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Case Report

Pericardial Hydatic Cyst: An Unusual Cause of Heart Failure

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ABSTRACT

Pericardial hydatic cyst is rare even in endemic countries. We report a case of 69-year-old man with isolated pericardial hydatid cyst that presented an overall heart failure. Tran thoracic echocardiography and computed tomography are revealed the pericardial cystic mass. Surgical cystectomy was realized without cardiopulmonary bypass. In post-operative the patient received albendazole. He remained asymptomatic without recurrence during 18 months follow-up period.

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Introduction

The hydatid cyst is a parasitic disease caused by *Echinococcus granulosus*. This infection is endemic in breeding areas through the world. In Morocco its incidence is 5.2/100,000 [1]. Cardiac localization is rare, not exceeding 2% of all hydatid lesions, however its spontaneous evolution is serious due to the risk of compression and rupture [2]. We report a new case of pericardial localization of hydatic cyst compressing heart chambers and responsible of global heart failure.

Case Report

A 69-year-old male patient presented to our department for a one-year history of retro sternal pain and exertional dyspnea that was gradually worsening to NYHA Stage IV. This was associated with signs of right heart failure with edema of lower limbs and spontaneous turgescence of the jugular veins. He was living in a rural area, had contact with dogs and was an active smoker.

Physical examination found an orthopneic patient, with hepatomegaly and hepatic jugular reflux. The hemodynamic state was stable. The electrocardiography shows a regular and sinusal rhythm with repolarization disorders in the lower territory. On the chest x-ray there was a left basal opacity with a normal size heart silhouette.

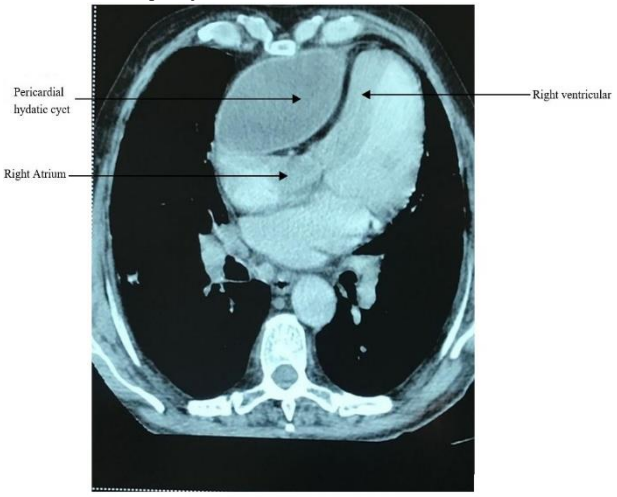

Figure 1: Computed tomography scan revealing pericardial hydatic cyst compressing the right ventricular.

Transthoracic echocardiography revealed an intra-pericardial cystic mass (107mm/57mm) in contact with the anterior face of the right ventricle compressing it with significant respiratory changes. The

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inferior vena cava was dilated to 25mm and non-compliant. The left ventricular (LV) had a normal size with a left ventricular ejection fraction (LVEF) of 57%. The chest CT scan with contrast showed a cystic mass in the antero-infero-right part of the pericardium measuring (90 × 89 × 85mm), compressing the right ventricle (Figures 1 & 2). Laboratory data did not find hyper eosinophilia. Hydatic serology was negative, but CRP was 28mg/L. The cardiac enzymes were normal.

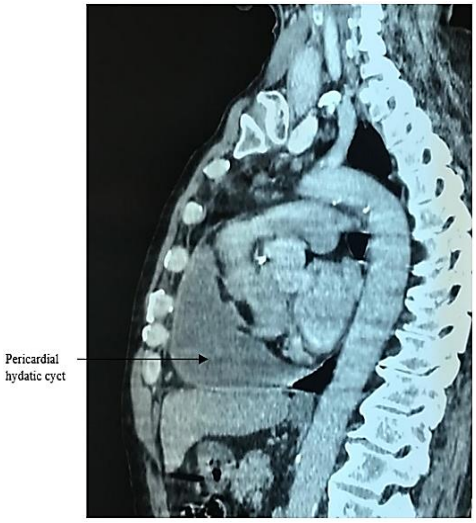

Figure 2: Computed tomography scan revealing a huge anterior hydatic cyst.

