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Case report

Left atrial myxoma in a patient with atrial fibrillation following ischemic stroke – Case report

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ARTICLE INFO

Article history:
Received 29 October 2014
Received in revised form
10 October 2015
Accepted 14 March 2016
Available online 28 March 2016

Keywords:
Myxoma
Benign cardiac tumor
Atrial fibrillation
Ischemic stroke

ABSTRACT

Introduction: Myxoma is the most common tumor of the heart, usually localized in the left atrium. It usually occurs in subjects between the third and sixth decade of life. It causes systemic and cardiovascular symptoms. It may be the cause of thromboembolic events.
Aim: The aim of this work is to present a case of ischemic stroke as a first clinical manifestation of myxoma and draw attention to diagnostic problems of left atrial lesions.
Case report: A 63-year-old female following ischemic stroke with mixed aphasia and atrial fibrillation was admitted for diagnosis of pathological left atrial lesion.
Results and discussion: Histopathological examination confirmed left atrial myxoma. Differential diagnosis of pathological lesions in heart cavities is often very difficult. Myxoma, which is a benign cardiac tumor, is frequently confused with thrombus which prevents the implementation of proper treatment and causes various cardiovascular complications, thromboembolic events and systemic symptoms.
Conclusions: In case of ischemic stroke and atrial fibrillation in subjects over the age of 60 years myxoma should be considered as a potential cause of these clinical conditions.
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1. Introduction

Myxoma is a benign cardiac tumor, most frequently localized in the left atrium.[1–8] The clinical manifestation is non-specific so it is frequently diagnosed after severe complications occur.[7] Cardiac myxoma may be a source of emboli to each component of cardiovascular system.[2–4,6–8] Atypical systemic symptoms and small thromboembolic foci may become unnoticed. It concerns particularly subjects above 60 years of age, in whom this type of tumor is rare.[7]

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http://dx.doi.org/10.1016/j.poamed.2016.03.003
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2. Aim

The aim of this work was to present a case of ischemic stroke as a first clinical presentation of myxoma in a patient with previously untreated atrial fibrillation. The paper also discusses the issue of diagnostic problems of left atrial lesions.

3. Case report

The article was prepared based on patient history and physical examination, laboratory and imaging results of a patient admitted to the Department of Cardiology and then to the Department of Cardiac Surgery of the Provincial Specialist Hospital. Patient, a 63-year-old female 2 weeks after ischemic stroke, was admitted to the Department of Cardiology of the Provincial Specialist Hospital for diagnosis of heterogeneous echogenic mass in the left atrium. The patient had a history of mixed aphasia, atrial fibrillation of unknown duration with no anticoagulant treatment prior to stroke onset.

Physical examination on admission revealed good clinical condition, verbal contact incoherent, irregular heart rate of approximately 80 bpm, moderately loud heart tones, clear, normally accentuated, without murmurs. Thyroid palpable, slightly enlarged left lobe. No significant abnormalities were observed in any other organs or systems.

Laboratory results on admission showed following abnormalities: slightly increased glucose level – 103 mg/dL (normal range: 60–99 mg/dL), creatinine – 1.0 mg/dL (normal range: 0.5–0.9 mg/dL), increased concentration of alanine aminotransferase – 161 U/L (normal range: 10–35 U/L), aspartate aminotransferase – 110 U/L (normal range: 10–35 U/L), decreased estimated glomerular filtration rate – 56 mL/min (normal range >60 mL/min), as well as decreased concentration of thyroid stimulating hormone – 0.24 IU/mL (normal range: 0.27–4.2 IU/mL).

On the same day transthoracic echocardiography was performed, which revealed a 3.5 × 2.5 cm left atrial structure with heterogeneous echogenicity, probably located outside the heart. Cardiac chambers were not dilated. Wall thickness and myocardial contractility of the left ventricle were normal. Heart valves with no significant changes. Pressure gradients through valve planes were normal. No fluid in pericardial cavity.

Due to excess body fat no sufficient quality images were obtained for a reliable assessment of left atrial mass, thus the patient was referred for a CT scan of the chest.

