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Hydatid Cyst of Right Atrium: A Case Report

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ABSTRACT

Cardiac hydatid cyst is rare and usually occurs in the setting of disseminated disease. Herein, we reported a case of isolated right atrial hydatid cyst misdiagnosed clinically as a tumor. A 65-year-old woman diagnosed as having large right atrial mass suspected of malignancy underwent resection of the cardiac mass. Histopathological examination showed laminated membrane and protoscolices of Echinococcus Granulosus. However, all other work-ups failed to document systemic diseases. Therefore, isolated cardiac hydatid cyst was diagnosed. Hydatid cysts should be considered in differential diagnosis of any cardiac mass, especially in endemic areas.

►*Implication for health policy/practice/research/medical education:*
Hydatid cysts should be considered in differential diagnosis of any cardiac mass, especially in endemic areas. Prompt diagnosis using serological tests and imaging studies as well as administration of proper anthelminthic and surgical interventions can increase the patients' survival rate, decrease post-operative complications, and reduce the chance of dissemination of the parasite to other sites.

1. Introduction

Hydatid cyst is a zoonosis infection caused by larval stage of Echinococcus Granulosus. The main primary sites of involvement are lung and liver (1-5).

Isolated cardiac hydatid cyst is rare and occurs in about 0.2 - 2% of all cases (1-3, 5-7). The main routs of heart involvement are invasion of myocardium through spread of parasites in coronary arteries or via pulmonary venous system resulting from rupture of pulmonary cyst into veins. Most commonly, cardiac hydatid cysts are located in the Left Ventricle (LV) due to greater amount of LV blood supply followed by Right Ventricle (RV), pericardium, pulmonary artery, interventricular septa, and atria (1-3).

Herein, we report a case of Right Atrium (RA) hydatid cyst misdiagnosed clinically as a malignancy of RA.

2. Case Presentation

The patient was a 65-year-old housewife admitted in Faghihi hospital, affiliated to Shiraz University of Medical Sciences, with complaint of chest pain and malaise since 1 week prior to admission. Her medical history revealed diabetes mellitus and hypertension. On physical examination, she was afebrile with blood pressure of 130/80 mHg, pulse rate of 80/minutes, and respiratory rate of 16/minutes. Other exams were unremarkable, except for pale conjunctiva. Her lab data including complete blood count with differential and biochemistry showed mild anemia (Hb: 11 mg/dL), fasting blood sugar: 130 mg/dL, triglyceride: 180 mg/dL, total cholesterol: 250 mg/dL, Low Density Lipoprotein (LDL): 150 mg/dL, and High Density Lipoprotein (HDL): 64 mg/dL. Her electrocardiogram was also unremarkable. However, transesophageal echocardiography showed enlarged RA and RV. There was a large non-homogenous mass in RA measuring about 44x37 millimeters attached to the RA auricle with a wide base and a mobile tip protruding through the tricuspid valve during diastole (Figure 1). A small amount of pericardial effusion was noted. LV function was within the normal limit with ejection fraction of 55%. Besides, abdominal and pelvic ultrasound and chest x-ray were unremarkable, except for a small left-sided renal stone. With clinical impression of primary RA mass, she

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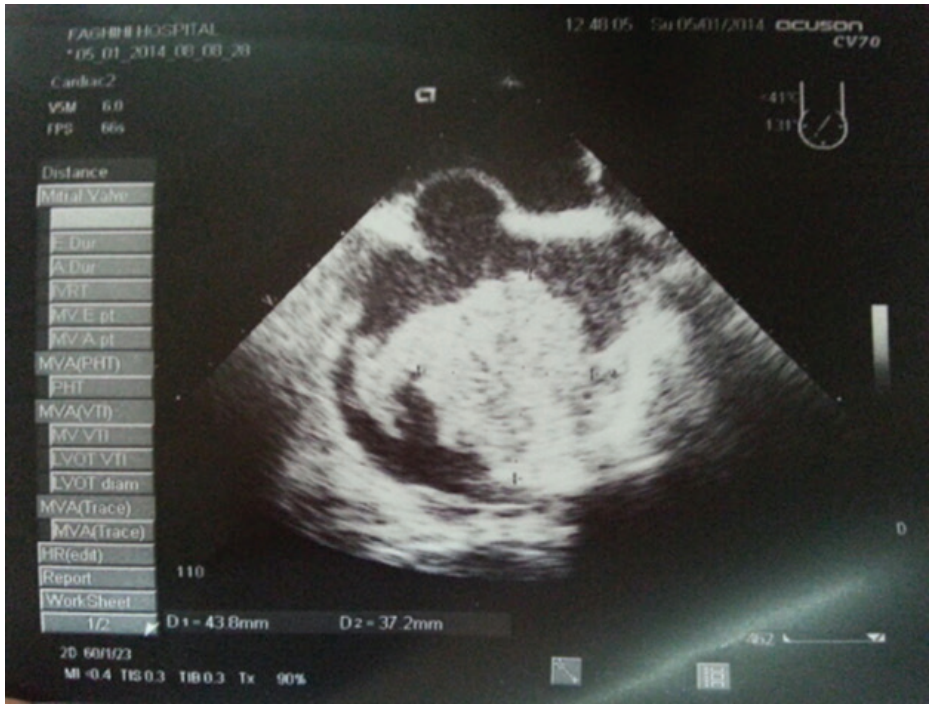

