Radiology Case Reports 18 (2023) 3005–3008

Available online at www.sciencedirect.com

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

Case Report

Massive left atrial myxoma leading to recurrent cerebrovascular accidents (CVAs) in a young woman: A case report ☆

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ARTICLE INFO

Article history:
Received 16 May 2023
Revised 22 May 2023
Accepted 26 May 2023

Keywords:
Atrial myxoma
Cerebrovascular accidents (CVAs)
Cardiac
Stroke
Case report

ABSTRACT

Myxomas are tumors that occur due to uncontrolled proliferation of mesenchymal cells. Cardiac myxomas although very rare, are still the most common primary tumor of heart. Cardiac myxomas have a prevalence of 0.03% in the general population. They can have a variety of clinical presentations with obstructive cardiac symptoms, constitutional symptoms and symptoms due to embolism to other body parts chief among them. CNS embolism with stroke is among the rarest clinical presentation of cardiac myxomas. Our article portrays a case of cardiac myxomas that initially resulted in episodes of dyspnea and syncope and eventually led to recurrent episodes of transient ischemic attack and stroke. Case was confirmed by transesophageal echocardiography and managed surgically by medial sternotomy. Myxoma, a benign primary cardiac tumor is itself a rare occurrence, embolization of myxoma leading to multiple strokes is an atypical clinical presentation. Our report would be a valuable addition to the already existing literature.

Introduction

A myxoma is an uncommon tumor that develops because of unchecked growth of mesenchymal multipotent cells. Such tissue growth leads to the formation of a soft, irregular and jelly shaped ball of mass. A myxoma may be intra cardiac as well as extra cardiac [1]. Cardiac myxomas are the most common but very rarely occurring primary cardiac tumors in adults. Almost all myxomas are located in isolation. Only 3%-10% cases are inherited in the syndromic context of the autosomal-dominant Carney complex [2]. Some studies reveal its rarity to be as low as 0.075% echocardiographic incidence of cardiac myxoma [3]. Myxomas are particularly frequent in the 3rd to 6th decade of life. About 75% of cardiac myxomas are present in the left atrium, 23% in the right atrium and only 2% were found to be multichamber myxomas [4]. Furthermore, almost 90% of these myxomas are sporadic and only 5%-7% are familial in nature [4].

☆ Competing Interests: The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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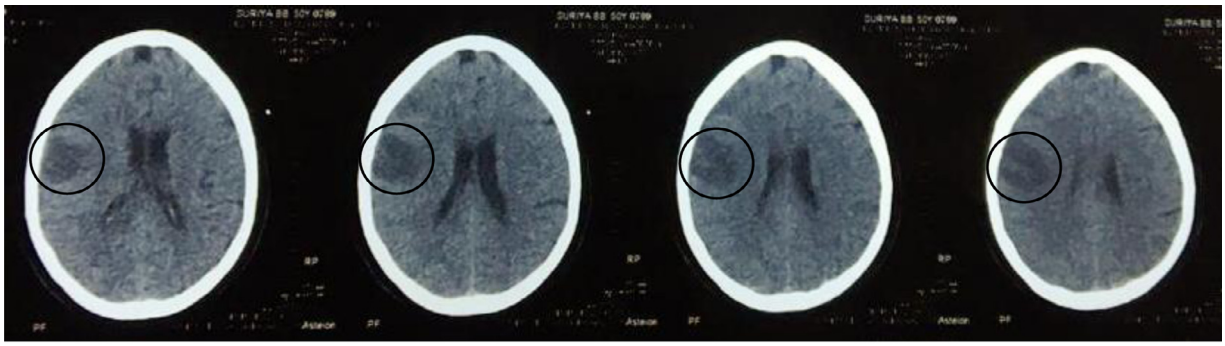
https://doi.org/10.1016/j.radcr.2023.05.059



*Circles showing ischemic stroke

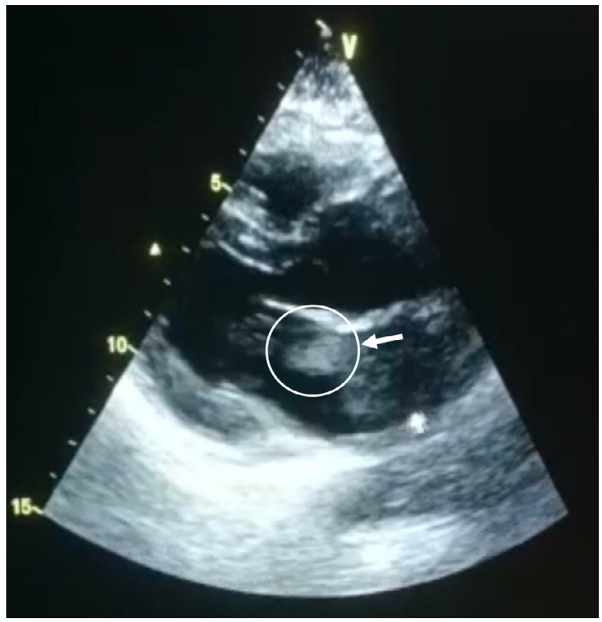
Fig. 1 – Computed Topography of the brain showing infarct in right parietal lobe and lacunar infarct of right head of caudate. *Circles showing ischemic stroke.

