Mitral Valvular Cyst Mimicking a Solid Mass: Misdiagnosis with Imaging Modalities

Solid bir Kitleyi Taklit Eden Mitral Kapak Kisti: Görüntüleme Yöntemleri ile Yanlış Tanı

Hasan Kocatürk1, Ednan Bayram2, Mehmet Cengiz Çolak3, Hikmet Kocak4

1Şifa Hospital, Department of Cardiology, Erzurum, Turkey
2Training and Research Hospital, Department of Cardiology, Erzurum, Turkey
3Şifa Hospital, Department of Cardiovascular Surgery, Erzurum, Turkey
4Ataturk University, Faculty of Medicine, Department of Cardiovascular Surgery, Erzurum, Turkey

Correspondence to: Hasan Kocatürk, M.D., Şifa Hospital, Department of Cardiology, 25070, Erzurum, Turkey. Phone: +90.442.3290000, Fax: +90.442.3290420, e-mail: haskturk@hotmail.com

Abstract

This report describes a mitral valvular cyst mimicking a solid mass in an 80-year-old patient. The diagnosis was based on histopathological evaluation of the resected material. This report emphasizes the possibility of misdiagnosis by echocardiographic and other imaging modalities of a mitral valvular mass in a patient without any clinical signs and symptoms.

Keywords: Intracardiac mass, Imaging modalities, Misdiagnosis

Özet

Bu vaka raporunda 80 yaşında kadın hastada solid kitleyi taklit eden mitral kapak kistini sunmaya amaçladık. Tanı rezeke edilen materyalin histopatolojik olarak incelenmesiyle konuldu. Bu vaka, herhangi bir klinik semptom ve şikayet olmayan bir hastada ekokardiyografi ve diğer yardımcı görüntüleme yöntemlerinin yanlış tanıya yol açabileceği vurgulamaktadır.

Anahtar Kelimeler: Intrakardiyak kitle, Görüntüleme yöntemleri, Yanlış tanı
Introduction

The differential diagnosis of mitral valvular masses includes atypical myxoma [1,2], papillary fibroelastoma [3,4], filamentous strand [5], lipoma [6], valvular thrombus [6], vegetation [7], and organizing marantic (thrombotic) endocarditis [8]. In one particular patient, we surprisingly came across a unique mitral valvular mass that has not been reported in the literature. Here, we also discuss the differential diagnosis of mitral valvular mass.

Case Report

An 80-year-old woman presented at our cardiology department with chest pain and dyspnea, both of which were associated with physical activity. She had been in her usual state of health until one year before the presentation of these symptoms, and her symptoms increased in frequency and intensity in the two months after presentation. Her past medical history included hypertension, which was controlled with an antihypertensive agent. She denied having fevers, chills, palpitations, hemoptysis, or syncopal attacks. On physical examination, she was hemodynamically stable. Her vital signs were as follows: temperature, 37°C; heart rate, 67 beats/min; respiratory rate, 18 breaths/min; blood pressure, 150/90 mm Hg; a grade 2/6 holosystolic murmur and a moderate mid-diastolic murmur were audible in the apex. No abnormal neurological signs or symptoms were found. Electrocardiogram showed sinus rhythm. Chest radiography revealed no pathological findings. Laboratory tests were within normal limits, and blood cultures taken on multiple occasions were negative. We performed echocardiography and coronary angiography because the patient had a history of chest pain and dyspnea. A two-dimensional transthoracic echocardiogram (TTE) showed an echodense spherical, immobile homogeneous tumor-like mass (2×2.5 cm) without internal echolucent areas located on the left atrial side of the posterior mitral leaflet (Figure 1A). The tumor was sessile with a regular surface and seemed to originate from the mitral valve itself and was not swinging during the cardiac cycle. The anterior leaflet itself was not involved. On Doppler color flow mapping, mild mitral regurgitation was seen in the left atrium, but no obstruction of the diastolic transmural flow was found. The patient could not tolerate a transesophageal echocardiography, so magnetic resonance imaging (MRI) was taken. MRI showed a well-defined homogeneous hypo-intense mass sized 2×2.5 cm on the posterior mitral leaflet, suggestive of calciﬁcation and ﬁbrosis (Figure 1B). In coronary angiography, coronary arteries were free of obstructive disease, and the mass had no feeding artery.

The diagnosis was thought to be an atypical myxoma, and therefore the patient was referred to surgery. The patient underwent surgical resection under cardiopulmonary bypass. The operation was performed with a cardiopulmonary bypass with bicaval cannulation, and the heart was arrested with cold blood cardioplegia and moderate hypothermia (28°C to 32°C). When the left atrium was opened, a well-circumscribed, encapsulated nodule with a smooth surface, 2.5×2.5 cm in size, also involving a part of the anterior mitral leaflet, was discovered on the atrial side of the posterior mitral leaflet. An incision was made into the mass, the necrotic material that ﬁlled the mass was drained (Figures 2A,B), and the other parts of the mass were also resected. Mitral valve repair was performed; however, severe mitral regurgitation developed despite aggressive attempts at repairing the valve. Finally, mitral valve replacement was performed with the St. Jude Medical prosthesis. The patient’s postoperative course was uneventful.

Histologic features of the resected material included fibrosis, calcification, vegetation, and a pattern of inﬂammation. The inﬂammation was composed of lymphocytes, plasma cells, and eosinophils (Figure 2C). The final diagnosis was a cystic mitral valvular mass together with chronic inﬂammation.

Discussion

The major findings in the present case were firstly the misdiagnosis by clinical images of a mitral valve mass and secondly that the resected mitral mass was not related to the anticipated diagnoses, such as atypically located myxoma, papillary ﬁbroelastoma, filamentous strand, lipoma, valvular thrombus, bacterial vegetation, and organizing marantic (thrombotic) endocarditis, which have been reported in the literature [1-8]. We sought to
Thrombotic endocarditis should also be considered in the presence of a history of cancer, hypercoagulability, or previous embolic manifestations. Although valvular thrombosis can be associated with thrombotic endocarditis, a complete review of systems in this patient failed to reveal any signs of connective tissue diseases, cancer, hypercoagulability, or previous embolic manifestations; furthermore, physical examination and laboratory investigations showed no evidence of such diseases [8].

Intracardiac thrombi may mimic cardiac tumors. Mitral valvular thrombi most often appear in patients with a prosthetic mitral valve. No prosthetic valve, atrial fibrillation, or mitral stenosis were present in this patient; hence thrombus would be an unlikely diagnosis [9,10].

After much consideration and investigation, the most appropriate diagnosis in this patient was, although rare, atypically located myxoma arising from the posterior mitral leaflet. About 90% of cardiac myxomas arise from the atrial septum, but left atrial myxomas are known to arise from almost any part of the atrium including the mitral valve itself [1,2]. Embolization occurs in about 45% of patients with cardiac myxoma. Because a myxoma in the mitral valve produces early embolization compared to other cardiac myxomas [1], surgery was performed. However, the final diagnosis was completely different from the pre-surgery diagnosis. For this reason it should be kept in mind that imaging modalities can cause mistakes, and we strongly believe that this case will contribute much to the literature.

Conflict interest statement The authors declare that they have no conflict of interest to the publication of this article.

References