CT angiography, conducted on a Somatom 64 (Siemens, Germany), before and after intravenous administration of contrast agent revealed a tumor mass in the left atrium. A soft-tissue mass, size 3.4 × 3.0 cm, with smooth contours and internal linear calcifications visible on non-contrast images (Fig. 1). It showed mean contrast enhancement (Fig. 2), piecewise merged with the interatrial septum over a width of about 12 mm (Fig. 3). It was located within the mouth of the right upper pulmonary vein, slightly narrowing it. Images most probably corresponded to left atrial myxoma.

On the same day coronary angiography using the left transradial artery access was performed and no significant coronary artery stenosis was revealed. The patient was transferred to the Department of Cardiac Surgery for an urgent surgical intervention.

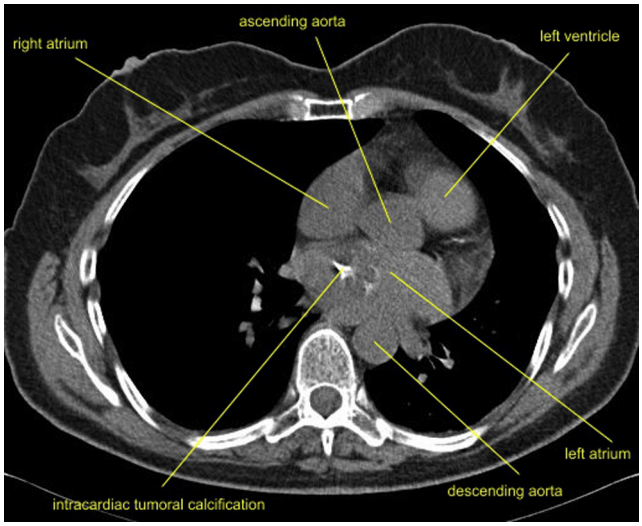

Fig. 1 – CT image before intravenous contrast administration with visible calcifications in a tumor mass.

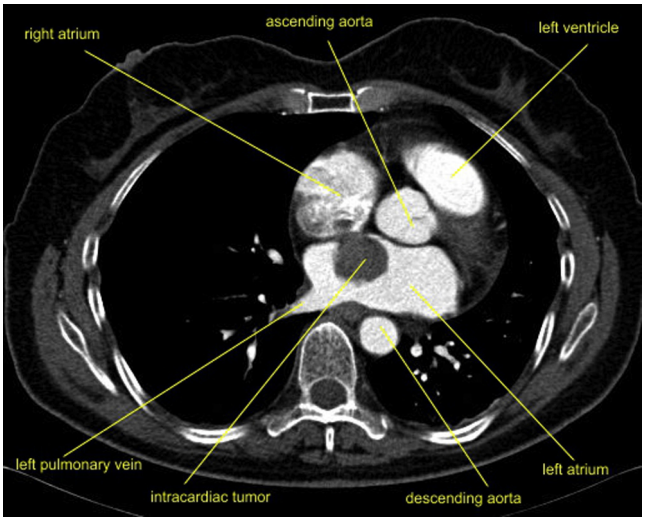

Fig. 2 – CT image after intravenous contrast administration, transverse plane, tumor mass in the left atrium.

On the following day, left atrial tumor, macroscopically resembling myxoma, was removed with the use of cardiopulmonary bypass. During postoperative period cardiovascular system was supported with continuous doses of norepinephrine and 2 units of platelet concentrate were transfused. No complications were observed, drains were removed on the second postoperative day. Due to persistent atrial fibrillation despite pharmacological treatment, anticoagulant therapy was started (acenocumarole) and therapeutic INR levels were achieved.

Histopathological examination revealed tumor measuring 3.5 × 3.0 × 2.2 cm, creamy-brown and shiny in cross-section, with calcifications. Microscopically cardiac myxoma with local

