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Case report - Cardiac general

Is surgical therapy the only treatment of choice for cardiac echinococcossis with multiple organ involvement?

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Abstract

A 25-year-old male patient suffered from multi-organ hydatidosis including cardiac and bilateral pulmonary echinococcosis. Echocardiography revealed the hydatid cyst 20 × 35 mm in dimension located in the interventricular septum. The patient refused surgery; albendazole 400 mg/day was given orally and was continued for 24 months. The follow-up echocardiography 24 months later showed that the cyst showed regression 15 × 25 mm in dimension and demonstrated albendazole-induced echocardiographic changes. Medical treatment in hydatid disease might be recommended when the disease is extensive, the surgery is contraindicated or refused by the patient.

Keywords: Cardiac hydatid cyst; Multi-organ echinococcosis; Albendazole

1. Introduction

This article reports a case of a multi-organ echinococcosis with cardiac involvement located in interventricular septum and bilateral pulmonary hydatidosis and discusses the treatment of cysts medically with albendazole.

2. Case

A 25-year-old male patient suffered from multi-organ hydatidosis including cardiac and bilateral pulmonary echinococcosis with multiple cysts. The diagnosis of pulmonary hydatid disease had been made after the rupture of pulmonary hydatid cyst (HC). Although he had no cardiac symptom, cardiac involvement was controlled echocardiographically.

A cross sectional echocardiography (ECHO) showed a 20 × 35 mm cystic mass located at the interventricular septum of the heart, protruding to the right and left ventricular outflow tract but creating no pressure gradient (Fig. 1). The diagnosis was confirmed by a positive hemagglutination titer of 1:512 (normal <1:100) for echinococcus antibodies. Echinococcal immunoglobulin E was found positive.

This cardiac and also bilateral pulmonary HCs were demonstrated by thoracic CT and magnetic resonance imaging. There were four HCs which were located in the right middle lobe medial segment (22 × 20 mm), right lower lobe mediobasal and posterobasal segments (65 × 50 mm), left superior lingual segment (20 × 20 mm) and left lower lobe superior segment (15 × 15 mm). The ruptured HC in the right lower lobe mediobasal segment into the thoracic cavity caused echinococcic invasion and effusion of pleura.

Surgical excision of the cardiac HC was planned; but the patient refused surgery. Albendazole 400 mg/day was given orally in two divided doses a day. He has been followed with medical therapy together with ECHO control every 6-months. Medical treatment with albendazole (400 mg/day) was continued for 24 months without developing any cardiac symptom. Mild degree side effect occurred throughout the course of albendazole after 12 months of therapy. Hepatic enzymes activities were recorded and 1 month interruption required. After the interruption period the same regimen was restarted.

The cardiac and pulmonary hydatid disease did not progress during albendazole treatment, regression rate was measured echocardiographically. The follow-up ECHO 24 months later showed that the cardiac HC was the 15 × 25 mm in dimension. A color Doppler study showed that

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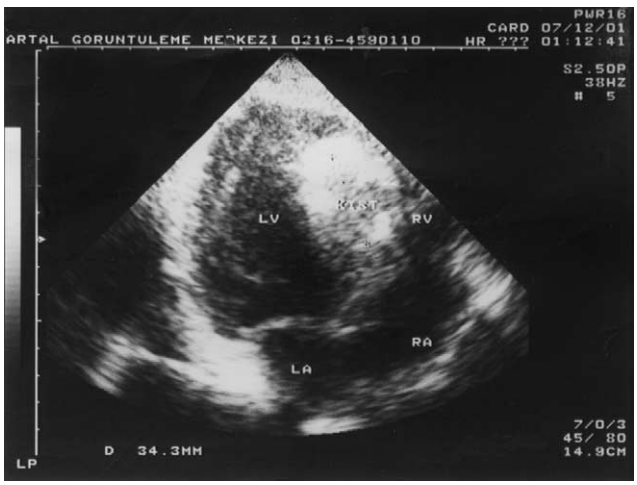

Fig. 1. Echocardiographic appearance of hydatic cyst before receiving albendazole therapy.

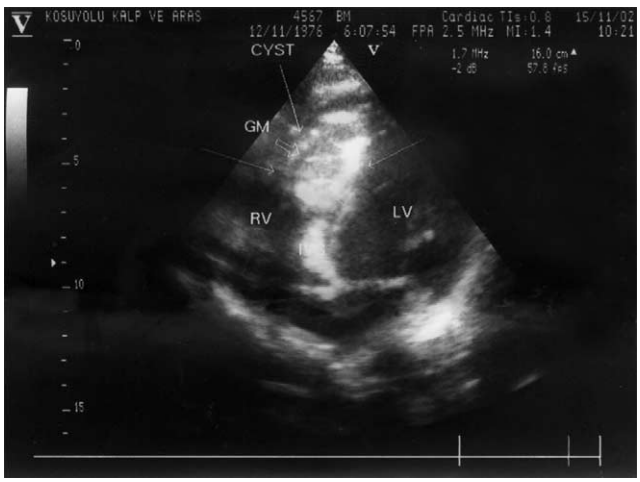

Fig. 2. Echocardiography view with degeneration of cystic membrane, deposition of calcium, increase in echogenic density after receiving albendazole therapy for 24 months. GM, germinative membrane.

the systolic flow-pattern in the left and right ventricular outflow tracts was laminar flow rather than turbulent flow. HC demonstrated structural disintegration and albendazole-induced echocardiographic changes as degeneration of cystic membrane, deposition of calcium, increase in echogenic density (Fig. 2). Pulmonary HCs shrunk and cystic cavity disappeared.

3. Discussion

HCs of the heart can result in serious consequences such as rupture into the circulation with drastic anaphylactic reaction, ischemic syndromes from compression of coronary arteries, conduction abnormalities from bundle compression, heart failure, systemic or pulmonary embolization [1,2].

Surgery is accepted as the primary treatment for HCs but the disease is progressive, if surgery is contraindicated or refused by the patient, medical therapy might be an alternative. Medical treatment also recommended small, totally calcified, asymptomatic HCs in elderly patients with negative serology for hydatid disease; no impedance of hemodynamics or cardiac blood supply considered an indication for follow-up only [3]. Özdemir published a successfully treated case with cardiac eccinococcosis who had complete heart block caused by HC compression [4].

The World Health Organization guidelines for the treatment of HC recommended that: for patients with operable disease, surgical resection of the parasitic lesion is the treatment of choice, followed by medical therapy for a limited time (minimum of 2 years), long-term medical therapy is indicated in inoperable disease or after incomplete resection of lesions as well as after transplantation [5].

Albendazole which is derived from benzimidazole has been used for the treatment of echinococcosis even when performing surgery. Albendazole is preferred due to its greater absorption from the GI tract and higher plasma levels. Therapeutic effect of benzimidazole derives favored albendazole [6]. It was reported that an initial regiment for cases of hepatic alveolar echinococcosis was recurrence-free in 78% of those treated with albendazole with an average observation time of 28 months [6].

An essential criterion was cyst size reduction as well as shape deformation. Development of echogenic foci and increase in density of cyst fluid were considered as a therapeutic effect. Changes in cyst wall such as thickening and detachment of the cyst membrane or membrane disorganization may also indicate response. Degenerative modification, partial destruction of germinal membrane, obliteration of the cystic cavity, increase in the ultrasound density, deposition of calcium and calcification were evidence of achievement of albendazole therapy and cystic inactivity. The most reliable criterion should be the complete disappearance of hydatid cyst.

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