Misdiagnosis of large area cerebral infarction caused by left atrial myxoma

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Abstract

The patient, a 32- year-old female, was admitted in our emergency department at 00:00 after a quarrel accompanied. Physical examination: pulse73times/min, blood pressure 130/70mmHg. The mind is clear, unwilling to speak, nasal lip ditch was normal,The heart boundary was found to be normal.the limbs is weak, can hold the examiner's hands, Bilateral sense symmetry existed, both pathological signs were negative and meninges was negative. Electrocardiogram(ECG) and skull CT had no obvious abnormal. The patient appeared increasing consciousness disorder, vomited several times at 15:00, MRI: large cerebral infarction in the left basal ganglia region and left frontal temporal parietal lobe.Because of brain edema, increasing intracranial pressure, cerebral hernia,Then she was administered an operation of Left craniotomy. When the condition was stable , she returned to her hometown for surgery, pathology was confirmed as myxoma.

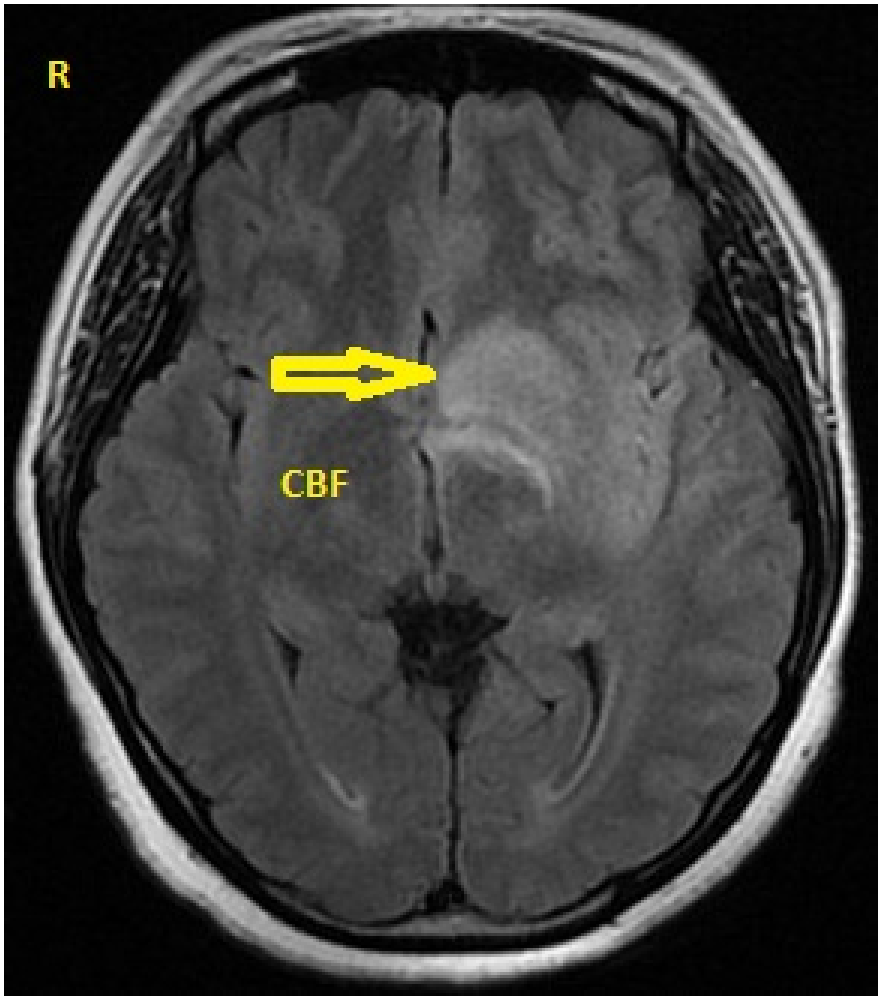

Figure 1.

Large abnormal signals were found in the basal ganglia and left frontotemporal parietal lobe.FLAIR and DWI showed obvious high signal intensity .ALS was obvious hypoperfusion and decreased CBF.

