

Case Report

Left ventricle hydatid cyst mimicking acute coronary syndrome

Ebru Onturk Tekbas¹, Guven Tekbas², Zuhale Ariturk Atilgan¹, Yahya Islamoglu¹, Habib Cil¹, Mehmet Yazici¹

¹Dicle University Hospital, Department of Cardiology, Diyarbakir, Turkey

²Dicle University Hospital, Department of Radiology, Diyarbakir, Turkey

Abstract

Cardiac echinococcosis rarely mimics acute coronary syndrome. The diagnosis of cardiac hydatid cyst might be difficult on account of varying clinical presentations and nonspecific symptoms.

A 75-year-old female was admitted to our hospital with typical chest pain. The patient had no history of previous cardiac symptoms or any illness leading to heart disease. Her ECG revealed ischemic changes. However, her coronary angiography revealed noncritical plaques in the left anterior descending artery. The diagnosis of cardiac echinococcosis was identified using echocardiography, computed tomography and magnetic resonance imaging. The patient was referred to cardiac surgery for resection of the cyst; however, she refused surgery. Albendazol 800 mg/day was prescribed.

Key words: cardiac hydatid cyst; acute coronary syndrome; cardiac MRI

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Introduction

Hydatid disease is a zoonosis caused by the larval stage of *Echinococcus granulosus*. The most common sites of the infection are the liver and the lungs. Cardiac involvement of echinococcosis has been reported about 0.5-2% in all hydatid cases [1]. Although cardiac echinococcus is generally asymptomatic until the cysts grow to a large size, it can present with clinical symptoms and signs of myocardial ischemia.

Cardiac echinococcosis rarely mimics acute coronary syndromes. The authors found only six reports in the literature describing cardiac echinococcosis mimicking acute myocardial ischemia [2-7]. A case of hydatid cyst of the left ventricular anterolateral wall that caused ischemic changes on electrocardiography (ECG), mimicking ACS with typical angina pectoris is presented in this report.

Case report

A 75-year-old female was admitted to our hospital with typical chest pain. Her ECG revealed T wave inversion in leads D1, aVL, V2-6 and a sinus tachycardia (Figure 1). At her physical examination, heart and lung auscultation were normal. Laboratory

analysis showed increased white blood count ($11.3 \times 10^9/L$) with 64% eosinophils and elevated erythrocyte sedimentation rate (60 mm/h). Cardiac enzymes were within normal range. Transthoracic two-dimensional echocardiography showed a 55x40 mm, multiseptated cyst on the basal-mid portions of the left ventricle anterolateral wall; however, the patient had normal left ventricular wall motion (Figure 2). Coronary angiography revealed noncritical plaques in the left anterior descending artery. Further examinations with cardiac multislice computed tomography (MCT) (Figure 3), and magnetic resonance imaging (MRI), confirmed the echocardiographic diagnosis and enabled a detailed structure of the cyst (Figure 4). Immunofluorescence antibody test was negative for *Echinococcus granulosus*. The patient had no history of echinococcal infestation of any other organs. The patient was investigated for a primary focus of hydatid cyst with abdominal and thoracic scans, but nothing was found. The patient was referred to cardiac surgery for resection of the cyst with a diagnosis of cardiac echinococcosis. She rejected surgical treatment despite the advice of the authors. Albendazol 800 mg/day was prescribed. One month

Figure 1. Twelve-lead electrocardiogram: T-wave inversion in leads D1, aVL, V2-6 and a sinus tachycardia of 106 beats/minute



Figure 2. Two-dimensional echocardiography, subcostal four-chamber view of the heart. Multiseptated cyst structure located in the left ventricle lateral wall.

