



# A Case Report of a Large Left Atrial Myxoma with Unusual Attachment and Simultaneous Embolization to the Brain

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## Abstract

**Introduction:** Cardiac myxomas are the most common primary tumors of the heart with high embolic potential.

**Case Presentation:** We present a young man with progressing stroke and atrial myxoma in an unusual site from the left upper pulmonary vein.

**Conclusions:** Intravenous (IV) thrombolysis can be safe in patients with intracardiac myxoma and CNS embolization after good case selection. However, further studies are needed for better decision-making.

**Keywords:** Thrombolysis, Stroke, Cardiac Myxoma

## 1. Introduction

Primary cardiac tumors are very rare (1) and have a high embolic potential, including embolization of the cerebral vessels (2). Cardiac myxomas are the most common primary tumors of the heart. These tumors are most commonly found in the left atrium, followed by the right atrium and are usually attached to the interatrial septum. The incidence of this tumor peaks at 40 to 60 years of age with a female preponderance (1).

Cerebral infarction is a rare presentation of myxomas (3). A very small number of cases of administration of IV thrombolysis in this situation have been previously reported (4, 5).

## 2. Case Presentation

A 36-year-old man presented with facial deviation and left-sided hemiparesis and transient decrease in the level of consciousness for one hour before hospitalization.

He had no significant past medical history. He was a cigarette smoker and addicted to opium and marijuana.

On admission, his blood pressure was 100/70, and his heart rate was 80 beats per minute with sinus rhythm. Neurological examination showed normal mental status

and left central facial palsy with slurred speech. Muscle power was 3/5 in the left upper and lower extremities. Plantar reflex was upward on the left side and downward on the right side.

The rest of the physical examination was unremarkable. During hospitalization, serial physical examinations were in favor of progressing stroke.

An emergency brain CT scan without contrast was obtained. No ischemic or hemorrhagic lesion was detected on the CT scan. IV thrombolysis was administered with the impression of a stroke in evolution by the neurologist. Alteplase with a dose of 0.9 mg/kg, 90% in bolus dose, and remnant over 1 hour via IV line was infused.

The patient's symptoms alleviated on the second day. Cardiologic consult was done to evaluate the risk factors for embolic cerebrovascular accident (CVA).

A large heterogeneous mobile mass with the possibility of attachment to the lateral wall of the left atrium was detected on transthoracic echocardiography 2D (Figure 1).

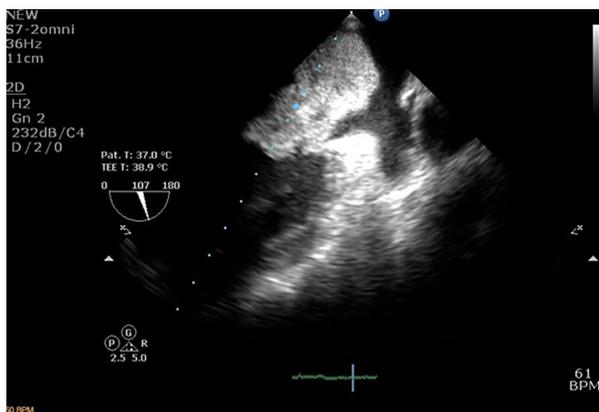
LVEF (left ventricular ejection fraction) and other parameters were normal, so a transesophageal echocardiography (TEE) was recommended by the echocardiographic fellow.

TEE was performed and showed a large convoluted mass with an area of at least 6.5 cm<sup>2</sup>, but no definite stalk



**Figure 1.** 2D transthoracic echocardiography shows a large heterogeneous mass with the possibility of attachment to the lateral wall of the left atrium

attachment was detected (Figure 2).



**Figure 2.** Transesophageal echocardiography shows a heterogeneous convoluted mass with an area of at least 6.5 cm<sup>2</sup> protruding to the left ventricle through the mitral valve

The patient was a candidate for cardiac surgery to prevent the obstruction of the left atrium or other embolic events.

In the same hospital, total mass excision was done by the surgeon, and the mass was sent for histopathological examination. The post-operative diagnosis was a large left atrial myxoma with attachment to the origin of the left upper pulmonary vein.

### 3. Discussion

In all patients with a presentation of embolization, cardiac origin should be considered as a possible cause (3).

Primary cardiac tumors are very rare, and more than 80% of them are benign. Myxoma is the most common benign tumor in adults (1).

More than 80% of the myxomas are found in the left atrium, followed by the right atrium (10% - 20%) and the right and left ventricles with peaks at 40 - 60 years of age and a female to male ratio of 3:1. Myxomas are usually attached to the interatrial septum close to the fossa ovalis (1).

Studies show high embolic potential of intracardiac tumors, 19.8% preoperative, 35% of all LA myxomas, and 10.2% of all commonly have a CNS effect (2, 6).

Some retrospective studies found no relationship between mortality or embolic event and implantation site (2). Other studies showed that atypical location independently associates with an increased risk of embolic complications (5). Unusual site attachment was reported in a few cases. For example, attachment to Acute myeloid leukemia AML, lymphoid-associated antigens LAA, junction of the lateral atrial wall, and mitral annulus have been reported (7, 8).

In our case, the myxoma was attached to the origin of the left upper pulmonary vein.

Intravenous thrombolysis is an acceptable therapy for ischemic stroke within 3.5 - 4 hours of onset of symptoms (7). However, no guideline has discussed this treatment option in patients with embolic stroke caused by cardiac tumors.

There are a few case reports of administering IV thrombolysis and its outcomes in patients with atrial myxoma and stroke (4, 5, 9-14).

Some have reported successful thrombolysis (10-12, 14), while others have reported complications (5, 12).

In our case, the patient was a young male presenting with stroke in evolution. In this case, IV thrombolysis was safe and effective without any complication. Unusual attachment site of the myxoma to the origin of the left upper pulmonary vein was found after echocardiography and cardiac surgery as a potential cause of embolization.

A review of the case reports in Table 1 shows that using IV thrombolysis is safe in patients with intracardiac myxoma and CNS embolization after good case selection. However, further studies are needed for better decision-making.

### Supplementary Material

Supplementary material(s) is available [here](#) [To read supplementary materials, please refer to the journal website and open PDF/HTML].

**Table 1.** Reviewed Case Reports Using IV Thrombolysis in Patients with Stroke due to Cardiac Myxoma

Reference	Age/Sex	Year	OSTT	ICH	Outcome
Chong et al. (12)	74/F	2005	180	Yes	Aphasia
Ibrahim et al. (9)	51/M	2006	84	No	Complete recovery
Ong and Chang (10)	22/F	2010	125	No	No complication
Nagy et al. (11)	26/M	2009	105	No	Minimal hand weakness
Nishimura et al. (13)	72/M	2010	100	No	Lt lower extremity weakness
Abe et al. (14)	70/M	2011	32	No	Complete recovery
Sun et al. (4)	45/M	2011	172	No	Motor aphasia and right hemiparesis
Kulkarni et al. (5)	69/F	2014	90	Yes	Mild distal left hand weakness
This case	36/M	2017	120	No	Complete recovery

Abbreviation: OSTT, onset of symptoms to thrombolytic therapy.

## Footnotes

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