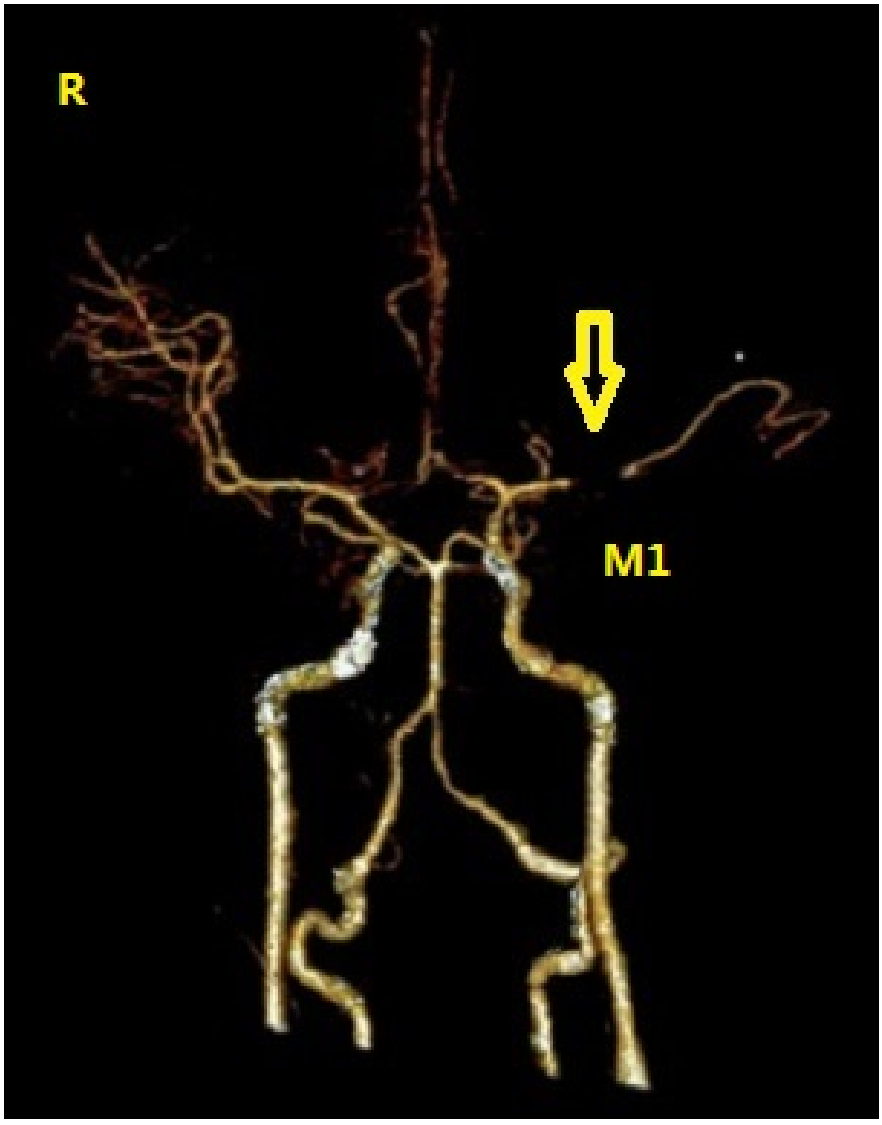

Figure2 .

The M1 segment of the left middle cerebral artery showed localized filling defect,and the distal branch was thin and sparse.

