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RCR RADIOLOGY CASE REPORTS

Cardiac

Left ventricular hydatid cyst mimicking acute coronary syndrome

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ABSTRACT

Hydatid disease is caused by the larvae of *Echinococcus granulosus*. Domestic dogs and cats are the primary carriers of echinococcal organisms. In some particular regions of the world, this parasitic infection is still endemic. Despite the fact that hydatid disease is most frequently located in the liver (50%-70% of cases) and the lungs (20%-30% of cases), it can occur in any organ or tissue. However, intracardiac localization of hydatid cyst is very rare and it is found in less than 2% of the cases. Cardiac involvement can be caused by systemic or pulmonary circulation or direct spread from adjacent structures. After the cardiac hydatid cyst remained asymptomatic for many years, the cyst opens into the pericardium, causes cardiac tamponade, and mimics acute coronary syndrome, or it may get into the circulation and cause anaphylactic shock, which happens rarely. Because clinical signs and symptoms of cardiac hydatid cyst are not specific and varied, it may be difficult to diagnose this disease. It is critical to diagnose cardiac involvement early and perform prompt surgical intervention. Imaging findings of a patient who had a left ventricular wall cardiac hydatid disease are presented here.

Introduction

Hydatid disease is caused by the larvae of *Echinococcus granulosus* [1]. Domestic dogs and cats are the primary carriers of echinococcal organisms [1]. Hydatid disease is most frequently located in the liver (50%-70% of cases) and the lungs (20%-30% of cases) [2]. However, intracardiac localization of hydatid cyst is very rare and it is found in less than 2% of the cases [2]. Cardiac hydatid cyst is mostly asymptomatic for years,

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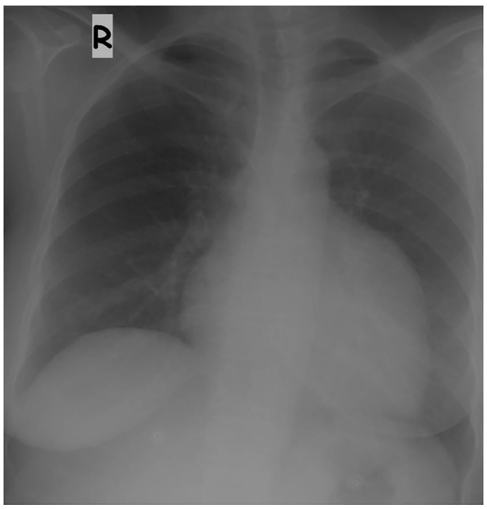

Fig. 1 – Postero-anterior radiograph; left ventricle and heart dimensions are increased.

but sometimes it can lead to life-threatening clinical conditions. In this study, we report a left ventricular hydatid cyst that lead to acute coronary syndrome.

Case report

A 42-year-old female patient with typical chest pain was admitted to the cardiology department of our hospital. She had occasional chest pain, which had been aggravated for 1 month. The pain was more often during walking and stair climbing and it became less after resting. In PA radiography, left ventricle and heart dimensions were increased (Fig. 1). Creatine kinase was 325 U/L, CK-MB was 58 U/L, and Troponin I was 3.37 ng/mL and its electrocardiogram suggested acute coronary syndrome (aVL, V4, V5, and V6 ST elevations). Coronary angiography was performed in the patient and it was seen that her coronary arteries were patent, the first branches of the right coronary artery and left coronary artery were fistulated with pulmonary artery (Fig. 2). After digital subtraction coronary angiography (DSA), a 2-dimensional transthoracic echocardiography was performed. Echocardiography revealed a cystic lesion that originated from the left ventricular wall with floating membrane in it. The patient was examined with abdominal and thoracic scans for a primary focus of hydatid cyst. Echocardiographic diagnosis was confirmed by contrast-enhanced, not ECG-derived, thoracic computed tomography (CT) and conventional thoracic magnetic resonance imaging and a detailed structure of the cardiac cyst were obtained. Contrast-enhanced CT revealed free fluid in the pericardial area and a 63×62 mm unenhanced cystic lesion, originating from the left ventricular wall, with floating membranous structures in it and (Fig. 3). Cardiac magnetic resonance imaging (MRI) revealed a cystic lesion with floating membrane on the T2-weighted coronal and axial images, and also2 cystic lesions were monitored in the right lobe of the liver. One was 30 mm in segment 7, the other one was 46 mm in segment 6, and a cystic lesion 88×82 mm in diameter was observed in the inferior part of the spleen (Fig. 4). Abdominal cystic lesions were intervened with percutaneous aspiration, injection, and reaspiration (PAIR). The patient was sent to cardiac surgery in order to resect the cyst for a diagnosis. The cardiac cyst was removed with an operation (Fig. 5). Radiologic diagnosis of the hydatid cyst was confirmed by histopathologic examination findings. There was no complication during follow-ups.

Discussion

Cardiac localization of hydatid cyst, which represents 0.02%-2% of all patients with hydatidosis, is rare [1]. Cardiac involvement occur from the systemic or pulmonary circulation or by direct extension from adjacent structures [2]. Hydatid cyst can be seen in any part of the heart. The size, location, and integrity of the cyst are significant for manifestations. The

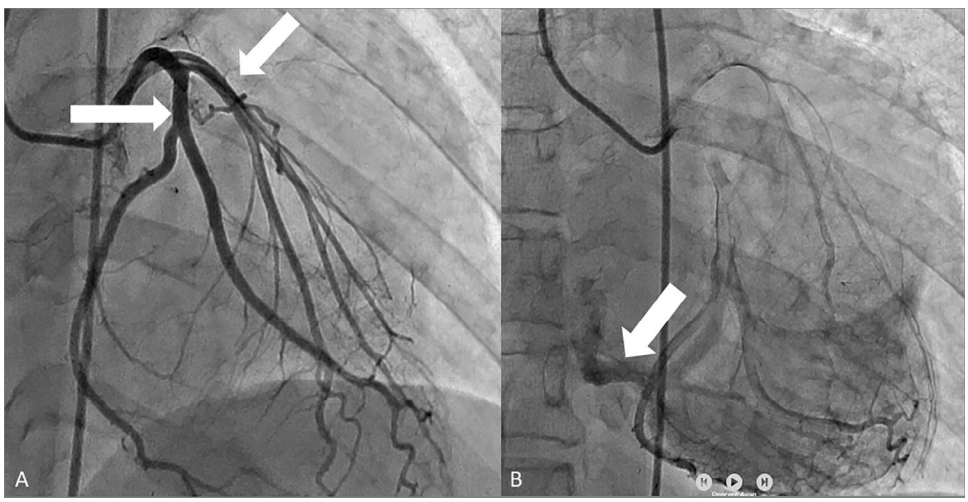

Fig. 2 – Digital subtraction coronary angiography; (A) branches of the right coronary artery and left coronary artery (B) were fistulated with pulmonary artery.