CASE REPORT

SIMULTANEOUS HYDATID CYSTS OF BOTH THE RIGHT ATRIUM AND RIGHT VENTRICLE

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Summary: Hydatid disease in both chambers of the heart is very rare. Mobile right atrial and right ventricular hydatid cysts were diagnosed incidentally in the etiologic work up for a transient ischemic attack in a 77-year-old man with a history of a hepatic hydatid cyst operation. Transthoracic echocardiography was very successful in the diagnosis of both hydatid cysts. Transesophagial echocardiography and computed tomography confirmed the diagnosis. Both right atrial and right ventricular hydatid cysts were removed under cardiopulmonary bypass to prevent morbidities and potentially fatal complications.

Key words: *Cardiac; Hydatid cyst*

Introduction

Echinococcosis is caused by echinococcus granulosis eggs ingested by human beings and thus passing to the portal circulation and reaching the liver and lungs. Other organs, such as the spleen, kidneys, brain, bones or heart, are rarely infested with parasites. Cardiac location is extremely rare (less than 2 %) (3, 8). This disease is common in sheep and cattle raising countries. Eosinophilia is not constant and serologic tests (latex agglutination and immunoelectrophoresis) may be negative in hydatidosis.

Transthoracic echocardiography (TTE) is a method with well established diagnostic value in cardiac hydatid disease. The right atrial and right ventricular hydatid cysts were found by TTE in a 77-year-old man who had experienced an episode of a transient ischemic attack. Both cysts were removed successfully with surgery to prevent potentially life-threatening complications.

Case report

A 77-year-old man was referred to our clinic for right atrial and right ventricular hydatid cysts. There was no abnormality except for apical holosystolic murmur (grade I/VI) in physical examination. He had a history of liver hydatid cyst operation 17 years ago and was a smoker for 50 years. One month ago, he had been admitted to the neurology department because of right sided neurologic deficit lasting 12 hours. Colour doppler ultrosonography of the carotid arteries identified no lesion that could be an embolic source. At that time, magnetic resonance imaging (MRI) revealed a chronic infarction area in the left occipital lobe and a macroadenoma in the hypophysis. Although diffusion weighted (DW)-MRI identified no acute infarction in the brain, immediate therapy with intravenous heparine 1000 IU/hr and oral coumadine in the following day were begun. Hormonal profile revealed hypothyroidism with a high thyroid stimulating hormone level, normal growth hormone, prolactin, adrenocorticotropic hormone, and cortisole levels. Thyroid hormone replacement was begun after endocrinology consultation. The electrocardiogram showed atrial fibrillation and right bundle branch block. Slight cardiomegaly was present in his chest x-ray. The transthoracic echocardiography for embolic etiology revealed a mobile cyst (3.0x3.5 cm in size) in the right atrium and another large trabeculated partially calcified cyst located on the anterior wall of the right ventricle (4.0x5.0 cm in size) below the tricuspid valve and protruding into both the right atrium and ventricle. When considering the patient's past history, the cystic structure of the lesions reminded the echocardiographer of hydatid disease rather than solid lesions like myxoma or any other infective pathology. There was not any thrombus in the left atrium and ventricle. Mild mitral and aortic insufficiency was seen in colour doppler echocardiography. Transesophagial echocardiography (TEE) confirmed the cardiac cysts and revealed no additional pathology. Cardiac cysts were also demonstrated by computed tomography (CT) and no other cysts in the lungs, liver and great blood vessels were seen. Minimal plaque in

the left anterior descending coronary artery was seen in the angiography. Despite serologic tests for hydatid disease being negative, albendazole treatment 10 mg/kg/day was begun before surgery. During operation, a mobile cystic mass, 3.0x4.0x4.0 cm in size, attached with a thin ligament to the right atrial wall was easily extirpated (Fig. 1). Then cystopericystectomy was performed for the second cyst located on the anterior wall with the right ventricle bulging towards the right atrium, pushing the anterior and posterior leaflets of the tricuspid valve and protruding into the right ventricular cavity (Fig. 2). The covering tricuspid leaflets and the cyst wall were somewhat thickened and attached. The anterior and the posterior leaflets of the tricuspid valve had to be excised and resutured for the procedure. Histopathologic examination of the both lesions showed hydatid cysts. Albendazole treatment was continued postoperatively. The patient had an uneventful postoperative course and remained asymptomatic in a 20-month follow up.

