

Epicardial hydatid disease: a rare cause of left ventricular diastolic dysfunction

Epikardiyal kist hidatik hastalığı: sol ventrikül diyastolik disfonksiyonunun ender nedeni

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Abstract

Cardiac involvement in patients with hydatid disease is uncommon. A case of echinococcal infection with multiple cysts in the epicardium in a young man is reported. The diagnosis was suggested by echocardiography, which showed cystic masses adjacent to the left atrium and the left ventricle causing left ventricular diastolic dysfunction. Subsequently, he underwent a successful surgical resection for the cysts.

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Key words: Hydatid disease, cardiac cysts, echocardiography

Özet

Kist hidatik hastalığında kalp tutulumu nadirdir. Genç bir erkek hastada epikardiyuma yerleşmiş çoklu kistlerle manifest olan ekinokokkal infeksiyonu sunulmaktadır. Tanı, ekokardiyografinin sol ventrikül diyastolik disfonksiyonuna neden olan sol atrium ve sol ventriküle komşu kistik kitleleri göstermesi üzerine ileri sürülmüştür. Sonrasında hastamız başarılı bir kist rezeksiyonu ameliyatı geçirmiştir.

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Anahtar sözcükler: Hidatik kist hastalığı, kardiyak kistler, ekokardiyografi

Introduction

Cardiac hydatidosis has been reported uncommonly but is potentially fatal [1]. It is caused by the larval form of *Echinococcus granulosus*. Larvae usually reach the cardiac structures through the coronary circulation. Clinical symptoms and signs depend on the number, size, and site of the cysts [1,2]. Hydatid cysts rarely rupture into the pericardial space. However, when they do, clinical manifestations may include acute pericardial tamponade, secondary pericardial cysts, or constrictive pericarditis [3]. Here, we report an unusual case of echinococcal infection with multiple cysts in the epicardium causing left ventricular diastolic dysfunction.

Case

This is a 40 year old male patient who presented with rather nonspecific symptoms such as palpitations and shortness of breath. His electrocardiogram showed a sinus rhythm, incomplete RBBB, and negative T waves of 1 mm in amplitude in precordial leads (Figure 1). His transthoracic echocardiogram revealed a cystic mass (dimensions, 39x28 mm) adjacent to the anterolateral aspect of the left ventricle (Figure 2). It also revealed left ventricular diastolic dysfunction. Computed tomography (CT) angiographic imaging also indicated a cystic mass with a septate compressing on the left ventricle (Figure 3). Further investigation with CT imaging revealed no other organ involvement. He was scheduled for a coronary

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angiography and surgery. His coronary angiography was normal. Median sternotomy was the surgical approach used due to the presence of cysts adjacent to both the left ventricle and the left atrium.

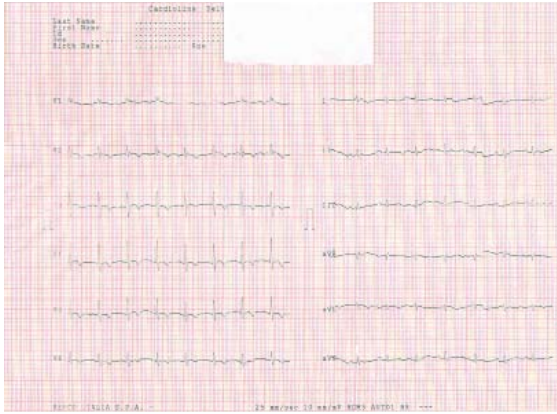


Figure 1. Electrocardiogram showing non-specific T wave changes in precordial leads.

