

CASE REPORT

Is Surgery Really Necessary in Blood Cysts?

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Abstract

Blood cysts are rare cardiac tumors. Although it is considered a benign pathology, it can also be associated with embolic events. We report 42-year-old woman who admitted to our clinic with the palpitation and dyspnea on exertion. Apical diastolic murmur was present in physical examination. On echocardiography mitral valve posterior leaflet had a typical 'domed' appearance in diastole while anterior leaflet was restricted in motion with a fibrocystic formation on the ventricular side, causing mild to moderate mitral stenosis. We decided medical follow-up with the patient choice and we have been following for two years without any complications.

Key words: Mitral, blood cyst, rheumatic valve

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Introduction

The most common masses in the heart are metastases, but the majority of primary cardiac masses are benign. Most of the benign intracardiac masses are myxoma (Thiene et al. 2009). Rarely, benign blood cysts can be found in the heart. Blood cysts are diagnosed especially in the infantile period and uncommon in adulthood (Yilmaz et al. 2013). Although most of the cases are congenital, acquired cases have also been reported (Halim et al. 2015). Blood cysts adhere to cardiac chambers and heart valves. As blood cysts are rare, there is no consensus on treatment and patient management.

Case Presentation

A 42-year-old woman admitted to our clinic with the complaints of palpitation and dyspnea on exertion. Apical 2/6 diastolic murmur was present in physical examination. Blood pressure and heart rate were 120/80 mm Hg and 92 bpm respectively. Electrocardiography revealed sinus rhythm. She had a functional capacity of NYHA Class II. Medical history revealed that she was diagnosed as rheumatic mitral valve disease 2 years ago and she had been given penicillin G prophylaxis since then. Left ventricular ejection fraction was measured to be 60% in transthoracic echocardiography. Left atrium diameter, LVEDD and LVESD were 4.1 cm, 4.5 cm and 2.9 cm respectively. Aortic, tricuspid and pulmonary valves were detected to be normal.

Mitral valve posterior leaflet had a typical 'domed' appearance in diastole while anterior leaflet was restricted in motion with a 1,7x1,4 cm fibrocystic formation on the ventricular side (Video 1-2). Maximum and mean gradient were measured to be 13 mmHg and 7.6 mmHg on the mitral valve. Valve area was calculated as 1.23 cm² via pressure half time (PHT) method. Transesophageal echocardiography (TEE) and cardiac magnetic resonance imaging was performed for detailed evaluation of the mitral valve structure (Figure 1-4).

Considering the clinical status of the patient, we made a medical follow-up decision with the patient choice. There was no change in the size and structure of the cyst at the 6th, 12th month and 2nd year controls.

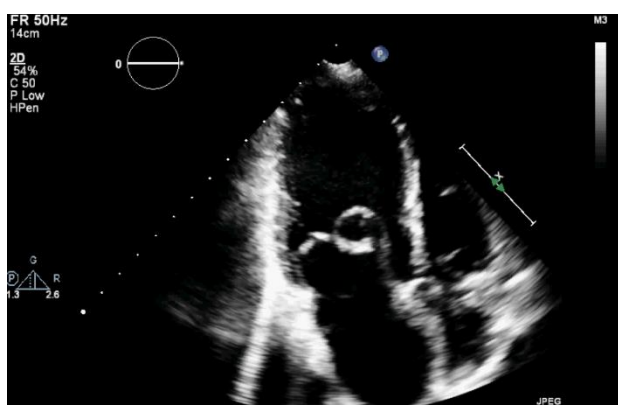


Figure 1. Transthoracic echocardiography apical 4 chamber view
LV: Left ventricle, LA: Left atrium

