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Case Report

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Embolic stroke due to atrial myxoma: about a case

Abstract

Cardiac myxoma is recognized as the most common primary cardiac tumor, typically benign, slow-growing, with a predilection for the left atrium, presenting as a mobile mass attached to the inner surface of the heart by a peduncle. Although its presentation through cerebrovascular events is quite common, it remains an exceedingly rare cause, representing approximately 0.5% of all cerebrovascular events. In this clinical case, we describe a 54-year-old woman with no significant medical history who presented with embolization in both cerebral hemispheres without specific neurological deficits. A left atrial mass was identified on echocardiography. Given the risk of further systemic embolization, the patient underwent surgical excision of the left atrial mass, which histopathology confirmed to be a cardiac myxoma. Due to the high recurrence of systemic embolic events, particularly in the form of cerebral ischemic embolisms, the diagnosis of cardiac myxoma should prompt immediate surgical intervention, as the tumor's friability is more closely related to the embolic risk than its size or the presence of concomitant cardiovascular risk factors. Surgical resection is generally curative and the recurrence of new cerebrovascular events is rare, with an excellent prognosis, although recurrence of tumor is possible in cases of inadequate resection. Treatment with antiplatelet agents or anticoagulants is not an alternative to surgery, as cerebrovascular events can occur even under such treatments.

Keywords: left atrial mass, cardiac myxoma, embolization, cerebrovascular event

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Introduction

The article presents a case study of a 54-year-old female patient with no cardiovascular risk factors. She experienced a sudden, nonspecific neurological episode characterized by a rapid recovery from syncope, followed by blurred vision, frontal headaches, dizziness, and bilateral lower limb weakness. Physical examination and laboratory tests did not reveal any abnormalities. Neuroimaging studies, including computed tomography (CT) of the brain, showed cortico-subcortical hypodensities in the frontal and parieto-occipital regions of both cerebral hemispheres. Additionally, cranioencephalic magnetic resonance imaging (MRI) documented multiple acute focal lesions affecting both gray and white matter in multiple bilateral vascular territories, with a predominant involvement on the right side. The patient underwent a transthoracic echocardiogram, which revealed the presence of a mobile left atrial (LA) mass, located adjacent to the interatrial septum, protruding into the left ventricle. Subsequently, successful surgical excision of the mass was performed without recurrence of neurological deficits and it was confirmed to be a cardiac myxoma (CM). The text underscores the importance of echocardiographic assessment in the evaluation of ischemic cerebrovascular events (CVE), even in the absence of abnormal electrocardiographic findings and abnormal heart sounds. This is due to the potential presence of cardiac masses that can generate emboli. The detection of this cardiac mass was crucial for initiating surgical treatment to reduce the risk of further systemic embolic events. It is emphasized that the friability of the tumor is directly associated with the embolic risk.

Case description

A 54-year-old female patient with a personal history of medicated depressive syndrome, without cardiovascular risk factors, was admitted to the emergency department presenting with symptoms that had been evolving over 48 hours. The initial presentation included a syncopal episode with rapid recovery of consciousness, followed by blurred vision, frontal headaches, dizziness, and bilateral lower limb weakness. On physical examination, no relevant findings were observed, and the electrocardiogram did not reveal any arrhythmias. Laboratory tests showed no abnormalities in inflammatory markers, autoimmunity, or coagulation studies. Cranioencephalic CT documented cortico-subcortical hypodensities in the frontal and right parieto-occipital regions, as well as in the left hemisphere. A cranioencephalic magnetic resonance imaging (MRI) revealed multiple acute focal lesions affecting both gray and white matter in bilateral vascular territories, with more significant involvement on the right side. Given the presence of multiple acute intracranial lesions in both hemispheres, a transthoracic echocardiogram was performed, which revealed the presence of a LA mass adjacent to the interatrial septum, mobile, and protruding into the left ventricle. Due to the risk of further systemic embolization, the patient underwent surgical excision of the LA mass (Figure 1 & 2), histopathology of which confirmed it to be a CM. Postoperative transthoracic echocardiography confirmed the absence of residual tumor mass, and there were no neurological deficits observed at the time of this case publication.

