

## Case Report

# Cardiac myxosarcoma: A case report

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## Abstract

**Background:** It is a rare cardiac malignant primary tumor that seems to derive from the same cellular line as myxomas, but the prognosis is very different. It is a rare cardiac malignant primary tumor that seems to derive from the same cellular line as myxomas, but the prognosis is very different. Cardiac myxosarcoma is a rare neoplasm that appears to rise from the same cellular source like myxoma. It is difficult to differentiate a myxoma tumor from a myxosarcoma tumor because of its appearance and pathology examination. Myxosarcoma tumor requires surgery and chemoradiotherapy, but myxoma is treated only by surgery.

**Case Presentation:** We describe a case of a 58-year-old patient with a left atrium myxosarcoma, presenting with congestive heart failure. Transthoracic echocardiogram (TTE) showed a large polypoid and mobile mass in the left atrium, the patient underwent cardiac surgery and the tumor was successfully extracted, and histopathological result revealed typical features of myxoma. 15 days after surgery, he underwent explorative laparotomy because of progressive GI bleeding. Laparotomy revealed extensive metastatic masses in abdomen and the pathology diagnoses was myxosarcoma. Unfortunately, in spite of supportive care, the patient expired on postoperative day one.

**Conclusion:** It is difficult to differentiate a myxoma tumor from a myxosarcoma tumor because of its appearance and pathology examination. Maybe magnetic resonance imaging can help us to achieve more data suggesting malignancy.

**Keywords:** Myxosarcoma, Transthoracic Echocardiogram (TTE)

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**P**Primary cardiac tumors are extremely uncommon, with incidence of 0.001 to 0.3% (1, 2). Most of these tumors (~75%) are benign; and atrial myxoma is the most common cardiac tumor. Myxosarcoma is a rare malignancy and as it has a similar histological appearance to myxoma, differentiation between them is very difficult (3). Myxosarcomas are locally invasive and they have a poor prognosis compared with myxoma. Myxosarcoma mostly originate from the left atrium (4-6), but it can also originate in other sites (7-9). Cardiac sarcomas usually appeared with mysterious symptoms in young and middle aged patients. They usually have a poor prognosis with overall survival ranging from 6 to 12 months (10, 11). Symptoms associated with cardiac sarcomas are various and include: pericardial effusions with tamponade, congestive heart failure, dyspnea, chest pain, syncope, sudden cardiac arrest, fever and weight loss (12-14). After institutional ethics committee approval (IR.SBMU.RETECH.REC.1399.658), we report a patient with a myxosarcoma with extensive metastatic masses.

### Case presentation:

A 58-year-old man was admitted to our hospital who complained of progressive exertional dyspnea for one month, chest pain and lower GI bleeding in November 2018. The patient had past medical history of hypertension and GI bleeding. His vital signs were stable. On physical exam, conjunctiva was pale. Lungs auscultation was clear. Cardiovascular exam showed tumor plop sound at the apex. Abdominal exam was normal. Laboratory findings were as follows: WBC 11.3 K/ul, Hb 7.9g/dl, Hct 23.8 %, platelets 500K/ul. Electrolyte panel findings were as follows: Na 141 mmol/L, K 4.0 mmol/L, Urea 35 mg/dl, Cr 1.27 mg/dl. ECG showed sinus rhythm (fig 1).

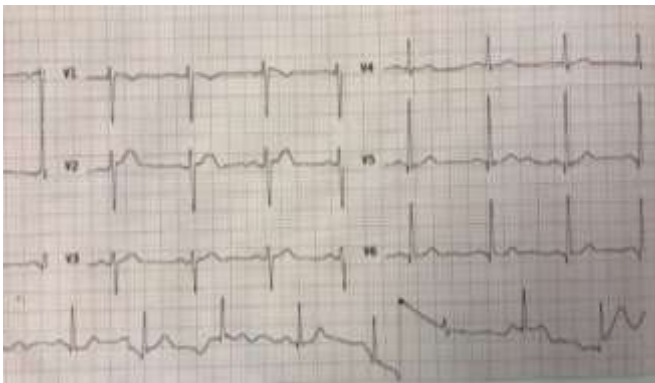


Fig 1: ECG of the patient with Myxosarcoma.



Fig 2: Chest x-ray of the patient with Myxosarcoma

Transthoracic echocardiogram (TTE) revealed EF 60%, mild mitral regurgitation and a large polypoid and mobile tumor (120 mm\*30 mm with strand like particle on it) in the left atrium (fig 3).

