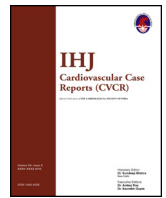




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journal homepage: www.elsevier.com/locate/ihjccr



Case Report

Cardiac tumor with simultaneous embolization to the heart and brain: Presenting with acute myocardial infarction and cerebral infarction

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ARTICLE INFO

Article history:

Received 21 November 2016
Received in revised form
19 December 2016
Accepted 26 December 2016
Available online xxx

Keywords:

Cardiac tumor
Myocardial infarction
Cerebral infarction
Myxoma

ABSTRACT

This report describes a 60 years old hypertensive and diabetic woman presenting with acute anterior myocardial infarction accompanied by electrocardiographic changes and raised cardiac enzymes. Her coronary angiography revealed a distal left anterior descending artery block; but at this stage the patient rapidly developed unconsciousness with loss of movement in all 4 limbs. Magnetic resonance imaging of the brain revealed massive multiple bilateral infarcts and transthoracic echocardiography subsequently done demonstrated a large mobile mass in the left atrium that prolapsed into the mitral annulus. This mass was heterogeneous with a satellite nodule. The patient had to be shifted to the intensive care unit where she initially required endotracheal intubation and temporary mechanical ventilation. The patient continues to be in coma and is being managed conservatively in the intensive care unit as the attendant refused to give consent for surgical removal of the left atrial tumor. There are less than a handful case report narrating simultaneous acute anterior myocardial and bilateral large cerebral infarctions subsequent to embolization from a probable left atrial myxoma.

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1. Introduction

The most common benign primary tumor of the heart is a myxoma attached to the interatrial septum in the left atrium. Myxomas can uncommonly be situated in other chambers of the heart and are not uncommonly known to produce a variety of embolic complications apart from constitutional and obstructive symptoms.^{1–3} This report however describes the rare occurrence of simultaneous emboli from a probable left atrial myxoma both to the heart and the brain with presentation of acute anterior myocardial infarction and multiple massive bilateral cerebral infarctions.

2. Case presentation

A 60-year old woman entered the emergency with complaints of chest discomfort accompanied by breathlessness for the previous 3 h. The patient had previous history of diabetes and hypertension but no episodes of joint pains, fever, or weakness of any part of her body. She did admit to tiredness and easy fatigability for 3–4 months before admission. Her physical examination revealed sinus

tachycardia with a pulse rate of 120/min, respiratory rate of 28/min, blood pressure of 104/60 mm Hg, and temperature of 37.6 °C. She had, on auscultation, normal heart sounds with a diastolic murmur. Her 12 lead Electrocardiogram revealed sinus rhythm with inverted T waves in leads L1, AVL, and V5–V6 (Fig. 1). Transthoracic 2 D echocardiogram (2 chamber view) showed apico-septal hypokinesia, left ventricle ejection fraction of 54%, and a large globular mass 5 cm × 3.7 cm in the left atrium (LA). The tumor (white arrow) was attached to the interatrial septum (fossa ovalis area) prolapsing through the mitral annulus into the left ventricular cavity in each cycle of diastole. The mass was quite mobile with a satellite breakaway piece observed at 6 o'clock position (red arrow); there was mild pericardial effusion (Fig. 2; blue arrow). The patient was shifted to the cath-lab where her coronary angiography demonstrated near total occlusion of her mid distal left anterior descending artery (Fig. 3; white arrow). The patient suddenly lost consciousness before any coronary intervention could be attempted. She was transferred to the intensive care unit in a hemodynamically stable condition but was no longer responding to any verbal command and had no voluntary motor movement. There was no response to painful stimuli and she had bilateral extensor responses. Urgent magnetic resonance imaging (MRI) of the brain revealed multiple massive bilateral infarctions in both cerebral hemispheres (Fig. 4; white arrows). The patient progressed to unresponsive coma requiring temporary mechanical ventilation;

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<http://dx.doi.org/10.1016/j.ihjccr.2016.12.004>

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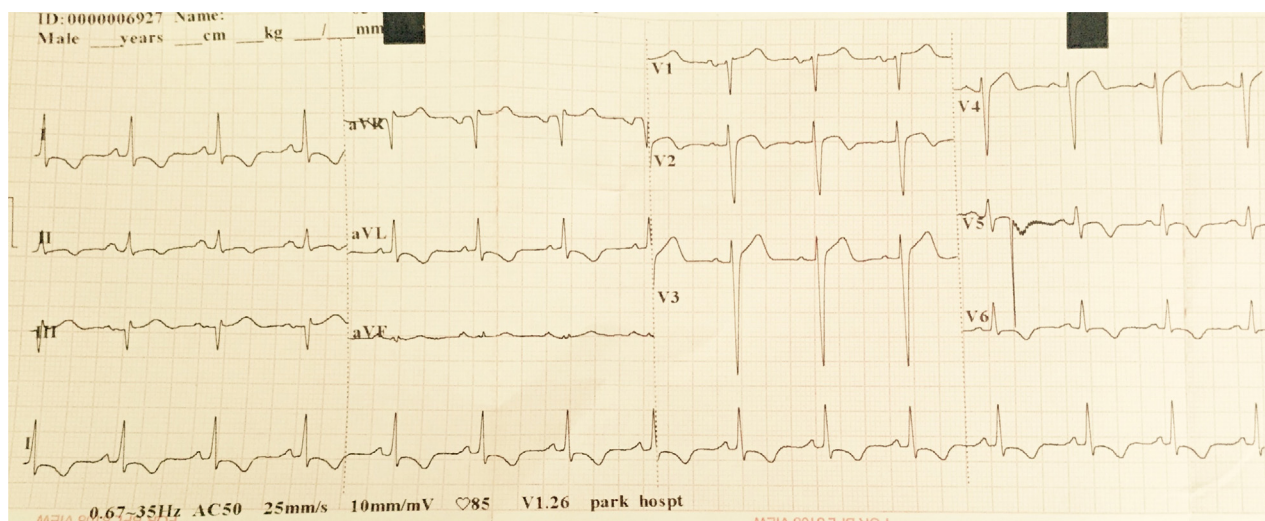