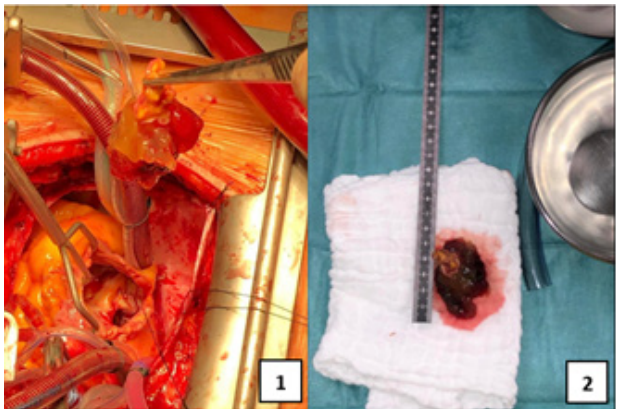

Figure 1 & 2 Myxomatous mass excised from the left atrium.

Discussion

The most common causes of left atrial mass are thrombus, tumor, and vegetation.[1] CM is the most common primary cardiac neoplasm, typically benign with slow endocardial proliferation.[2] It typically presents as a mobile mass attached to the endocardial surface by a peduncle originating from the fossa ovalis.[1] While CVE are common in patients with cardiac myxomas due to their preferential location in the LA in about 75% of cases,[3] they represent a very rare cause, accounting for approximately 0.5% of all CVE.[4] MC is particularly common in the third to sixth decades of life and show a female predominance of 2:1 to 3:1.[2] The occurrence of CM is usually sporadic, but up to 7% of cases are familial, with Carney syndrome being a notable autosomal dominant complex characterized by cutaneous and cardiac myxomas, non-myxomatous extra-cardiac tumors, pigmentation, and endocrinopathies.[1]

CVE related to CM has demonstrated recurrences, typically presenting as embolic ischemic events and rarely as hemorrhagic events.[2] Most myxomas present with one or more of the constituents, embolic or obstructive manifestations.[1] The embolization of tumor particles or thrombotic material mixed with tumor cells occurs in 30% to 40% of CM patients, with feared complications including CVE, mesenteric ischemia, renal infarction, and limb ischemia.[1] Over 50% of these embolic events affect the central nervous system and retinal arteries,[2] and their presence, especially in young patients with neurological symptoms, should prompt cranioencephalic and echocardiographic imaging studies, even in the absence of abnormal electrocardiographic findings or murmurs.[1] The predominant neuroimaging patterns in patients with CM presenting with acute CVE are scattered cerebral infarctions, typically affecting multiple vascular territories on MRI.[(5)] Active disease is often associated with elevated Erythrocyte Sedimentation Rate and C-reactive protein levels, hyperglobulinemia, and anemia.[6]

Once diagnosed, surgical treatment should be promptly pursued to reduce the risk of new systemic embolic events, as the risk of recurrence appears to be independent of concurrent cardiovascular risk factors and the size of the mass, with the tumor's friability being related to the embolic risk.[7] Excisional surgery of LA myxomas is generally curative, with an excellent prognosis, with recurrence occurring in only 1 to 3% of sporadic cases, typically due to inadequate resection.[5] In these cases, cardiac RMI characterization may be useful as it outlines the size, attachment, and mobility of the tumor.[5] Neurological sequelae following tumor resection are rare but can occur independently of CM recurrence.[5] When the time for surgery is long, anticoagulant therapy may be proposed but only has impact on thromboembolic migrations and does not prevent tumor embolism.[8] Treatment with antiplatelet or anticoagulation regimens is not an alternative to surgical excision of CM, as CVE can occur under antiplatelet or anticoagulant therapy.[2]

For patients with sporadic CM, annual echocardiography is suggested for a period of 3 to 4 years when the risk of recurrence is higher. For Carney syndrome, which has a recurrence rate of up to 25%, lifelong annual follow-up with family screening is recommended.[5]

Acknowledgments

None.

Conflicts of interest

The authors declare no conflicts of interest.

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