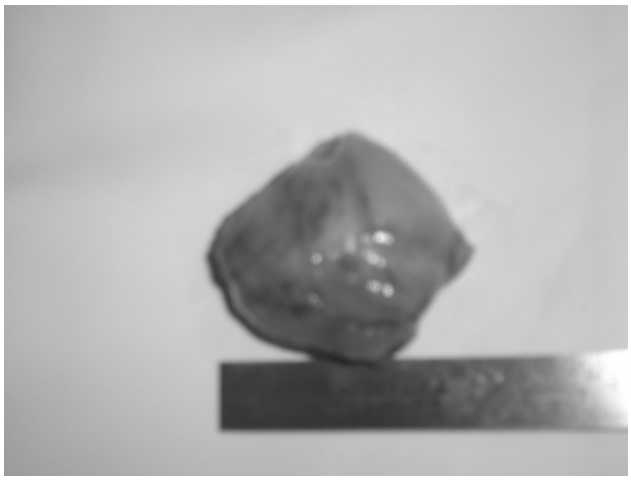

Fig. 1: Right atrial hydatid cyst after extirpation.

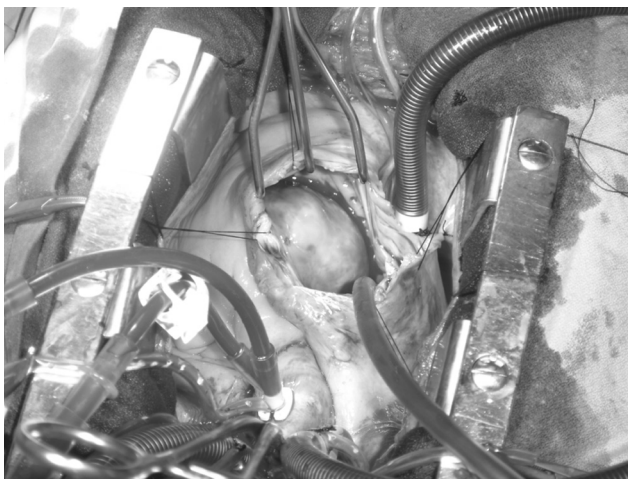

Fig. 2: Right ventricular hydatid cyst bulging into the right atrium pushing the tricuspid valve.

Discussion

The parasites rarely reache the other organs such as the spleen, kidneys, bones, and heart (8). Cardiac involvement caused by invasion through the coronary circulation accounts for only 0.5–2 % of ecchinococcosis cases (3). The right atrium and right ventricle are more rarely infested (8). Albendazole treatment is always indicated after surgery to prevent recurrences. It is also reserved for patients who are not eligible for cardiac surgery or for those who refuse surgery (7). TTE has been used for cardiac echinococcosis as an adequate method for diagnosis since 1977 (6). TEE has also been performed to see cysts which were too small to be detected by TTE. CT of the thorax and the whole abdomen and an MRI of the brain ruled out any other organ involvement.

Chest pain is the most common manifestation of cardiac hydatidosis. Most of the patients may stay asymptomatic for many years until severe complications develop. The complications develop with the rupture of the cyst into the one of the heart's chambers with allergic shock, cardiac tamponade with the rupture into the pericardial space or systemic and pulmonary embolism or arrhythmias causing sudden death. Atrioventricular block was also seen (7). When located in the left atrium, it may mimic myxoma, causing signs of pulmonary edema (1). Late recurrence was seen in only one of the 17 patients operated for cardiac hydatid cysts 68 months after the first operation, but there were also cases with early recurrence (2, 5). Kaplan et al had seen no early and late cardiac complications in the follow-up of seven patients surviving cardiac operation (one patient in this series died during operation because of a massive pulmonary embolism) due to hydatid cysts with intracavitary expansion (4). Because of the serious complications mentioned above, surgical excision of the cardiac hydatid cysts is the best treatment.

In our patient, hydatid cyst in the right atrium was very mobile and had a tendency to embolize and the other cystic lesion in the right ventricle was occupying the ventricular space. In this case, the disease was prone to two potential fatal complications, pulmonary embolism from the atrial mass and ventricular space occlusion from the right ventricular. Hepatic and pulmonary hydatid disease should raise the suspicion whether there is cardiac involvement. Transthoracic echocardiography, which is an easy and reliable diagnostic tool, should be performed routinely for these patients.

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