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Case Report

Unveiling the Uncommon: Angina as a Rare Symptom in Cardiac Myxomas Cardiac Myxoma and Angina

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Abstract

Cardiac myxomas, rare neoplasms originating from the endocardium, have captivated the medical community with their multifaceted clinical presentations. Among these presentations, Left Atrial Myxomas (LAMs) stand out for their potential to mimic diverse medical conditions, including angina. In this case report, we present a unique and instructive case of a 52-year-old female who presented with recurrent angina episodes, bradycardia, and a cardiac mass mimicking angina, yet displaying no abnormal Electrocardiogram (ECG) or cardiac enzyme levels. Through an extensive literature review, we highlight the varied clinical manifestations of LAMs, including their potential to induce arrhythmias, heart block, embolic events, and even neurological symptoms. Our patient's case emphasizes the importance of considering LAM as a differential diagnosis in common clinical presentations and underscores the need for thorough medical history review, meticulous clinical examination, and, when available, bedside survey Transesophageal Echocardiography (TEE) for early detection and effective management. This report serves as a reminder to healthcare providers that LAMs, though rare, should be considered in the assessment of patients with diverse symptoms, contributing to timely diagnosis and optimal patient care.

Keywords: Myxoma, Angina, Endocardium Neoplasm

Introduction

Cardiac myxomas, rare neoplasms arising from the endocardium, have continually intrigued the medical community with their diverse and enigmatic clinical presentations [1]. Within this spectrum, our case report delves into a particularly unusual manifestation a cardiac myxoma masquerading as angina. This unique presentation challenges conventional diagnostic paradigms and underscores the intricate nature of cardiac myxomas. Typically, cardiac myxomas manifest as intra cardiac masses. However, they possess the capacity to simulate various clinical scenarios, leading to diagnostic dilemmas [4]. Our case report unravels a diagnostic journey marked by an incidental discovery, where a left atrial myxoma was initially obscured by presenting symptoms of right shoulder pain and inter-scapular back pain [6]. While diagnostic modalities, including transesophageal echocardiography, have advanced our ability to identify cardiac myxomas [3], their diverse clinical presentations persistently challenge timely diagnosis. A comprehensive study of 112 consecutive cases elucidates the multifaceted clinical spectrum of left atrial cardiac myxomas, underscoring the complexity of these neoplasms [4]. In addition to their diagnostic complexity, cardiac myxomas have the capacity to mimic ischemic heart disease, as illustrated by cases of myocardial

infarction associated with left atrial myxomas [7,8]. The intricate relationship between cardiac myxomas and cardiovascular events is further emphasized by the influence of these tumors on myocardial health.

Our case report navigates this intricate landscape of cardiac myxomas, highlighting their potential to mimic angina and their impact on myocardial health. Drawing on a variety of references, we explore the multifaceted nature of these neoplasms and their complex clinical presentations, ultimately aiming to contribute to the broader understanding of this rare cardiac entity. Through this exploration, we seek to underscore the importance of comprehensive diagnostic assessments and the need for heightened awareness among clinicians when faced with perplexing presentations in clinical practice.

Case Presentation

The patient is a 52-year-old female with a history of tobacco dependence who presented to the emergency department with a complaint of pressure-like chest pain. The patient reported that the pain had been occurring intermittently for a week prior to admission. She described it as a substernal pressure-like sensation radiating to her left arm and both shoulders. There were no specific alleviating or exacerbating factors reported. The patient has a social history of smoking, with a 28 pack-per-day smoking history, and a family history of unspecified cancers. She also mentioned having a recent colonoscopy within the past year before admission, which revealed multiple polyps that were not excised due to financial constraints.

The patient's vital signs, complete blood count, and comprehensive metabolic panel were within normal limits. To rule out acute coronary syndrome, cardiac troponin I, B-type natriuretic peptide, and an Electrocardiogram (EKG) were obtained. Cardiac troponin I levels were found to be less than 0.01, B-type natriuretic peptide was measured at 134, and the EKG showed sinus bradycardia with a ventricular rate of 53 bpm. In order to further evaluate the chest pain, a Computed Tomography Angiography (CTA) of the chest was performed. The CTA revealed a 2 cm x 2 cm mass located in the left atrium, raising concerns for cardiac myxoma, metastases, or thrombus (see Figure 1).