Due to the emergency of his clinical condition, the patient underwent surgery on the day after his admission. Cystectomy was planned after midline sternotomy and stand-by cardiopulmonary bypass (CPB). After protection of the operating field with compresses soaked in 10% hypertonic saline serum, the cyst was punctured, a clear liquid of rock water was evacuated, and then the salient dome of the pericardial cyst was resected and suctioned with removal of the liquid and germinative membranes of different stages (Figure 3). The residual cavity was sterilized by hypertonic saline solution and left opens with a drain. The surgical piece was sent to the parasitology laboratory which confirmed the diagnosis of hydatic cyst. The patient was put on albendazole at a dose of 10mg/kg/J for 3 months. He remained asymptomatic without recurrence during 18 months follow-up period.

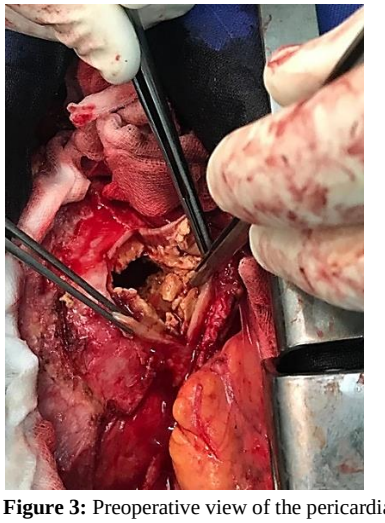

Figure 3: Preoperative view of the pericardial cyst opened.

Discussion

Hydatidosis is a parasitic infection caused by echinococcus granulosus. It is endemic in livestock areas. North African countries are considered to be countries with highest hydatic endemicity. The incidence in Tunisia is 15 cases/100000 inhabitants [3]. In Morocco, it is 5.2/100,000 inhabitants with female predominance (sex-ratio H/F: 0.66) and in young adults aged 15 to 49 (59%) [4]. Cardio-pericardial hydatidosis is rare even in endemic countries: 0,5 to 2% of all hydatic locations [5-8]. Primary pericardial localization is very rare, accounting for 2-10% of all heart locations [9]. Cardio-pericardial cyst at the beginning is asymptomatic and becomes symptomatic when it increases in size compressing neighborhood structures as is in the case of our patient or when it ruptures [10]. Uncomplicated pericardial hydatid cyst often manifests as chest pain by compression of the coronary arteries, dyspnea and palpitations [11].

Several complications can occur at a more advanced stage: severe rhythm disorders, heart failure, mitral stenosis, mitral failure, acute coronary syndrome, atrioventricular conduction disorders, tamponade and sudden death [11-13]. Our patient presented a heart failure with signs of pre-tamponade due to the crushing of the right ventricle by the cyst. The diagnosis of cardio-pericardial hydatic cyst is mainly based on medical imaging. Laboratory data is often poor. Hyper eosinophilia was found in only 20-30% of cases in the invasion or rupture phase of the cyst [5, 14]. Serodiagnosis is only positive in viable cysts. Our patient presented an inactive and mummified former hydatic cyst.

Trans Thoracic echocardiography is the first-line examination for the diagnosis of cardiac hydatidosis specifying its location, appearance and reports [5, 9-15]. Transesophageal echocardiography allows a more detailed analysis of the contents of the cyst and permit to search other rare locations, particularly atrial and at the level of the large vessels [5, 16]. The CT and magnetic resonance imaging (MRI) allow a more precise topographical and loco-regional analysis, and also the search for other locations of hydatid disease [17-19]. Once the diagnosis of cardiac echinococcosis is made, treatment should be immediate to avoid the risk of compression, rupture and sudden death [20]. Surgery even for asymptomatic cysts is the treatment of choice as it allows complete healing [21, 22].

The vertical middle sternotomy is the first way because it permits to reach all the locations. The lateral thoracotomy in the 4th internal costal space can be performed in some locations. Superficial cysts can be resected with a beating heart, as it was performed for our patient. Resection under cardiopulmonary bypass has proven to be very useful for carrying out a complete myocardial and pericardial assessment [23]. Adding medical treatment with albendazole can reduce postoperative recurrences.

Conclusion

The pericardial hydatic cyst it's very rare. His diagnosis is based on medical imaging. Seen high risk of severe complications (cyst rupture and sudden death) even in asymptomatic patients, complete surgical removal of the cyst with or without extracorporeal circulation is the treatment of choice.

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