, and 70-90% stenosis were observed in the left anterior descending (LAD) artery, obtuse marginal branches, and right coronary artery, respectively. Due to poor blood circulation in these three vessels, it was recommended to perform coronary artery bypass grafting and LA myxoma resection.

Coronary artery surgery

The median sternotomy was done after general anesthesia. Left internal mammary artery (LIMA) and saphenous vein harvested after the use of

diluted papaverine. Cardiopulmonary bypass was established using ascending aorta annulation, superior vena cava (SVC), and inferior vena cava. Accordingly, the activated clotting time was tested before heparin administration. The suitable dose for heparinization was 3 mg/kg. The system temperature was set at 33°C. Cardiac arrest induced and grafting was done after reassurance of the cold blood infusion. The LIMA with a size of 1.5 mm grafted to LAD. Following that, the SVC with a size of 2mm grafted to the posterior descending artery. Myxoma mass (10×5 mm) was removed from the pedicle of mass. The myxoma was located in LA adhering to the interatrial septum (Figure 2).

Microscopic findings revealed stellate cells, fine capillaries, hemorrhage spot, and fibrin deposition in a myxoid stroma.



Figure 2. Atrial myxoma (Myxoma with a size of 10×5 mm was removed from the pedicle)

Discussion

Cardiac myxoma appears most commonly between the third and sixth decades of life (1, 7,8). The prevalence rate of myxoma was reported 18 cases in Modarres University in Tehran, Iran, within the past 10 years and it had been 35 cases over the past five years (8,9). Young patients, particularly with the positive family history of cardiac disease, should be assessed with the routine cardiac screening (7). The small number of these patients sometimes cause to ignore cardiac tumors which is a clinical challenge (4). Cardiac surgery leads to a decreased rate of sudden death due to tumor obstruction and fatal thromboembolism events (10).

Other effective factors, such as cardiac tumors should be considered in coronary artery involvement (7). Myxoma is almost silent, compared to malignant and metastatic tumors which represent the determined symptoms (10).

Although myxoma is a benign tumor, it can present repeatedly (6). The differentiation between atrial myxoma and atrial emboli is significant because of different treatment strategies (10). The TDE is able to confirm the physician's diagnosis (2). The patient's symptoms can gradually increase and/or cause sudden cerebrovascular events or retinal ischemia (10-12). Accordingly, diagnosis and rapid treatment are necessary (13). The clinical presentations of our patient were gradually increased in this study. Most of the patients imitating the myocardial infarction and streptokinase cannot make a definitive treatment (10). Tumor resection extremely decreases the rate of mortality and irreparable events (14). We presented a patient who underwent concomitant coronary bypass grafting and removal of left atrial myxoma mass (2).

Conclusion

The best strategy to manage these patients is myxoma resection and the assessment of coronary arteries involvement in elder patients. Echocardiography and angiography should be considered to rule out coronary artery disease in suspected cases.

Conflicts of Interest

The authors declare that there is no conflict of interest

References

1. Flint N, Siegel RJ, Bannykh S, Luthringer DJ. Bi-atrial cardiac myxoma with glandular differentiation: a case report with detailed radiologic-pathologic correlation. *Eur Heart J Case Rep.* 2018; 2:ty045.
2. Patel K, Rahul K, Tarsaria M, Malhotra A. Left atrial myxoma following coronary artery bypass grafting with patient coronary arterial grafts: a rarity. *Braz J Cardiovasc Surg.* 2017; 32:228-30.
3. Zolfagharzadeh M, Pirouzi M, Asoodeh A, Saberi MR, Chamani J. A comparison investigation of DNP-binding effects to HSA and HTF by spectroscopic and molecular modeling techniques. *J Biomol Struct Dyn.* 2014; 32(12):1936-52.
4. Shi X, Liu R. Sudden cardiac death in physicians: an alarming problem in China. *Anatol J Cardiol.* 2018; 19:158.
5. Nehaj F, Sokol J, Mokaň M, Jankovicová V, Kovar F, Kubasková M, et al. Outcomes of patients with newly diagnosed cardiac myxoma: a retrospective multicentric study. *Biomed Res Int.* 2018; 2018:8320793.
6. Chamani J, Heshmati M. Mechanism for stabilization of the molten globule state of papain by sodium n-alkyl sulfates: spectroscopic and calorimetric approaches. *J Colloid Interface Sci.* 2008; 322(1):119-27.
7. Gennari M, Rubino M, Andreini D, Polvani G, Agrifoglio M. Huge left atrial myxoma and concomitant silent coronary artery disease in a young man. *Open J Cardiovasc Surg.* 2017; 8:5-7.
8. Moosavi-Movahedi AA, Golchin AR, Nazari KK, Chamani J, Saboury AA, Bathaie SZ, et al. Microcalorimetry, energetics and binding studies of DNA-dimethyltin dichloride complexes. *Thermochim Acta.* 2004; 414(2):233-41.
9. Echeverria P, Selwyn J, Daily B, Saa J. Rapidly growing left atrial myxoma with pfo and left-to-right shunt presenting with dyspnea. *Crit Care Med.* 2019; 47:78.
10. Majidi Tehrani SM, Ghaderi H, Foroughi M, Hekmat M, Monfared MB, Tatari H, et al. Ten-year evaluation of cardiac myxoma in Shahid Modarres Hospital. *Tehran Univ Med J.* 2014; 72:87-95.
11. Stefanou MI, Rath D, Stadler V, Richter H, Hennersdorf F, Lausberg HF, et al. Cardiac myxoma and cerebrovascular events: a retrospective cohort study. *Front Neurol.* 2018; 9:823.
12. Sanei H, Asoodeh A, Hamedakbari-Tusi S, Chamani J. Multi-spectroscopic investigations of aspirin and colchicine interactions with human hemoglobin: binary and ternary systems. *J Solution Chem.* 2011;40(11):1905-31.
13. Ali N, Zeb S. Acute myocardial infarction in a 36-year-old man from embolized left atrial myxoma. *Rawal Med J.* 2016; 41:125-7.
14. Shah IK, Dearani J, Daly RC, Suri RM, Park SJ, Joyce LD, et al. Cardiac myxomas: a 50-year experience with resection and analysis of risk factors for recurrence. *Ann Thorac Surg.* 2015; 100:495-500.