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Cardiac Hydatid cysts; presentation and management. A case series

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ABSTRACT

Introduction: Hydatid cyst commonly affects liver and lung. Cardiac Hydatid cyst is an extremely rare disease. The aim of this study is to report the presentation and management of cardiac Hydatid diseases admitted to two major cardiac centers.

Method: A retrospective, case series study, conducted in two centers during two years. Each case presented separately regarding presentation, diagnosis and management.

Results: Four cases have been reported, age ranged from 14 to 42 years with mean age of 24.75 years. Three patients (75%) were male, one patient (25%) was female. Three cases (75%) had history of chest pain, 2 cases (50%) had palpitation, and one case (25%) had nausea, vomiting and fever. Echocardiography was the initial diagnostic test in 2 cases (50%), final diagnostic test in two cases (50%). In 3 cases (75%) the cyst was found in the left ventricle and one case (25%) in right ventricle. Median sternotomy was performed for all cases.

Conclusion: Cardiac Hydatid cyst is a very rare disease. Chest pain is the most common symptom. Surgery is the main modality of treatment.

1. Introduction

Since the era of Galen, hydatid disease was introduced to medicine when Thebesius described this entity in the 17th century. Its origin thought to be in Iceland and to have been brought to continental Europe by dogs accompanying whaleboats in the 18th century [1]. Geographic areas that have highest infestation rates are those in which there is continues contact between humans and certain domestic carnivores such as cats, dogs and some ungulates as sheep [2]. Echinococcosis is endemic to the Mediterranean region, South America, Australia, New Zealand, the Middle East, Alaska, and Canada, where it is widespread among native American tribes [1]. Although no body part can be spared from hydatid cysts (HCs), they mostly affect the liver and lungs [3].

Affection of bone and muscles (smooth and skeletal muscle) is very rare [2] [3] [4]. Cardiac involvement is much rarer, yet potentially fatal condition and comprises 0.5–2% of all hydatid cases [5] [6]. Any component of the heart is vulnerable to be involved and the presentation depends on the location, size and integrity of the cyst. The myocardium of the left ventricle (LV) is more frequently involved, reaching two-three folds more than the right ventricle (RV) with much less involvement of the interventricular septum. Right and left atria affection is approximately equal. Pericardial involvement occurs mostly in multifocal cardiac echinococcosis.

Solitary pericardial HC is rare [5]. Growth of the cyst leads them being pushed toward a weaker side of the cardiac wall, either the epicardium or the endocardium. LV HCs are usually located subepicardially therefore rarely rupture into the pericardial space. However, if rupture happens, it may be silent or it may cause acute pericardial tamponade, constrictive pericarditis or secondary pericardial cysts [5].

Subendocardial cysts rupture may lead to anaphylactic shock, peripheral, systemic or pulmonary embolization and even sudden death. However it may also be silent. Intracavitary cyst rupture is more frequent in the RV than the LV and can cause pulmonary embolization, pulmonary hypertention and death [5]. The aim of this study is to report the experience of two open heart centers regarding cardiac HC. The work has been presented in line with PROCESS guidelines [6].

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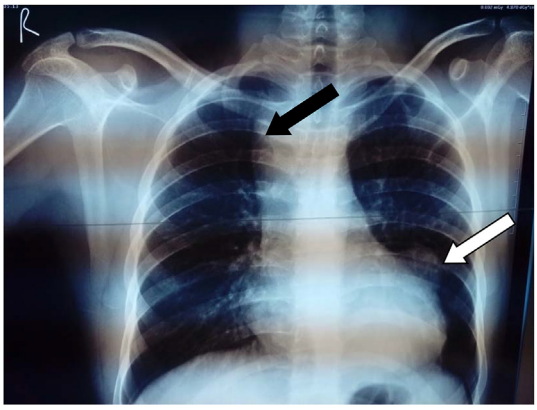

Fig. 1. Chest x-ray of the first case showing round, smooth outline lesion at the left side of heart (white arrow). There is smooth outline bulging at the right side of heart (black arrow).

2. Case series

2.1. First case

A 23-year-old male patient with poor socioeconomic status, complained of nausea and vomiting for three month duration, followed by increasing fever, attacks of dizziness, chest pain and strider for which he visited a physician whom ordered a chest-X-ray for him that showed a cystic lesion suggestive of HC (Fig. 1). Further assessment was done by computed tomography scan (CT-scan) and echocardiography (Echo) (Figs. 2 and 3). Abdominal Ultrasound was negative for additional HCs. Albendazole therapy (10 mg/kg) was initiated and the patient was scheduled for operation, the strider improved. The patient was admitted to the governmental hospital in preparation for operation (monitoring vital signs and checking blood sugar).