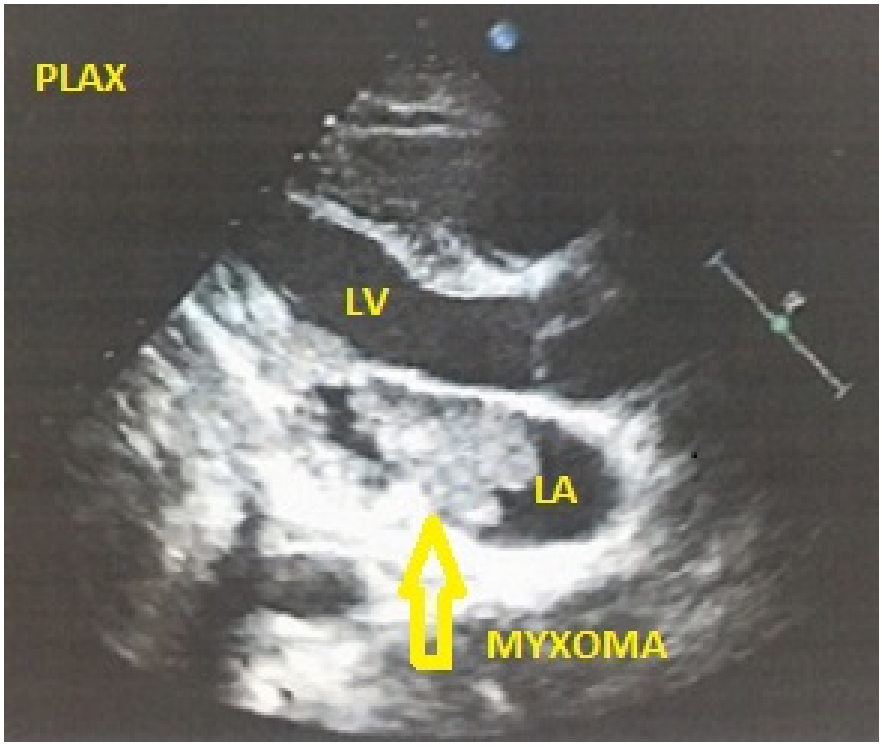

Figure3 .

The abnormal substantive echo of about 45×26mm could be seen in the left atrium.The echo intensity was oval,the echo intensity was medium,eht distribution was homogenneous,the activity was large ,the diastolic tumor was protruding into the industial apex,and the sysolic phase entered the left atrium.

Discussion

Heart mucus tumors are the most common cause of heart tumors, accounting for more than 50% of all heart tumors, other tumors include papillomaelastic fibroids (26%), fibroids (6%), lipamas (4%), and the rest of the tumors are relatively rare, such as cross-sectional fibroids and tri-brain nodule tumors. [1]It is reported that atrial mucus tumors can cause 2% of young people with cerebral infarction, and embolisms often occur earlier than heart discomfort. [2]The mechanism of the formation of mucus tumors is not yet known. From the source of heart mucus tumor tissue, mucosa tumor cells are derived from the original polysaccotic stem cells, which is recognized. No oocytes and endothelial membranes can be differentiated into cardiomyocytes, neuroendocrine cells and endothelial cells. Physiological symptoms of cardiac mucus are not typical, and some do not even have a pathological manifestation of the heart.

The incidence of primary heart mucus tumor ranged from 0.001% to 0.28% in collected autopsy cases. Half of primary heart tumors are reported asheart mucus tumors [3]Heart mucus tumors are common in women, with the peak of the disease in the third to sixth decade.[4]65%-90% of patients with atrial mucus tumors are accompanied by embolism events, abdominal obstruction or physical symptoms, such as myalgia, joint pain, increased inflammation markers, fever and weight loss. [5]The most common part of the heart mucus tumor is the left atrium, the right atrium is very rare. [6-8] In one study, the most common manifestations of stroke (83%) in young patients who showed neurological complications from cardiac mucus tumors. [9]Stroke is associated with mucus tumors, usually caused by tumor or thrombosis, and typically involves several vascular regions. However, the formation of aneurysms and subarachnoid hemorrhage have been reported. [10-11]

Cerebral infarction and systemic embolism are usually caused by left mucus tumors. However, in the case of internal shunts in the heart, they may also be caused by a right mucus tumor, and the pulmonary embolism may originate from the right mucus tumor. [12-13]The discovery of mucus tumors may be accidental, and 2-10% of patients may be asymptomatic. During the hearing, you can hear meaningful two-tip flaps with narrow stretch of murmurs. An additional heart tone found in patients with prolapse mucus tumors is rare. In 112 patients, 64% had a murmur of the bicep disease and 15% had a recurrence of the tumor. [5]The European Stroke Organization (ESO) in 2008 "ischemic stroke treatment guidelines" pointed out that suspected multiple brain or systemic arterial region infarction when the recommended cardiac embolism ultrasound tachycardia map. Its sensitivity and specificity were 90% and 95%, respectively. [14]Sudden cerebral infarction combined mucus tumor, the solution of the thrombosis effect is good. The treatment of mucus tumor is surgical removal, no residual tumor after removal, rare recurrence, good prognosis. Some mucus tumors are part of familial myxomatous syndrome, Carney syndrome and multiple tumors, and have been reported.[16]Causes of cerebral infarction include tumor embolism and thrombosis. [17]In form, tumors with a long fluff surface are prone to embolism. [18] Heart mucus tumors are highly disabled due to embolism risk factors, which emphasizes the need for surgical removal once diagnosed. If possible, early screening and treatment of associated brain aneurysms. [19] Neurological manifestations are one of the most common severe manifestations of heart mucus tumors, with a rate of up to 30%. [20,22]

