

# Isolated cardiac hydatidosis – a case report

Izolowana bąblowica serca – opis przypadku

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## Abstract

Cardiac hydatidosis is rarely encountered. A case of isolated cardiac hydatid cyst of the left ventricle in a young woman is described. The diagnosis was suggested by echocardiography and was confirmed later by pathological evaluation. Serological tests were negative. The patient underwent a successful operation for cyst resection.

**Key words:** cardiac cysts, hydatidosis, echocardiography, chest roentgenogram

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## Case report

A 22-year-old female was referred to our clinic for evaluation of recent onset precordial pain and shortness of breath. Three months after an uneventful pregnancy she had developed intermittent chest discomfort and dyspnoea on exertion. She had been otherwise healthy and did not report any weight loss or fever. Her past medical history was not notable. Physical examination was unremarkable except for a 2/6 systolic murmur over the apex. Electrocardiogram showed T wave inversions in leads I, avL, V<sub>5</sub> and V<sub>6</sub>. Chest roentgenogram showed a slight bulging in the left heart border (Figure 1). On echocardiography a cystic round mass (3.7 × 3 cm) was detected in the left ventricular (LV) cavity (Figure 2). The cyst adhered to the posterolateral wall of the LV, decreasing its volume, and was adjacent to the posterior papillary muscle and chordae, causing mild to moderate mitral regurgitation. Routine lab tests were within normal limits and serological tests for echinococcosis were negative. She denied any history of contact with livestock or pet animals. Abdominal and brain CT scan revealed no abnormality. The patient was then scheduled for cardiac surgery for removal of the cyst. After bicaval venous cannulation and cannulation of the ascending aorta cardiopulmonary bypass (CPB) was instituted. A cyst in the posterolateral wall of the LV involving the interventricular septum was detected that was punctured and 25 cc of light coloured liquid was

aspirated and then was sterilised by injection of hypertonic saline solution. The cyst was excised and the LV was repaired. Histopathological examination of cyst material and resected layers was consistent with the diagnosis of hydatid cyst. Postoperative course was uneventful. She was discharged on albendazole. At ten months follow-up the patient remained well and symptom free.

## Discussion

Hydatid disease, one of the oldest recorded diseases in humans [1], continues to be a significant health problem in endemic areas such as the Middle East [1]. The most frequent locations of hydatid cysts in human beings are the liver (> 65%) and the lungs (25%) but echinococcosis can involve any organ including the heart and pericardium [2, 3]. Cardiac involvement is rare and comprises about 0.5-2% of human hydatidosis [2, 4, 5]. In more than 50% of cases, the heart is not the sole affected organ, while in the remaining cases, no other evidence of systemic dissemination can be found [6].

The disease is caused in humans by the larva of *Echinococcus granulosus*. Dogs and other canids are the definitive host, sheep are the intermediate host and human beings are common accidental intermediate hosts for *Echinococcus* [2]. Larvae reach the heart through the coronary circulation but other pathways have also been described [5].

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**Figure 1.** Chest roentgenogram is showing slight bulging in the left heart border



**Figure 2.** Echocardiography – a cystic round mass in the left ventricular cavity

The distribution of cardiac hydatid cysts parallels the blood supply and they are most frequently located in the left ventricle, as in the above-mentioned case (55-60%) [7]. Less common sites are the right ventricle (15%), interventricular septum (5-9%), right atrial wall (3-4%), left atrium (8%), pulmonary artery (7-8%) and pericardium (2-10%) [4, 5, 7, 8]. Left ventricular hydatid cysts are usually localised subepicardially as in our case and rarely rupture into the pericardial space [5].

Clinical manifestations of cardiac hydatidosis vary widely from asymptomatic to life-threatening conditions, depending on the cysts number, size, location, complications and involvement of surrounding structures [4, 5]. Cardiac hydatid cysts may remain asymptomatic or cause minor non-specific complaints at early stages but

after reaching a significant size they can produce symptoms [9]. The most common presentation is chest pain or precordialgia [2], as in our case. Cardiac hydatid cysts may produce signs of an intracardiac mass or cause congestive heart failure [5]. They can also manifest with conduction abnormalities, arrhythmias, palpitation and angina pectoris [7] or become symptomatic by compressing neighbouring structures [4]. Rupture of a cyst is not rare and has serious complications that can be fatal, including anaphylactic shock, central or peripheral arterial embolism, pulmonary embolism and cardiac tamponade [9, 4].

Serological tests are not conclusive [2] as approximately 10 to 20 percent of patients with hepatic cysts and about 40 percent with other cysts do not produce detectable specific antibodies [10]. High titres are valuable but inconstant [11]. Serological evaluations were negative in our patient. The patient had inverted T waves on ECG, as is common in cardiac hydatidosis [11].

The definitive treatment of cardiac echinococcosis is surgical extraction of the cyst. Considering the possibility of dangerous complications, surgical treatment is necessary even in asymptomatic patients. [12]. The patient underwent prompt surgery after identification of the cystic mass, though hydatidosis was confirmed postoperatively. In differential diagnosis of cardiac hydatidosis, myocardial aneurysms, congenital pericardial cysts, myocardial abscess, cystic degenerating tumours, and pericardial haematomas should be kept in mind [9].

Cardiac echinococcosis should be suspected in patients from endemic regions, presenting with non-specific cardiac complaints especially when a mass is seen in chest roentgenogram or echocardiogram [2] or in patients with a history of hydatid cyst elsewhere. Our case did not have a history of hydatid cyst, nor could we find evidence of any other organ involvement. Though more elaborated imaging modalities are of paramount value in diagnosis and exact localisation of the cyst, the importance of the initial chest roentgenogram should not be overlooked, especially with regard to the fact that most of these patients may present in rural areas where complex diagnostic modalities might not be readily available. In the presented case the abnormal cardiac silhouette in chest X-ray drew attention and led to further work up. Echocardiography is of great value in diagnosis of cardiac echinococcosis but the great variety of findings regarding number, size, location, and appearance of cysts must be kept in mind for correct interpretation [13]. Physicians, especially in endemic areas, need to be attentive as a high index of suspicion is required for diagnosis and prompt treatment that could be life saving.

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