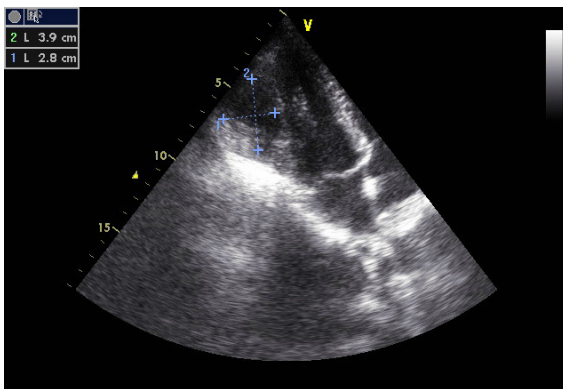


Figure 2. Echocardiographic appearance of a cystic mass measuring 39 x 28 mm in diameter adjacent to the anterolateral aspect of the left ventricle.



Figure 3. CT angiographic appearance of a cystic mass with a septate compressing on the left ventricle.

After heparinization and ascending-aortic and bicaval cannulation were performed,

cardiopulmonary bypass was instituted. The excision was done after aortic clamping with moderate hypothermia and cardioplegia. The cyst was externally inspected (Figure 4). The sites of implantation of the cysts were the anterolateral aspect of the left ventricle, 40x30 mm in diameters, and were adjacent to the left atrium and the right superior pulmonary vein. Before opening the cyst, the surrounding area was cleaned with iodine solution and iodine-soaked sponges were placed around the cyst in order to prevent possible seeding from cystic rupture. All cysts were epicardial with no intracavitary expansion.

After sterilisation of the cysts by injection of hypertonic saline solution, cysts were enucleated, their contents were drained, membranes and daughter vesicles were completely removed (Figure 5). The cavity was washed out using 3% NaCl and was left open. He had an uneventful hospital stay. Post-operative albendazole treatment was instituted promptly. His symptoms resolved. He remained symptom free 6 months after the surgery.



Figure 4. Intraoperative photograph showing the appearance of the cyst externally.



Figure 5. Postoperative photograph showing membranes and daughter vesicles.

Discussion

Hydatid disease remains a significant health problem in endemic areas. Parasitic cysts spread in the visceral organs. Cardiac involvement in patients with hydatid disease is rare, approximately 0.5% to 2% of all cases of human hydatidosis. When present, the cysts usually are intramyocardial; in most cases, a single cardiac cyst is present and is located in the interventricular septum or in the left ventricular free wall. Here, we report an unusual case of hydatid cysts completely confined to the epicardium: one on the anterolateral aspect of the left ventricle and the other one adjacent to the left atrium with no communication between the two. The one adjacent to the left ventricle was evidently causing compression and impairing left ventricular relaxation. Thus, our patient had symptoms of early heart failure resulting from left ventricular diastolic dysfunction due to compression of the left ventricle by hydatid cysts.

Hydatid cysts mostly involve the left ventricle. Less common sites include the right ventricle, interventricular septum, right atrial wall, left atrium, pulmonary artery, and pericardium in the order of decreasing frequency. Diagnosis is difficult on the basis of clinical symptoms alone. Patients may remain asymptomatic or may complain about palpitations, chest pain, and shortness of breath after cysts reach a significant size. The amount and location of the cysts are the major determinants of the symptoms. It is essential to consider cardiac involvement in patients with echinococcal infection of other organ systems and in patients presenting with nonspecific cardiac symptoms and who come from endemic areas. Cysts can cause angina pectoris in the case of coronary flow disturbance due to obstruction. Depending on the location of the cysts, conduction abnormalities, arrhythmias, and valvular dysfunction can be seen [1,2]. Rupture can be fatal, causing anaphylactic shock, pulmonary embolism, or cardiac tamponade. The definitive treatment of cardiac hydatidosis is early surgical resection even in asymptomatic patients [4]. Surgery is safe and the results are satisfactory for such patients.

Our patient underwent prompt surgical resection of the cysts with an uneventful hospital stay. Removal of the cysts cured his symptoms. He was taking albendazole as a discharge medication. However, seeding during surgery may cause recurrence; thus, close follow up is warranted.

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