

An infected heart myxoma surgery case

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ABSTRACT

A 60-year-old woman presented with a fever of unknown origin. Echocardiography revealed a large left atrial tumor protruding into the left ventricle during diastole. Laboratory investigation showed an elevated white blood cell count, C-reactive protein concentration, and interleukin-6 concentration. Magnetic resonance imaging showed hyperacute microinfarcts and multiple old lacunar infarcts. Surgery was performed under suspicion of cardiac myxoma. A dark red jelly-like tumor with an irregular surface was removed. Histopathological examination revealed cardiac myxoma, the surface of which was covered with fibrin and bacterial masses. Preoperative blood culture was positive for *Streptococcus vestibularis*. These findings were compatible with a diagnosis of infected cardiac myxoma. We used an antibiotic therapeutic regimen for infective endocarditis, and the patient was discharged home on postoperative day 31. Prompt diagnosis and treatment, including effective and efficient antibiotic therapy and complete tumor resection, increased the chance of a better outcome in patients with infected cardiac myxoma.

KeyWords : Cardiovascular, surgery, cardiac disease, infected cardiac myxoma

INTRODUCTION

The most prevalent primary heart tumor in adults is cardiac myxoma.^{1, 2} Despite being histologically benign, the possibility of embolization makes it clinically malignant. Although family cases of the Carney complex are rarely seen, the majority of cases are sporadic. Cardiac myxoma infection is an uncommon condition.³ Preoperatively, it is challenging

to distinguish between infected and non-infected myxomas because fever is common in both conditions. Here, we detail the effective management of an infected cardiac myxoma in a patient who had an unexplained fever.

Case

When a 60-year-old woman's fever reached more than 38°C, oral antibiotic therapy was initiated. Nevertheless, the fever persisted for a month, and an echocardiogram showed a sizable mass in

air.the atrium on the left. She was brought to our medical facility for surgery.

prior to the COVID-19 pandemic outbreak, in December 2018. The patient presented evident concerns, had no recent dental history, and was not immunocompromised.

She was admitted with a body temperature of 37.4°C, a blood pressure of 113/67 mm Hg, a regular heartbeat of 104 beats per minute, and a blood oxygen saturation of 97% on room temperature. Tumor plop noises were not heard, and cardiac and respiratory sounds were normal. There were no neurological deficiencies observed.

A laboratory analysis revealed a high quantity of C-reactive protein (16.4 mg/dL) and an increased white blood cell count (14,300/ μ L). Despite having a low hemoglobin content of 9.7 g/dL, her renal and liver functions were normal. Her levels of soluble interleukin (IL)-2 receptor (1590 U/mL; reference range, 121–613 U/mL), pro-brain natriuretic peptide (784.8 pg/mL; reference range, 0–125 pg/mL), and IL-6 (73.3 pg/mL; reference range, 0.0–4.0 pg/mL) were all increased. She also exhibited increased levels of CA125 (44.4 U/mL; reference range, 0–35 U/mL) and neuron-specific enolase (24.6 ng/mL; reference range, 0–15 ng/mL). Although Gram staining was delayed after sampling, a blood sample was taken for culture prior to the administration of antibiotics.

DISCUSSION

The most prevalent primary heart tumor in adults is cardiac myxoma. Goodwin's trio refers to the clinical appearance of obstructive, embolic, and constitutional symptoms.^{2,4} The prevalence of asymptomatic cardiac myxoma varies greatly, from 0.0% to 28.4%, and it is increasing as imaging technologies progress and screening opportunities expand.⁵ Myxoma cardiacus infection is uncommon; There have only been perhaps 80 cases recorded thus far.^{3,6} The following criteria must be satisfied for a definitive diagnosis to be made, per Revankar and Clark's reported diagnostic criteria: the myxoma must be verified by pathologic examination;

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microorganisms must be observed on pathologic examination or in a positive blood culture; and inflammation must be observed on pathologic examination. In our situation, all criteria were satisfied, leading to the confirmation of the diagnosis of infected cardiac myxoma.

Our patient had a fever that wouldn't go away. That happens in roughly 10% to 20% of cardiac myxoma patients. According to Acebo et al. (2008), IL-6 was immunohistochemically expressed in 74% of cardiac myxomas. Our patient had a high preoperative levels of IL-6, which rapidly dropped following tumor excision. It is challenging to distinguish between infected and non-infected myxomas preoperatively based just on the presence of fever because this inflammatory cytokine induces fever. Consequently, blood cultures must be started in a feverish myxoma patient before beginning preoperative antibiotic therapy.

An analysis of cardiac myxomas that are infected About 70% of the causal organisms were Gram-positive cocci, including *Streptococcus* and *Staphylococcus*, according to Yuan⁶. In our instance, preoperative blood cultures revealed the presence of *Streptococcus vestibularis*. The intraoperative blood cultures were negative due to the administration of antibiotics. A bacterial culture of the tumor was not done by us. It's unclear how long postoperative antibiotic treatment should last. Postoperative antibiotics were administered for an average of 2.9 weeks³ and 31.2 days⁶, respectively, in two earlier review publications. According to certain cases, infective endocarditis was treated with antimicrobial drugs.^{3,6} As a result, we followed the guidelines for treating infective endocarditis⁹ and administered intravenous antibiotics for four weeks following surgery.

Emboli are caused by thirty to fifty percent of left atrial myxomas.² Due to the delicate fibrin thrombus on the tumor surface, similar to that seen in infective endocarditis, the incidence of embolization has been reported to be two to three times higher in individuals with infected cardiac myxoma than in non-infected cardiac myxoma.¹⁰ In our instance Multiple cerebral infarctions, both recent and old, were also identified by brain magnetic resonance imaging.

The pathological investigation also revealed a large number of fibrin clots on the tumor surface and in the regions where the tumor touched normal structures including the left atrial wall and mitral valve. In such circumstances, surgery ought to be carried out as soon as feasible after diagnosis due to the risk of embolization. We propose that waiting to do surgery until the blood culture findings are known is not beneficial. Sometimes cardiac myxoma causes cerebral aneurysm formation, which is similar to the mechanism of mycotic aneurysm formation.¹¹ As a result, compared to non-infected myxomas, those with infections may be more susceptible to the development of cerebral aneurysms. According to reports, it takes an average of three years from tumor removal to aneurysm dissection.

During the 21-month follow-up, no brain aneurysm has been found in the current instance. But we believe that longer-term monitoring is required.

CONCLUSION

We described how an infected cardiac myxoma patient was successfully treated. Suspicion of infected cardiac myxoma should be considered in patients who present with concurrent myxoma and fever of unexplained cause. The following two aspects are crucial in addition to timely surgical resection: postoperative antibiotic therapy should be administered using the same regimen as for infective endocarditis, and preoperative blood culture should be started prior to therapy. The doctor should keep a close eye out for infection, tumor recurrence, and the development of a cerebral aneurysm during the postoperative follow-up.

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