Clinical manifestations of atrial myxoma demonstrate a variety of symptoms. The primary triad is obstructive symptoms, constitutional symptoms and embolic phenomenon [5]. Obstructive symptoms include heart failure, dyspnea and syncope. Constitutional symptoms include myalgias, arthralgias, weight loss, fatigue, fever and finger clubbing. Finally, the embolic phenomenon may lead to lodging of a thrombus in any organ but 73% move to the CNS and lead to stroke like symptoms [6]. This is the rarest clinical manifestation out of the 3. Transesophageal echocardiography (TEE) has proven to be the superior imaging modality in the diagnosis and characterization of atrial myxoma [2]. Surgical resection has proven to be the definitive treatment option while minimally invasive techniques are still emerging [2].

Case presentation

A 50-year-old lady with hypertension who has never had a history of heart disease complained of having dyspnea for 3 months. She experienced 4 to 5 syncopal episodes throughout the course of the year. She experienced a transient ischemic attack (TIA) episode in December of 2021. In August 2021, she also experienced left-sided hemiplegia, which subsided in a week. She once more experienced a left sided hemiplegia and eyesight loss in November 2022. Her personality changes and memory loss were also noted by her family. Her strength in her left upper and lower extremities was 3/5 upon evaluation, and her vital signs were normal. The rest of her scans revealed nothing unusual. At 80 mm/h, her ESR was high.

During further evaluation, her ECG revealed sinus bradycardia with sporadic junctional pulsations, but a carotid artery stenosis scan did not reveal anything. Brain CT and MRI were performed and they confirmed an infarct of the right parietal lobe of the brain and lacunar infarct of the right head of the caudate. Cardiac angiography demonstrated no obvious problem. In view of the CT finding, (as shown in Fig. 1) and to determine the cause of stroke, transesophageal echocardiography was performed. The results were diagnostic of atrial myxoma in the left atrium of the heart with dimensions of 4×5 cm as shown in Fig. 2.



*Arrow showing left atrial myxoma

Fig. 2 – Echocardiography showing left atrial myxoma. *Arrow showing left atrial myxoma.

In view of her recurrent brain ischemia suggesting multiple embolization of the atrial myxoma, decision was taken to surgically remove the myxoma. A median sternotomy was performed and the myxoma was successfully resected. Subsequent histopathological report of the removed mass confirmed the diagnosis of atrial myxoma. Patient was followed up and further examined at 3 months' interval. No new neurological symptoms were documented.

Discussion

The uncommon occurrence of atrial myxomas along with the variability in its presenting features results in a delay in its di-

agnosis and treatment resulting in poor prognosis [7]. The presenting complaint for atrial myxoma usually comprises one of the following: syncope episodes [8], cerebral strokes [9–11], shortness of breath along with wheezing [12] and myocardial infarction [13–15]. The exact set of symptoms that might be seen depends upon the size, location, and anatomy of that particular atrial myxoma.

There are no particular physical findings associated with atrial myxoma except for a "tumor plop" which resembles opening snap in mitral stenosis [16]. Our patient, however, had completely normal cardiac auscultation findings as occurred in 36% of atrial myxoma patients [17].

Most patients of atrial myxoma present with constitutional symptoms and episodes of syncope with transient ischemic attack/stroke a relatively rare finding [18]. This stroke manifestation is caused by the embolic showers originating from the atrial myxoma [19]. These emboli most commonly affect the cerebral arteries [20] resulting in neurological manifestations as seen in our patient. However, only 0.5% of all the strokes are caused by emboli from atrial myxomas [21].

Atrial myxomas can be detected with transesophageal or transthoracic echocardiogram. However, due to the overburdened health care system in Pakistan, echocardiogram was not conducted during the work up for this patient's strokes in December 2021 and August 2022. This resulted in a relatively prolonged persistence on this atrial myxoma producing multiple stroke episodes over the years.

The syncope episodes of the patient can be explained by mechanical obstruction of the tumor at the level of mitral valve [22]. This impairs the normal circulation of the body, depriving the brain from its blood supply which manifests itself as a syncope episode.

Medical therapy can be used to prevent the complications of atrial myxoma such as cardiac arrhythmias [23]. However, surgical resection remains the only definitive treatment for atrial myxoma [23,24]. This was done for this patient and resulted in complete removal of the tumor, resolution of the constitutional and syncope symptoms and no recurrence of neurological symptoms on a 3 month follow up.

Conclusion

Our case portrays a 50-year-old patient that had an atypical presentation of cardiac myxomas. Cardiac myxoma caused episodes of dyspnea and syncope and in time led to multiple episodes of stroke due to tumor embolization. Transesophageal echocardiography showed a left atrial mass. Medial sternotomy was done to remove the mass. This was curative and histopathological examination of the removed mass also confirmed the diagnosis of atrial myxoma. Recurrent CNS symptoms due to cardiac myxoma are a rare finding and our report is a valuable addition the existing knowledge bank.

Patient consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

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