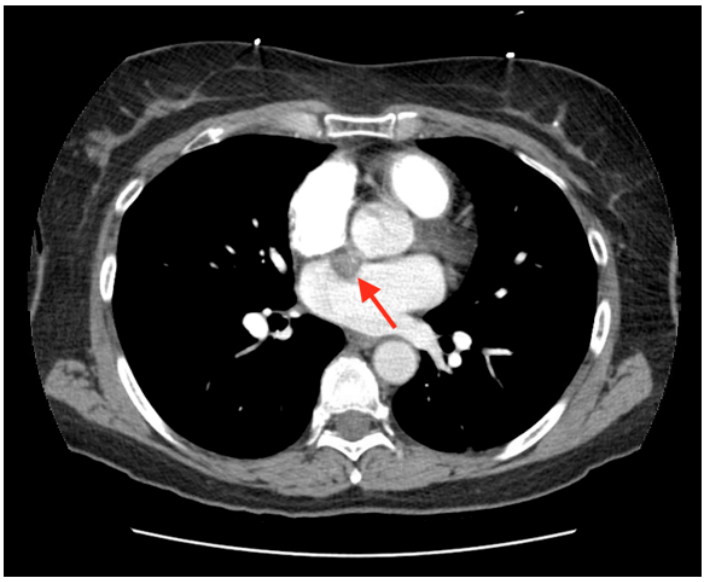

Figure 1: Cross-sectional CTA image of the thorax depicting a 2 cm x 2 cm mass is indicated by a red arrow within the left atrium.

Subsequently, a transthoracic 2D echocardiography was obtained, revealing a left ventricular ejection fraction of 55 to 60% with no evidence of systolic or diastolic dysfunction. The left atrium displayed a medium-sized 2.0 cm x 1.8 cm fixed mass, highly suspicious for a cardiac myxoma. As a result, a consultation with general cardiology was requested to perform a Transesophageal Echocardiography (TEE) for further evaluation. The TEE confirmed the presence of a 2 cm x 1.8 cm mass in the left atrium, along with bowing of the intra-atrial septum from right to left, consistent with increased left intra-atrial pressure (see Figure 2). Additionally, a septal primum aneurysm was noted during the study.

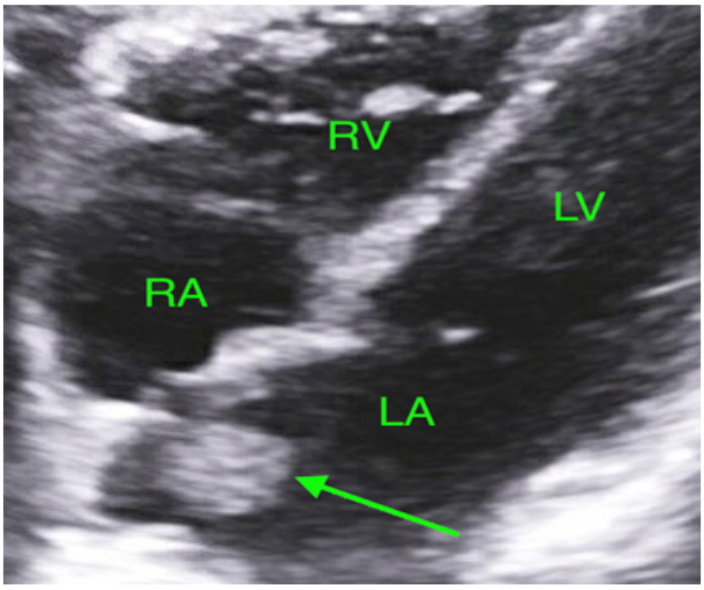

Figure 2: Apical four-chamber view obtained through TEE. It reveals a 2 cm x 1.8 cm mass located in the left atrium (indicated by the green arrow). Left atrium (LA), right atrium (RA), left ventricle (LV), and right ventricle (RV).

Subsequently, it was determined that cardiothoracic surgery was necessary, and a left heart catheterization was performed for preoperative assessment. This study revealed no evidence of coronary artery disease. The patient was then taken to the operating room for excision of the left atrial mass. The mass was excised and sent for pathology evaluation, which confirmed it to be a cardiac myxoma (see Figure 3). A follow-up TEE was conducted after surgery, demonstrating no residual mass. Postoperatively, the patient did not experience any complications and denied any further episodes of similar chest pain. The patient was advised to follow up with cardiothoracic surgery within one month after discharge. During this follow-up visit, the patient continued to deny any recurrence of chest pain.