Median sternotomy was performed, there was adhesion between the pericardium and heart, two cysts were found, one on the right side of the ascending aorta and the other in left posterolateral wall of the heart. The aortic cyst was excised followed by initiation of cardiopulmonary bypass and excision of the cardiac cyst thereafter Figs. 4 and 5).

The patient was sent home uneventfully at sixth postoperative day. The operation was supervised by the first author.

2.2. Second case

A 14-year-old boy presented with palpitations, for which he visited a pediatric cardiologist who performed an Echo for him which showed an interventricular septal cystic lesion suggestive of HC. The patient was admitted to governmental hospital, and optimized ((monitoring vital signs and checking blood sugar) for urgent operation. Operative

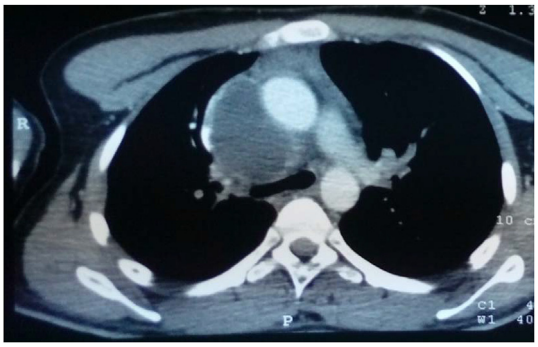

Fig. 2. Computed tomography of chest of the first case, cross sectional image. Round, wall enhancing, partially calcified lesion involving the right side of ascending aorta.

Fig. 3. Computed tomography of chest of the first case, cross sectional image. Round, septated, wall enhancing lesion involving left side of heart.

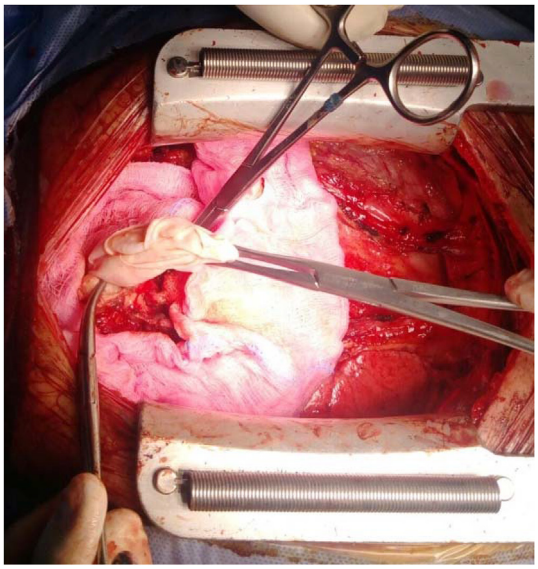

Fig. 4. Intra operative image of the first case, excision of the aortic cases.

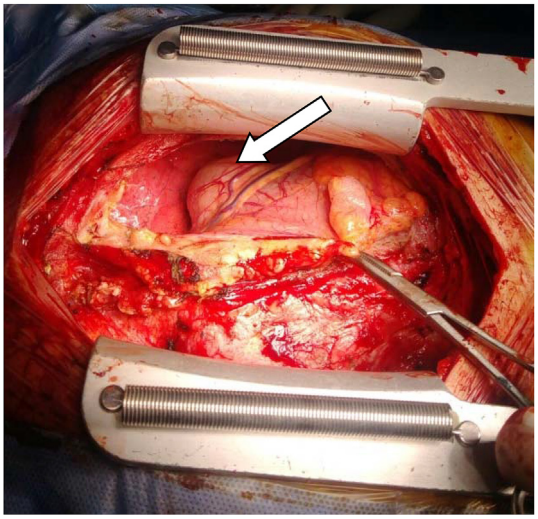

Fig. 5. Intra operative finding of the first case. Intact Hydatid cyst bulging from the left side of left of left ventricle (white arrow).

access was through median sternotomy, the cyst was bulging from the RV wall, after initiation of cardiopulmonary bypass, the cyst was excised followed by pericystectomy. The patient left the hospital