Ischemic cerebral infarction is the most common neurological complication, occurring mainly in the left middle cerebral arterial region. [21] A recent study reported that embolism stroke was observed in 9% to 22% of atrial myxoma. [22,24]The incidence of embolism was not related to the size of the tumor, but to the mobility and brittleness of the tumor.[22-26]The middle cerebral arterial region is often affected, presumably because of its advantage in blood flow. They are usually multiple and only a few millimeters in diameter and can be found at a fork in the Willis ring. [27] 22% of the stoop history mucus tumor tissue sheds. The texture or shape of residual mucus tumors at the embolism site is related. [30]For solid, round heart mucus tumors, superficial thrombosis is the source of the thrombus, and for soft, irregular heart mucus tumors, the embolism is most likely associated with embolism surfaces and metamorphosis fragments of mucosa tissue.[31]Some epidemiological studies have shown that at least 7% of infections are historically family-based. Kirschner et al. found that mucus tumors may also be an autosomal disease caused by a mutation in a gene on the long arm of chromosomes. About 17 (17q22-24) of the heart mucus tumor was first reported in 1845. Symptoms are complex, and the pathogenesis involves systemic symptoms, stenosis of the biceps and embolism (including peripheral or intracranial). Pulmonary embolism occurs in about 10% of patients with right atrial mucus tumors and manifests itself as chest pain, dyspnea, and other symptoms. The arterial embolism are the first signs of a mucus tumor due to a third of patients who lack heart symptoms. [33]About 83% of arterial embolisms occur in cerebrovascular vessels, and 41% of patients have multiple cerebral embolisms, which are characterized by coma, paraplegia, aphasia and other symptoms. In a study by Lee et al., 74 patients with heart mucus tumors were collected from the Mayo Clinic, 81% of whom were atrial mucus tumors, 11% for right atrial mucus tumors and 7% for ventricular mucus. The history of double-room mucus tumors is the rarest of all heart mucus tumors. [34] The most convenient and reliable method for diagnosing cardiac mucus tumors with an echocardiogram history is about 95% sensitivity. The sensitivity of esophageal ultrasound, especially real-time 3D esophageal echocardiogram, reached 100%. [35]

Conclusion

To sum up, the reasons for the patient's misdiagnosis are considered as follows: (1) Lack of understanding of cardiac myxoma, the majority of patients from the form of cerebrovascular disease, doctors in neurology or emergency department are often limited to undergraduate knowledge, while neglecting a comprehensive and careful examination, resulting in misdiagnosis; (2) Among the many causes of cerebrovascular disease, cardiac embolism is more common in people with previous heart disease , especially those with atrial fibrillation. Cardiac myxoma does not have the above characteristics and is easy to misdiagnosed.(3) Young physicians have insufficient experience and limited diagnostic thinking. The patient is a young woman. After the quarrel, the doctor preconceived and considered it as a common disease: rickets, respiratory alkali poisoning, but did not carry out blood gas analysis; (4)The understanding of the stroke guidelines is not thorough.

Since the stroke is suspected, it is not enough to perform the head CT examination. Because most of the CT tests in the early stage of stroke are negative results, so the current head CT is only an exclusionary examination. The diagnosis still requires a cranial MRI examination; (5)On the fourth day of the patients course, the echocardiography of the heart is completed. Considering the cardiac myxoma, if the ultrasound examination is performed on the day of the visit, it will not be misdiagnosed, which further reflects the importance of bedside ultrasound for the emergency department. (6) In addition, the patient is visited at 00:00, it is in the process of handover. It also shows that the implementation of the care system is not in place.

Lessons learned:Cardiac myxoma is a rare cause of stroke but commonly leads to cerebral infarction or transient ischaemic attack in young adults. Therefore, echocardiography is an indispensable examination for young patients with cerebral infarction and asymptomatic cerebral infarction. In current circumstances, It is important to consider a cardiogenic source in patientswho present with stroke.CT of the brain may be normal and MRI may be required to confirm the diagnosis.Multiple infarcts in different vascular territories are a clue to a cardiogenic source.Performing echocardiography early will help detecting treatable conditions such as atrial myxoma, and prevent further complications. Therefore, it is important for clinicians to perform a detailed cardiac examination when cerebral infarction has been recurrent or has occurred in the cerebral cortex without arterial stenosis.

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