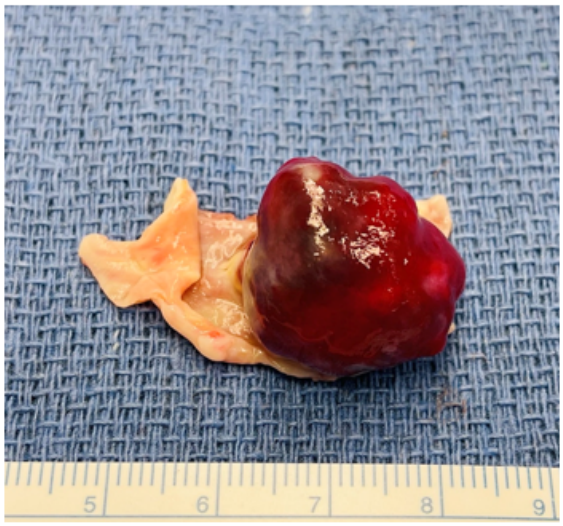

Figure 3: The image represents a pathology examination of the excised cardiac mass.

Discussion

Among the most common primary cardiac tumors, myxomas account for 83%, with 85% of these arising in the left atrial septum [1,2]. These tumors, occurring predominantly in females, are exceptionally rare, with a prevalence ranging from 0.001% to 0.03% in the total population. Diagnosis of myxomas is typically achieved through cardiac imaging techniques such as echocardiogram, Computed Tomography (CT) of the chest, and Magnetic Resonance Imaging (MRI) of the chest. TEE is favored over Transthoracic Echocardiogram (TTE), primarily due to its ability to provide clear imaging, given the proximity of the esophagus to the left atrium [3]. Currently, no medical treatment is available, and surgical excision is considered the gold standard, with a mortality rate of less than 5% [4].

Myxomas present with diverse clinical manifestations, contingent on factors such as size, shape, and location of the

mass. They possess the potential to induce atrioventricular valve obstruction, leading to subsequent arrhythmias, heart failure, heart block, pericarditis with or without tamponade, and embolic events in 30-40% of cases. These embolic events can affect both systemic and cardiopulmonary vasculature, resulting in strokes and even acute coronary syndrome [5,6]. Notably, some cases of Left Atrial Myxomas (LAMs) have presented with non-stroke related neurological symptoms, attributed to hematogenous metastatic spread of myxoma cells to the brain, causing aneurysms or metastatic lesions in the brain [5]. In a separate case report, a patient with LAM exhibited dyspnea and amnesia without abnormal findings on ECG or neuro-physical examination [2]. Another case involving a similarly located myxoma reported presenting symptoms such as right shoulder and intrascapular back pain, accompanied by chest pain, initially associated with normal first ECG findings, which later evolved into new-onset atrial fibrillation [6].

While exceedingly rare, there have been reported cases of typical chest pain and myocardial infarction secondary to LAMs, with an incidence of approximately 0.06%. Interestingly, the inferior myocardial wall was found to be the most commonly affected, even in patients younger than 45 years, despite normal coronary angiogram findings in some instances [7,8].

Our patient, however, presented with a particularly unique clinical scenario. She experienced recurrent angina episodes with concomitant bradycardia, yet displayed no abnormal ST changes on ECG and had normal cardiac enzyme levels. A similar case reported by Schiele, et al. involved an 11-year-old girl with recurrent angina at presentation, who also had normal ECG findings but suffered episodes of syncope [9]. This variation in clinical presentation of LAM underscores the influence of demographic factors such as gender and age. Consequently, LAM should be considered in the differential diagnosis of various common bodily pains, including shoulder pain, back pain, and chest pain, as well as in the assessment of neurological manifestations such as syncope and amnesia.

Conclusion

Throughout our literature review, we have gained a deeper understanding of the diverse clinical presentations associated with LAMs. Our patient's presentation vividly exemplified this diversity and contributed to broadening our awareness of this benign cardiac tumor, which, if left undiagnosed and untreated, can lead to severe health complications, and even fatality in some cases. Consequently, we aim to draw the attention of our colleagues to the importance of considering LAM as a potential differential diagnosis in various common clinical presentations, whether in the emergency department or outpatient settings. Conducting a comprehensive medical history review, performing meticulous clinical examinations, and utilizing bedside survey TTE (if available) can facilitate early detection and management of LAMs, ultimately averting serious outcomes.

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