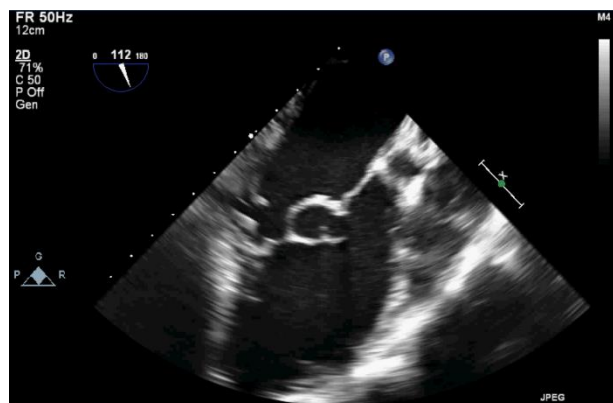


Figure 2. Transoesophageal echocardiography LV: Left ventricle, LA: Left atrium

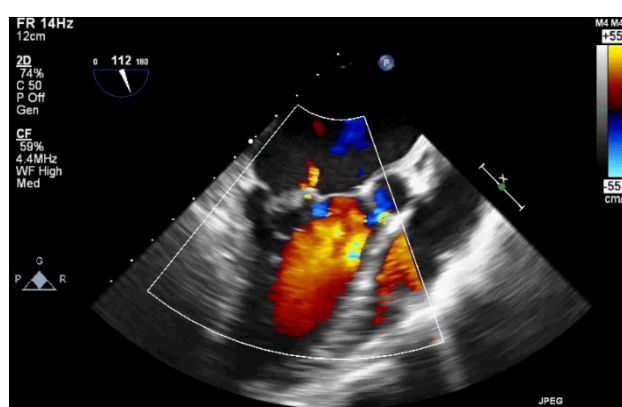


Figure 3. Transoesophageal echocardiography Colour Doppler assessment

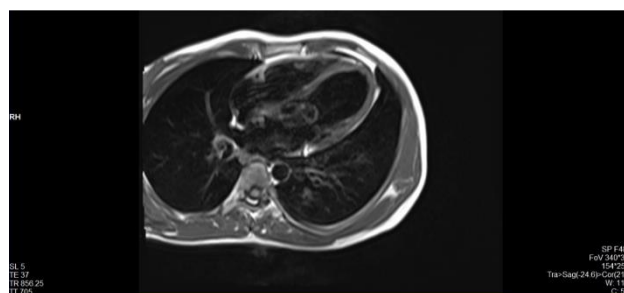


Figure 4. Cardiac magnetic resonance image shows blood cyst

Discussion

Blood cysts are benign intracardiac tumors that have been identified in infancy, mostly asymptomatic and detected incidentally. It is rarely seen in adulthood due to its congenital origin and regression with aging (Donndorf et al. 2013). Blood cysts usually attach to the tricuspid and mitral valve (Zimmerman et al. 1983). Although there are various hypotheses, its pathophysiology could not be determined. Blood cysts are generally known as congenital, but an acquired case was detected after

cardiac surgery (Halim et al. 2013). The relationship between blood cyst development and cardiac surgery is not clear.

Despite being considered benign, there have been cases where it is associated with embolic events. There are case reports on embolic stroke and coronary embolism (Jacob et al. 2007; Pavsic et al. 2017). Large blood cysts can occur with valve dysfunction and associated symptoms such as dyspnea on exertion, fatigue. When attached to the mitral valve, it can cause obstruction in left ventricle outflow tract (Bagheri et al. 2018). Also, there are case reports indicating that blood cysts cause severe tricuspid insufficiency (Aydın et al. 2019). As in our patient, a blood cyst in the rheumatic valve is a very rare condition. There is only one similar case in the literature. However, that patient was not followed up medically, valve surgery and blood cyst resection were performed.

Because of the small number of patients and long-term follow-up results are unknown. There is no consensus on treatment and patient management. All information can be obtained from case reports. While some authors recommend medical follow-up for mildly symptomatic and asymptomatic patients, some authors prioritize surgical treatment. However, it is incidental to detect blood cysts, and the complications we see together can be incidental. Since our patient did not want surgical treatment and had mild symptoms that responded to medical treatment, we decided to clinical follow-up. We have been following for two years without complications.

Conclusion

We reported a 42-year-old female patient who was followed up for 2 years with a blood cyst on mitral valve. We think that blood cysts that do not because serious symptoms can be safely followed with medical treatment.

Ethics Committee Approval: The study was performed following the aid of the ethical standards down in the 1964 Declaration of Helsinki and its later amendments.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept- I.B.C; Design- O.B, Z.Y.G; Materials- Z.Y.G, O.B; Data Collection and Processing- A.K; Literature Review- S.D; Writing- I.B.C; Critical Review- A.K.

Conflict of Interest: No conflict of interest was declared by the authors.

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