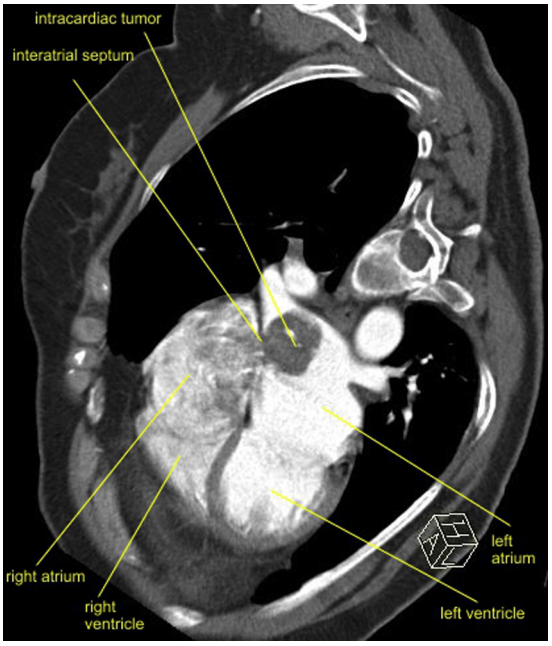

Fig. 3 – CT image after intravenous contrast administration, Multiplanar Reconstruction (MPR) through the tumor mass, visible attachment to interatrial septum.

microcalcifications was confirmed. Periodic acid-Schiff stain was positive, CD31 positive, MIB-1 index below 1%.

The patient was discharged home on postoperative day 8 in good general condition with recommendation of permanent anticoagulant treatment.

4. Results and discussion

Primary cardiac tumors are a group of rare diseases diagnosed in 0.0017%–0.1900% autopsies.[1,9] Myxoma is the most common benign cardiac tumor and constitutes 50% of all its forms.[2,5,6]

It derives from mesenchymal subendocardial cells and typically localizes in the left atrium (75% of cases).[1–6,8] It may occur in all age groups but most frequently it affects subjects between 30 and 60 years of age.[1–3,5,6,8] In 5th decade of life it is usually a sporadic form (90%) and in 2nd decade it is autosomal dominant hereditary form (10%), clinically presenting as Carney's syndrome.[1–3] Myxoma is three times more common in women.[2]

The mass located in the left atrium may be the cause of life-threatening complications. Patients frequently present various cardiovascular symptoms (dyspnoe, atrial fibrillation, palpitations, syncope), systemic symptoms (fever, anemia, weight loss, arthralgia) and thromboembolic complications (ischemic stroke, myocardial infarction, mesenteric infarction, central retinal artery occlusion).[1–5,9,10] Asymptomatic course or atypical symptoms is also possible.[2,6,7]

Ischemic stroke is the most common clinical manifestation of myxoma resulting from embolism.[4,5,8] It constitutes 1 in 250 cases of ischemic strokes in young subjects and 1 in 750 in the elderly. It is the cause of 0.5% of cardiac thrombus causing stroke and 1.0% of ischemic stokes.[1,5] Embolic material may be a fragment of the tumor itself or thrombus from the tumor surface.[2]

In view of the above facts early diagnosis and treatment of myxoma is no doubt of particular importance. Neurological deficit in a young patient should be alarming. In such case brain imaging and echocardiography despite the absence of auscultatory and electrocardiographic changes is necessary.[1] Due to the fact that benign cardiac tumors rarely occur in patients above 60 years of age they are not often taken into consideration as the cause of symptoms of the presence of pathological mass in the heart in this age group. The most common cause is thrombus caused by atrial fibrillation. Epidemiological studies showed that this arrhythmia is the cause of approximately 20% of strokes and increases risk of its occurrence fivefold.[11] The presented case confirms diagnostic difficulties of cardiac pathologies which frequently delays implementation of the appropriate treatment.

Availability of transthoracic echocardiography plays a key role in the diagnosis of pathological cardiac mass.[2,3,12] In case of the discussed problems of cardiac imaging transesophageal echocardiography, computed tomography (CT) or magnetic resonance imaging (MRI) is recommended. CT and MRI enable precise determination of size and location of the mass. It facilitates planning of cardiac surgery, shortening duration of the procedure and reducing risk of complications. Currently, they become routine methods of in-depth diagnosis of tumor masses, particularly MRI.[1,3,12,13]

5. Conclusions

The presented case confirms diagnostic difficulties of early detection of myxoma, particularly in patient above 60 years of age. Its first clinical manifestation in this patient was ischemic stroke. In the absence of specific symptoms myxoma is frequently diagnosed only after the occurrence of severe complications. In case of atrial fibrillation and ischemic stroke transthoracic echocardiography may explain its etiology and allow early implementation of treatment. However, more precise imaging methods are CT and MRI.

Conflict of interest

None declared.

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