Acute pericardial tamponade due to ruptured multiloculated myocardial hydatid cyst

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Introduction

Hydatidosis is a parasitic infestation caused by Echinococcus granulosus. Although uncommon, cardiac involvement has serious consequences. The incidence, even in countries where it is endemic, is <2%.1–3 The most frequent location of the cyst is the interventricular septum and left ventricular free wall.

Patients with cardiac echinococcosis may remain asymptomatic for many years or have minor non-specific complaints, but it is associated with an increased risk of lethal complications if undiagnosed and untreated.2–4 In this study, we report a patient with a hydatid cyst lying at the apicolateral and apical segment of the left ventricle, which caused pericardial tamponade due to pericardial effusion and cyst rupture.

Case report

A 36-year-old man with fever, rigor, substernal chest pain, and progressive dyspnoea for 2 weeks was admitted to our hospital. On admission, he was orthopnoeic and NYHA class IV functional capacity. He had a pain that radiated to his back and neck, changed in severity with postural changes, and aggravated by deep breathing. He was healthy before and had no history of heart or lung disease, but he works in a factory with many dogs.

On physical examination, he appeared in distress. The blood pressure was 95/70 mmHg. Heart rate was 115 bpm and regular. Jugular veins were distended.

He was febrile. On auscultation, there was II/VI grade mid-systolic murmur at cardiac apex and all cardiac sounds were diminished. No pedal oedema was noted.

The chest X-ray showed global cardiomegaly and echoluscent in apical portion of the cardiac silhouette. Electrocardiogram showed low voltage, and symmetrical T-wave inversion in leads V2–V6. He had erythrocyte sedimentation rate of 70 mm/h and a total white cell count of 13 500/ram3, 22% of which were eosinophils. Transthoracic echocardiography revealed, in addition to a large pericardial effusion associated with echocardiographic signs of cardiac

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tamponade, a 6.5 × 5 cm round echo-free image suggesting a cystic mass adjacent to the apical and apicolateral segment of the left ventricle (Figures 1 and 2). The cyst was multilocu-
lar. Because the patient was haemodinamically unstable, an emergent surgical consult was performed and patient immediately transferred to cardiac surgery department.

The patient was then taken to operation via median sternotomy. Nearly 2 L of serous fluid was present in the pericardium. A round non-contractile mass protruded in the apical portion of the left ventricular was observed. Before opening the cysts, their surroundings were wrapped with compression gauze. To prevent contamination of the surrounding areas, cysts fluid was aspirated through multiple needle puncture, three of them were ruptured 0.45 separate small cysts then were removed in on pump heart and remained a cavity in the left ventricular wall (Figure 3).

The cavity was cleansed and sterilized with diluted polyvi-


Discussion

Cardiac hydatid cysts are a rare complication of Echino-
coccus infection in humans.1,2 It remains a public health, econ-
omic, and social problem in many animal raising countries. Cardiac involvement usually is diagnosed during adulthood because of the long latency between the infection and pres-
etation of the disease and because symptoms are non-
specific.3,5,6 It is now commonly known that the hydatid cyst reaches the heart through the coronary arteries. The most frequent location of the cyst is the myocardial
region, particularly the interventricular septum and left ventricular free wall. Pericardial and paracardial sites of implantation are less common.1,4 Similarly, in our case, the cyst was located at apicolateral and apical segment of the left ventricle free wall.

Clinical presentation depends on size, number, and location of the cysts and the presence of complications. Patients may be asymptomatic or having non-specific complaints such as fever, chest pain, weakness, and eruptions. The disease may manifest with anaphylactic shock due to cyst rupture into the bloodstream, systemic hydatid embolism, hydatid pulmonary embolism,7 valve obstruction, mitral regurgitation secondary to papillary muscle involve-
ment, atrioventricular conduction defects, arrhythmias, pericarditis with effusion, and cardiac tamponade due to sudden cyst rupture into pericardial space.1,2,5 In this report, we present a case with pericardial tamponade due to pericardial effusion with cyst rupture.
Prior history of hydatid disease can facilitate the diagnosis of cardiac cysts. The presence of eosinophilia is a very useful complementary finding. Chest X-ray film often shows abnormal shape of the heart shadow, or sometimes a calcified spherical mass. Serologic tests are often useful but some patients with echinococcosis do not develop a detectable immune response. The diagnosis is based on echocardiography, CT, and MRI results. Echocardiography is the imaging method of choice for diagnosis and in planning surgical intervention. The appearance of a round, thin-walled, multiloculated mass is characteristic of the echinococcal cyst. The echolucent and multiseptate nature of hydatid cysts, sometimes, may be absent. Therefore, echinococcal cyst should be considered in the differential diagnosis of tumoural lesions of the heart. Extirpation of the cyst is recommended, because of possible occurrence of severe complications including cyst rupture and sudden death, even in asymptomatic patients. The current surgical treatment of cardiac hydatid cyst is performed with extracorporeal circulation. In some cases, it is possible to undertake surgery in a beating heart, but necessary equipment should be readily available in operating room. In our case, we performed cyst removal in non-beating heart (on pump surgery). If total excision of the cyst wall is not feasible, the remaining cavity should be closed by obliteration and/or plication.

References