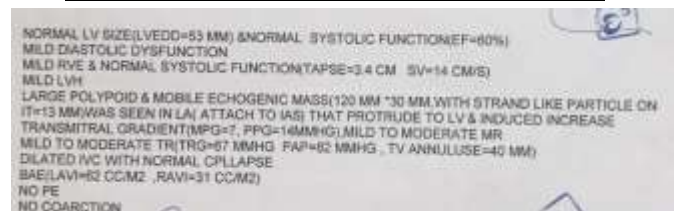


Figure 3. Echocardiography of the patient with Myxosarcoma

The patient underwent median standard sternotomy and exploration. A large, 10 cm × 4 cm mass was located in left atrium, attached via to the pulmonary vein. The mass was extracted, and histopathological result revealed typical features of myxoma (fig 4).



Figure 4. Atrium mass in the patient with Myxosarcoma

After the operation, the patient was sent to intensive care unit. After ten days, the patient was discharged from the hospital. The control post operation echocardiography was normal. 15 days later, the patient came to the emergency room with pleuritic chest pain, illness, fatigue and anemia (Hb=7.7). TEE disclosed moderate MR (mitral regurgitation) and no pericardial effusion. Endoscopy showed small size sliding hiatal hernia and gastritis. However, the treatment for GI signs did not improve the patient's complaints. Abdominal pain and vomiting developed gradually. And GI bleeding occurred again. The patient underwent endoscopy and colonoscopy that was suspicious to obstruction. He underwent exploratory

median laparotomy. Opening the abdomen, we could see extensive metastatic masses in liver and invagination was found because of a 5 cm mass, 10 cm to ligamentum teres. The pathology diagnosis was myxosarcoma involving small intestine from serosal layer up to mucosa, lymphovascular invasion was present and margins were involved (figs. 5, 6).

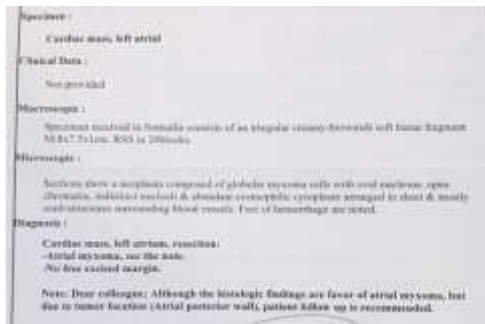


Figure 5. Pathology report of the patient with Myxosarcoma

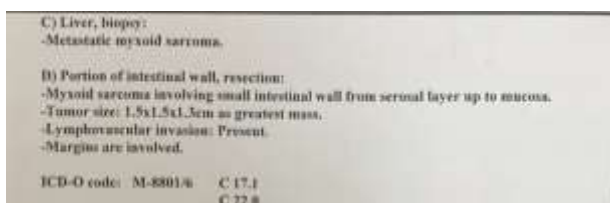
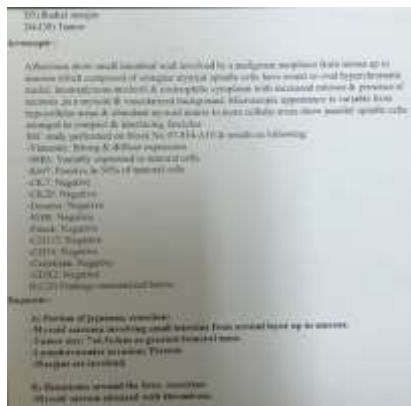
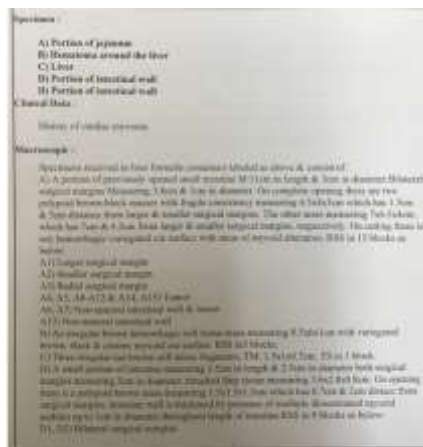
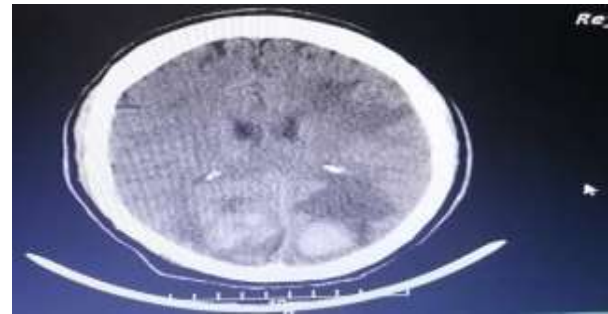


Figure 6. Pathology report of the patient with Myxosarcoma

The mass and metastases specimen were removed and sent to pathology. Loss of consciousness, headache and blurred vision occurred 5 hours after surgery. The patient underwent brain scan computed tomography (CT) (fig. 7).