Fig. 1. Electrocardiogram demonstrating sinus rhythm, T wave inversion in leads L1, L2, L3, V5 and V6.

she subsequently regained spontaneous respiration underwent tracheostomy. The cardiac enzymes were raised significantly (creatin kinase 940 U per liter, a creatine kinase MB isoenzyme level of 124 U and troponin T level of 3 ng per milliliter); while her full blood count and biochemistry were within normal limits. She did not have anti-nuclear antibodies. The patient did not have splinter hemorrhages, Osler's nodes or Janeway's lesions. The next of kin (her son) did not consent to surgical removal of the tumor in view of the severe neurological deficit.

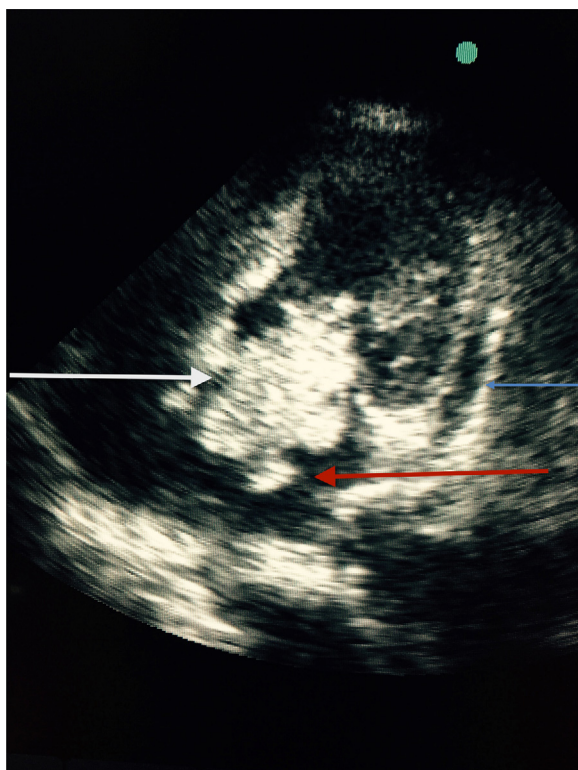


Fig. 2. Transthoracic 2 dimensional echocardiogram in 2 chamber-view showing a large heterogeneous mobile mass attached to the interatrial septum in the left atrium (white arrow), with irregular margins, a satellite nodule at 6 o'clock position (red arrow), and mild pericardial effusion (blue arrow) (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.).

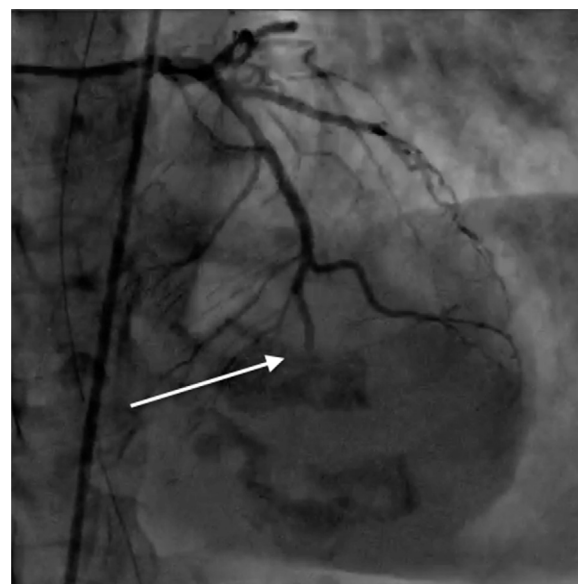


Fig. 3. Selective coronary angiography in the anterior–posterior cranial view showing total block of distal left anterior descending artery by embolus from tumor in the left atrium (white arrow).

3. Discussion

Eighty percent of primary tumors in the heart are benign and myxomas account for more than 50% of these. Metastatic tumors involve the heart, pericardium or both and are 40 times more common than primary tumors; originating from the lung, breast, lymphomas, thyroid, esophagus and the kidney. Secondary tumors are more frequently carcinomas, than sarcomas. Pericardial metastases are the most common (69%), followed by epicardial (34%), myocardial (32%) and endocardial metastases. Secondaries to the heart are multiple. Rhabdomyoma is the most common tumor seen in children (40–60%), while malignant primary tumor are sarcomas.^{1,2} The only tumors not known to metastasize to the heart are tumors of the central nervous system.

Intracardiac myxoma is the most frequent benign tumor with 75% located in the LA, followed by the right atrium (18%), right ventricle (4%) and left ventricle (4%). Myxomas have been reported to originate from the mitral annulus, mitral valve, aortic valve, pulmonic valve and the inferior vena cava; it is however

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