Figure 1. A Non-Homogenous Mass in RA Measuring about 44x37 Millimeters Attached to the RA Auricle

was scheduled for excision of the tumor through cardio pulmonary bypass. Grossly, the mass was creamy-gray, solid-cystic with soft consistency. Histopathological examination showed multiple fragments of necrotic and fibrosed tissue admixed with laminated membrane and protoscolices of Echinococcus granulosus (Figure 2). Therefore, cardiac hydatid cyst was diagnosed. Albendazole was administered for the patient, but unfortunately, she died 4 days after the surgery due to a cerebrovascular accident.

3. Discussion

Hydatid cyst is endemic in some parts of the world, including Iran. Cardiac involvement is a rare occurrence (1, 2, 4, 7). It is often asymptomatic and only 10% of the patients with cardiac echinococcosis have clinical manifestations. The clinical presentations of cardiac hydatid cysts vary according to location and size of the cyst. The most frequent symptom is chest pain. In cases with compression of coronary arteries by the cyst, chest pain may resemble angina pectoris. Other manifestations include arrhythmia, valvular dysfunction, pericardial effusion, pulmonary or systemic emboli, stroke, and anaphylactic shock (1, 2, 5-7). In this study, we reported a case of cardiac hydatid cyst clinically misdiagnosed as a tumor of

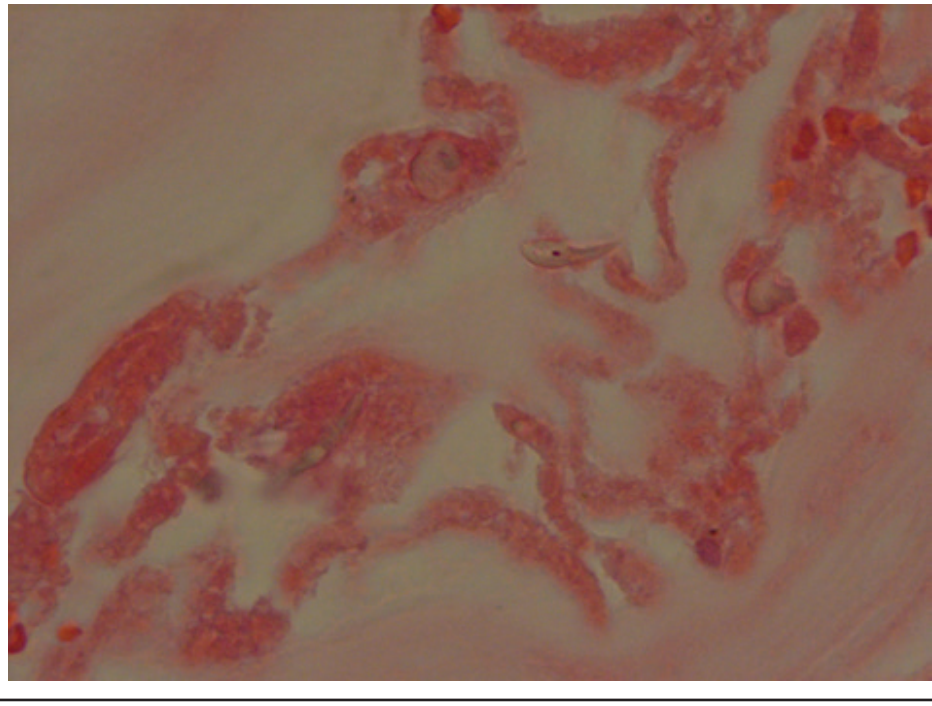

Figure 2. Protoscolices of Echinococcus Granulosus Seen in RA Mass, Hematoxylin, and Eosin, Oil Immersion

RA. Primary and metastatic cardiac tumors, pericardial cysts, mediastinal tumors, and aneurysms are regarded in differential diagnosis of cardiac hydatid cysts (2).

Diagnosis of cardiac hydatid cysts is based on different imaging studies, including echocardiography, Computed Tomography scan (CT scan), and Magnetic Resonance Imaging (MRI). MRI finding in favor of hydatid cyst is hypointense peripheral ring on T2-weighted images (1). Serological tests may also help in diagnosis of hydatid cysts with relatively good sensitivity and specificity (1, 2). The mainstay of treatment is surgical resection of the mass combined by medical therapy with albendazole (1, 2). Because it is essential to sterilize the cyst before resection, hydatid cysts should be suspected in any solid-cystic lesion of the heart, especially in endemic areas; therefore, accurate pre-operative diagnostic modalities should be applied.

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Authors' Contribution

Data gathering and figures preparation: Hooria Momenzadeh; Study design, drafting of the manuscript, and critical revision of the manuscript for important intellectual content: Maral Mokhtari

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