**Brain CT scan without contrast**  
 Multiple hemorrhagic mass like structures are seen in left frontal lobe, and bilateral occipital lobes, associated with peripheral vasogenic edema. Another lesion with same characteristics is also seen in right high parietal region. Posterior shift of midline structures is seen at the level of 3<sup>rd</sup> ventricle, about 7 mm to the left side. Possibility of hemorrhagic metastasis should be considered alongside primary hemorrhagic stroke and contrast enhanced CT-scan or MRI is recommended for further evaluation. Hypodensity is seen at anatomical place of left caudate head, mostly in favor of previous lacunar infarction. No extra axial lesion is noted. The posterior fossa is grossly normal. \*\*

Figure 7. Brain CT of the patient with Myxosarcoma

Brain CT Scan showed multiple hemorrhagic mass like structure are seen in left frontal lobe and bilateral occipital lobes. Posterior shift of midline structures is seen at the level of third ventricle, about 1mm to the left side Possibility of hemorrhagic metastasis should be considered alongside primary hemorrhagic stroke. Unfortunately, in spite of supportive care the patient expired on postoperative day one.

## Discussion

This case illustrates an uncommon, malignant case of a left atrial myxosarcoma with rapid progression of symptoms which proved fatal. Myxosarcoma is an uncommon type of primary cardiac malignant tumor (1-3). Only half of cases can be treated by resection, but the local recurrence is most common cause of mortality (50%). In spite of combination of radiation, chemotherapy with or without surgery but they do not prevent local recurrences and metastasis. The recurrence makes the prognosis poor with a mean survival time of about 12 months after diagnosis (15-17). It is difficult to differentiate a myxoma tumor from a myxosarcoma tumor because of its appearance and pathology examination. Maybe magnetic resonance imaging can help us achieve more data suggesting malignancy.

## References

1. Burke AP, Virmani R. Tumors of the heart and great vessels. In: Rosai J, Sobin LH, eds. Atlas of Tumor Pathology. Fascicle 16. 3rd ed. Washington, DC: Armed Forces Institute of Pathology 1996; pp: 122-43.
2. Patel J, Sheppard MN. Pathological study of primary cardiac and pericardial tumours in a specialist UK Centre: surgical and autopsy series. *Cardiovasc Pathol* 2010; 19: 343-52.
3. Liu S, Wang Z, Chen AQ, et al. Cardiac myxoma and myxosarcoma: clinical experience and immunohistochemistry. *Asian Cardiovasc Thorac Ann* 2002; 10: 8-11.
4. Mahar LJ, Lie JT, Groover RV, et al. Primary cardiac myxosarcoma in a child. *Mayo Clin Proc* 1979; 54: 261-6.
5. Harris GJ, Tio FO, Grover FL. Primary left atrial myxosarcoma. *Ann Thorac Surg* 1993; 56: 564- 6.
6. Donatelli F, Pocar M, Moneta A, et al. Primary cardiac malignancy presenting as left atrial myxoma. Clinical and surgical considerations. *Minerva Chir* 1996; 51:585-8.
7. Samal AK, Ventura HO, Berman A, et al. Myxosarcoma: a rare primary tumor. *J La State Med Soc* 2002; 154: 308-12.
8. Amano S, Tanabe N, Ogasawara T, et al. A case of primary pulmonary artery myxosarcoma associated with severe pulmonary hypertension. *Nihon Kokyuki Gakkai Zasshi* 2000;38: 622-7
9. Maitra RN, McHaffie DJ, Wakefield JS, Delahunt B. Myxosarcoma of the righth ventricle: an immunohistochemical and ultrastructural study. *Anticancer Res* 2003; 23: 3549-53.
10. Kajihara N, Tanoue Y, Eto M, et al. Surgical experience of cardiac tumors: early and late results. *Surg Today* 2006; 36: 602-7.
11. Buresly KM, Shukkur AM, Uthaman B. Unusual survival time of primary cardiac sarcoma of the right ventricle. *Heart Views* 2011; 12: 35-8.
12. Bossert T, Gummert JF, Battellini R, et al. Surgical experience with 77 primary cardiac tumors. *Interact Cardiovasc Thorac Surg* 2005; 4: 311-5.
13. Shanmugam G. Primary cardiac sarcoma. *Eur J Cardiothorac Surg* 2006; 29: 925-32.
14. Burke AP, Cowan D, Virmani R. Primary sarcomas of the heart. *Cancer* 1992; 69: 387-95.
15. Donsbeck AV, Ranchere D, Coindre JM, et al. Primary cardiac sarcomas: an immunohistochemical and grading study with long-term follow-up of 24 cases. *Histopathology* 1999; 34: 295-304.
16. Burke AP, Cowan D, Virmany R. Primary sarcomas of the heart. *Cancer* 1992; 69: 387-95.
17. Murphy WR, Carter JB, Lucas RV, et al. Recurrent myxosarcoma of left atrium. *Chest* 1975; 67:733-5.