Case Report

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A rare case of Atrial Myxoma presenting as stroke in a young female patient

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Abstract

Atrial myxoma is one of the most common benign tumor of heart occurring mostly in left atrium. Cerebral embolization is one of the serious complication of left atrial myxoma. Stroke in young patient is a rare condition which may be overlooked in the absence of any history of cardiac problems and diagnosis may be delayed until there is functional impairment as in the case we reported here in 25 years old female. The clinical presentations along with appropriate investigations and treatment are discussed here.

Keywords: Myxoma; ischemic stroke; Embolism

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Introduction

Here we reported a case of 25 years old female who presented to our hospital with complaints of fever, right sided weakness and decrease level of consciousness. After thorough examination and investigations she was found to have Left atrial myxoma causing Left Middle Cerebral Artery Infarction. Among ischemic strokes cardioembolic accounts for 14-30% and major sources of emboli are atrial fibrillation, valvular heart disease, acute myocardial infarction, infective endocarditis and cardiac myxoma.[1] Among cardiac tumors, more than 80% of primary cardiac tumors are benign, and Myxoma is the most common type.[2] Only a small percentage of Myxoma occurs in children whereas it constitutes around 50% in adult population.[3] Majority of them (>80%) are found in left atrium in the age group of 40-60 years with female to male ratio of 3:1.[4] The goal was to evaluate that cardiac myxoma could be the cause of stroke in young patient.

Case report

A 25 year old woman with a history of primary hyperthyroidism and no history of hypertension, diabetes mellitus presented to our Emergency Department with fever for 3 days and right sided weakness and disorientation for 6 hours. Fever was continuous type, with no diurnal variation, not subsided with antipyretic and it was not associated with chills and rigor. Highest documented temperature at home was 100 F. Right sided weakness and disorientation were acute onset as noted by her mother, with continuous gaze towards left side, and unable to speak and follow the command. There was no history of vomiting, shortness of breath, abnormal body movement and family history of any cardiac disease. She was diagnosed as a primary hyperthyroidism three years back and carbimazole was started but she left medication six months back without consulting her doctor.

On examination, she was ill looking, with GCS (Glasgow Coma Scale) of 9/15 (E2V1M6), Blood Pressure was 180/100 mmHg, Pulse Rate was 130 b/min regular, Respiratory Rate was 22 breaths/min, SpO2 was 97% in room air, Temperature was 101.8 F taken in right axilla. Physical examination was limited by patient's confusional state, however, thyroid gland was slightly enlarged and was palpable. Neurological examination revealed bilaterally equal 3mm pupils reactive to light and right sided hemiplegia with up going right sided plantar reflex. Cardiovascular examination revealed normal S1 and S2, early diastolic plop and mid-diastolic murmur were heard. Respiratory and gastrointestinal system examination were unremarkable.

On investigation, thyroid function test showed TSH 0.01 mIU/mL, free T3 6.1 pg/ml and free T4 3.2 ng/dl. Electrocardiography showed sinus tachycardia. Complete blood count, renal function test and liver function test were within normal limits. With the provisional diagnosis of stroke CT scan of head was done. CT scan showed Left Middle Cerebral Artery territory infarction as shown in Fig. 1.

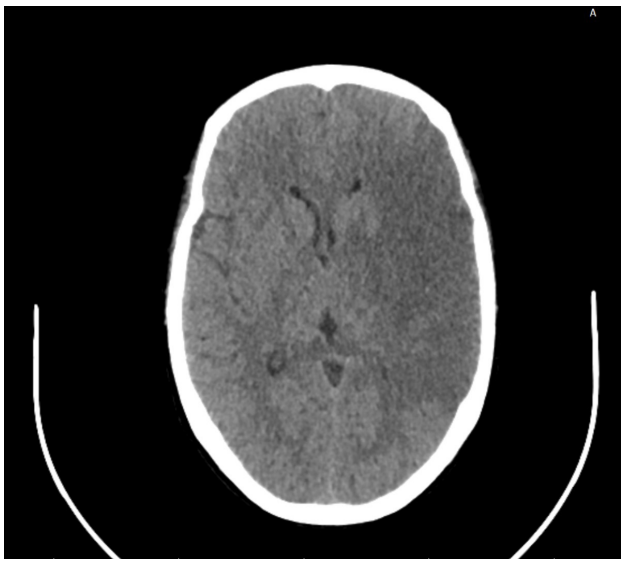
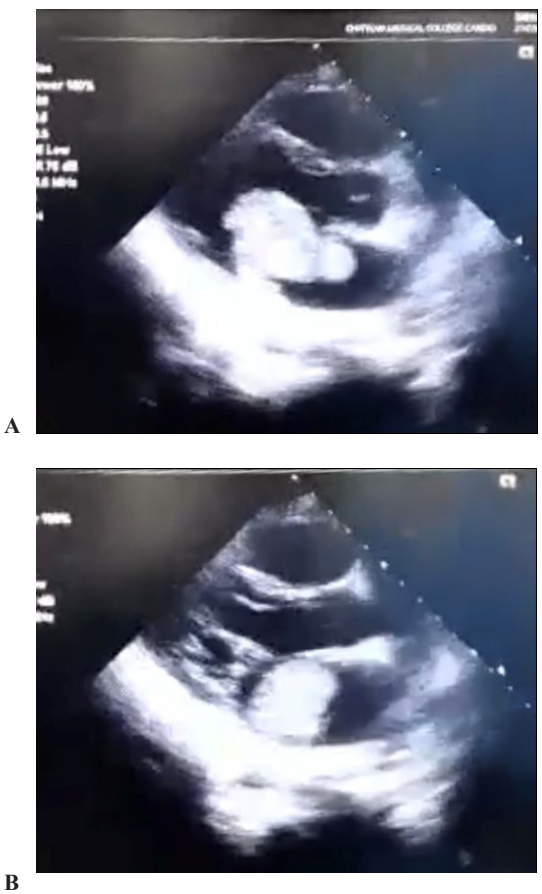