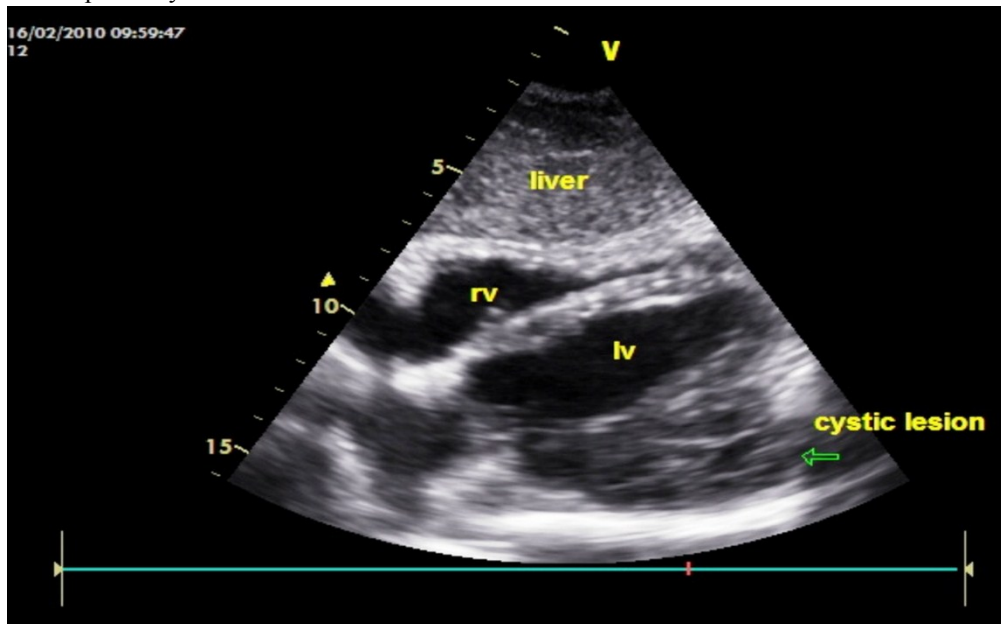
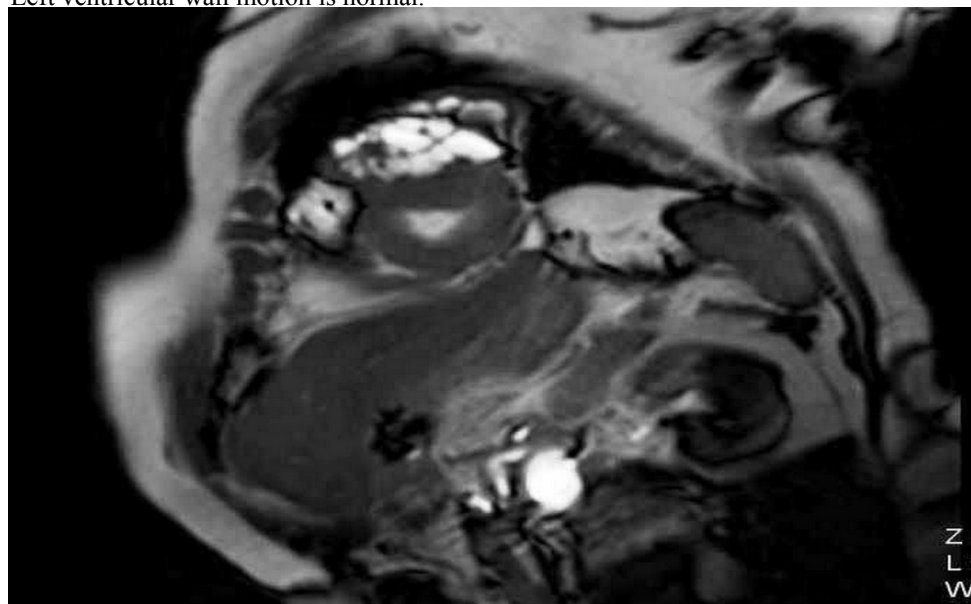


Figure 3. Multislice computed tomography, coronal reformatted image showing giant hydatid cyst reach between left subendocardial region to left lateral thoracal wall



Figure 4. 3T MRI long axis cine MRI showing multilocular cyst at anterior heart wall. Left ventricular wall motion is normal.



later, the control echocardiography did not detect any changes in size and structure of the cyst.

Discussion

Hydatid disease is a parasitic infestation caused by *Echinococcus granulosus* and is widespread in developing countries. Cardiac echinococcosis is rare but may result in serious complications such as pericardial tamponade [1], pulmonary embolism [8] and, moreover, may cause sudden death [9]. Rarely, similar to the present case, it may mimic ACS, for which treatment is completely different. During the early stages of the disease, it is asymptomatic and may be discovered incidentally [1]. Clinical presentation usually depends on the location and size of the cyst [1]. Thus symptoms and signs of cardiac echinococcosis are extremely variable. Although chest pain and dyspnea are the most common symptoms, precordial pain is usually vague [6]. It may present with typical angina, as for the current patient, caused by the compression of the myocardium by the hydatid cyst [6]. This condition may lead to the misdiagnosis of coronary artery disease, especially in elderly patients. The patient in this study had electrocardiographic alterations compatible with alterations in anterolateral ischemia. These alterations suggest coronary artery disease. To rule out the possibility of coronary artery disease, coronary angiography was used, which revealed normal coronary arteries.

Diagnosis of cardiac hydatid cyst is generally established by echocardiography and by serologic tests for *Echinococcus granulosus*. However, echocardiographic examination is sometimes inadequate for initial diagnosis. Computed tomography and magnetic resonance imaging are needed to make a definite diagnosis of some cases. Serologic tests are useful in the diagnosis of hydatid disease, but false negative results are possible [10]. Hydatid positive serology is found in 50% of cardiac locations [11]. The diagnosis of cardiac echinococcosis was made with the combination of transthoracic echocardiography, MCT and MRI, without serological positivity in the patient. Because medical treatment with benzimidazole derivatives such as albendazole is ineffective in preventing rupture or embolization of cardiac cysts, the most common therapeutic approach for cardiac hydatid disease is surgery. However, if surgery is contraindicated or refused by the patient, medical therapy may be an alternative. The World Health Organization guidelines for the treatment of cardiac

echinococcosis recommend surgical resection of the parasitic lesion as treatment of choice [12]. The second option is medical therapy for a limited time (minimum of two years) and in the long-term, medical therapy is indicated in inoperable disease or after incomplete resection of lesions as well as after transplantation [12].

In conclusion, patients who have cardiac echinococcosis can present with a variety of clinical manifestations including typical angina pectoris. Cardiac hydatid cyst should be considered, particularly in endemic regions, in the differential diagnosis of patients with chest pain, even for those who do not have a history of hydatid disease. Furthermore, it should be noted that negative serology is found in up to 50% of cardiac locations.

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Corresponding author

Ebru Onturk Tekbas, MD
Dicle University Hospital, Department of Cardiology
21200 Diyarbakir / TURKEY
Telephone: +90 506-359 31 01
Fax: + 90 412-2488440
Email: dretekbas@yahoo.com

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