Fig. 1: *NCCT head showing Left MCA territory infarction*

Following assessment of stroke in young patient, transthoracic echocardiography (Fig. 2) was performed which showed pedunculated, mobile mass in left atrium measuring 2.5 cm x 3 cm, impinging on mitral orifice with mean gradient across mitral valve of 12 mmHg. Left ventricular systolic and diastolic function were found to be normal. A diagnosis of left atrial myxoma was made in emergency department.



A

B

Fig. 2: *Parasternal long axis echocardiograph view of the left atrial myxoma prolapsing into the mitral valve during A: Diastole , B: Systole.*

Patient was admitted to Coronary Care Unit for further management. Due to acute ischemic stroke surgery was postponed and continued with medical management. Anticoagulation was not started because of risk of hemorrhagic conversion of infarction. Patient's family was notified of her poor prognosis and decision was made not to resuscitate. On her sixth day of admission, she became bradycardic and went into asystole at 1:00 AM. The cause of death was considered due to malignant middle cerebral artery territory infarction secondary to left atrial myxoma.

Discussion

Typical myxomas are pedunculated and gelatinous with smooth, villous or friable surface and among them 35% are friable or villous which tend to present with emboli.[5] Obstructive, embolic and constitutional manifestations are classical symptom triad of cardiac myxoma.[6] Symptoms such as: arrhythmias, shortness of breath, syncope, embolic events and congestive heart failure are often seen and vary widely depending on the size, location and mobility of tumor.[7] Left sided atrial myxomas are associated with neurological defects as the most serious complications of embolization's[8] whereas constitutional symptoms such as: fever, weight loss, malaise, anorexia, arthralgia may present due to the release of IL-6.[9]

In younger patient cardiac myxoma could be a rare but important cause of stroke and diagnosis can be enhanced by the use of echocardiograms. Young patients were presented with neurological complications of cardiac myxoma and stroke was the most common presentation.[10] Stroke secondary to cardiac myxoma is often acute in onset whereas tumor embolization may show delayed presentation.[8] Strokes can be recurrent[11] which may be hemorrhagic or embolic and presentation can range from progressive multi-infarct dementia[12] to massive embolic stroke causing death in a patient[13] as seen in our patient. Although transthoracic echocardiography is done on regular basis, transesophageal echocardiography has 100% sensitivity for cardiac myxoma.[14] Hence, transesophageal echocardiogram is preferred method for diagnosing cardiac myxoma over transthoracic echocardiogram. Intermittently prolapsing mass as seen in echocardiogram of our patient puts her at high risk of embolism.[15] Although CT is used widely in diagnosing stroke, MRI is more sensitive[16] and transthoracic/transesophageal echocardiography is used for screening of stroke of cardiac source.[17]

Delayed diagnosis and untimely treatment may lead to progression of stroke and development of systemic and peripheral embolic events.[18] As soon as the diagnosis is made, surgery should be done because of further risk of embolism and valve obstruction which can lead to dreadful complications[10,19] but the timing of surgery is controversial in patient with recent neurological insults10 and may need 4 weeks time before surgical resection concerning the risk of hemorrhagic conversion of cerebral infarction.20 Mainstay of treatment is urgent surgical resection through median sternotomy.[21] Young adults, mostly female with stroke of single cerebral vessel mostly middle cerebral artery and multiple territory involvements are the characteristics of patient with cardiac myxoma stoke.[18]

Conclusion

Cerebral embolization causing stroke secondary to cardiac myxoma is a rare condition seen in young patients, especially in young females. In any young patients who presented with stroke, apart from other causes of stroke, cardiac myxoma could be one of the differential diagnosis which can be confirmed by transthoracic echocardiography. Early surgical resection is often recommended in patient with cardiac myxoma but large territory infarction as in our case, surgery should be delayed for at least 4 weeks to prevent from potential consequences.

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