CASE REPORT

Cardiac echinococcosis—a rare echocardiographic diagnosis

S B Siwach, V K Katyal, Jagdish

Abstract

A 30 year old female admitted for evaluation of left chest pain was suspected to have multiple cardiac hydatid cysts. The diagnosis was established by cross sectional echocardiography and computed tomography, supported by enzyme linked immunosorbent assay (ELISA) for echinococcosis. Medical therapy altered the echopattern of the cysts but failed to reduce cystic masses. Surgery was advocated but refused by the patient.

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Cardiac echinococcosis is rare (incidence 0.5-2%) even in countries where the disease is endemic.¹ The condition, however, is potentially lethal. Valvular dysfunction and electrocardiographic changes often occur as a result of direct involvement or displacement of valvular apparatus and the conduction system. Before the advent of echocardiography, clinical

diagnosis was extremely difficult. However, echocardiography is being increasingly recognised as a diagnostic investigation of choice.²⁻⁴ Cross sectional echocardiography images of hydatid cysts are essentially those of cystic masses with well defined walls. In a few cases "solid" mass appearance and multiloculated character may be found.³ Computerised tomography (CT) of the thorax can identify cysts; however, it produces images in only one anatomical plane limiting morphological analysis, and often fails to detect small lesions. We report a patient with intracardiac echinococcosis in which multiple cysts were found in various cardiac chambers.

Case report

A 30 year old female presented complaining of continuous and dull aching left sided chest pain for two months. She also had dry cough with occasional mucoid sputum, of 15 days' duration. Examination revealed mild anaemia. There was no lymphadenopathy, jaundice or neck vein engorgement. Chest examination revealed diminished breath sounds on the left base. There was no cardiomegaly, both heart sounds were normal but there was a grade III long systolic murmur in the tricuspid area. Abdominal and central nervous system examinations were unremarkable.

INVESTIGATIONS

Haemoglobin was 90 g/l, erythrocyte sedimentation rate was 85 mm in first hour, total eosinophilic cell count was $1.4 \times 10^9/l$. Enzyme linked immunosorbent assay (ELISA) was reactive for echinococcus and Casoni's test was positive. Chest radiography showed a homogeneous opacity occupying the lower half of the left chest cavity. An ECG revealed complete right bundle branch block. The echocardiography demonstrated a well defined large cystic mass (7×4.3 cm) within the interventricular septum which was bulging into the right ventricular cavity (fig). The cyst had a well defined wall and hypoechoic contents (hydatid sand) which shifted position on alteration of the posture of the patient. There was another cystic mass (1.2 cm diameter) inside the right ventricular cavity near its apex. A third doubtful small cystic shadow was seen attached to left atrial lateral wall near the

Postgraduate
Department of
Medicine, Cardiology
Division, Pt B D
Sharma, Postgraduate
Institute of Medical
Sciences, 6/9 J Medical
Enclave, Rohtak
124001 (Haryana),
India
S B Siwach
V K Katyal
Jagdish

Correspondence to:
Dr Siwach.

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Cross sectional echocardiogram showing a large cystic mass (c) in the interventricular septum (IVS) projecting into the right ventricle (RV). LV, left ventricle; MV, mitral valve; LA, left atrium; AO, aorta.

mitral valve. There was no pleural-pericardial effusion and there were no cysts elsewhere in the body. CT revealed a large cystic mass in the interventricular septum (7×4.7 cm) occupying the left hemithorax.

The patient was given albendazole orally (400 mg three times a day). She was examined serially and echocardiography was repeated every two weeks. After four weeks of therapy, the contents of the septal cyst became more solid and well defined, and shift of hydatid sand was better visualised on altering the patient's posture. The size of the cysts, however, did not change with medical therapy. Surgical excision was considered but the patient did not agree to surgery.

Discussion

Cardiac echinococcosis is one of the important differential diagnoses if multiple cardiac cysts are detected on cross sectional echocardiography.⁵ Polyvisceral involvement, if found, suggests the cardiac cysts to be echinococcus in nature. ELISA, if positive for hydatid antigens, is highly specific.⁶ Cardiac infestation can be asymptomatic or may present with clinical findings depending upon the size, location, and number of cysts. Rupture of the cysts although rare is potentially fatal, resulting in anaphylaxis, cardiac tamponade, and massive pulmonary embolisation.⁴

In the present patient, the multicystic cardiac involvement was detected without other visceral involvement. It did not produce overt cardiac dysfunction but there was right bundle branch block and tricuspid regurgitation that were attributed to a large septal cyst. Tricuspid incompetence is a result of displacement of the septal cusp of the tricuspid valve. Intramyocardial cysts are known to produce

obstruction, pressure gradient or murmur by displacement of cardiac structures.⁷ CT examination confirmed the echocardiography findings. It delineated large cysts and their relation with surrounding structures. Other cardiac abnormalities reported include low voltage graph and non-specific ST-T wave change on ECG, depending on location of cystic masses.¹ Two smaller cysts in the present case did not produce any effects.

Movement of cyst contents (hydatid sand) seen on changing the patient's posture, and progressive image modulation (thickening of contents) with medical therapy, which was observed in the present case, has been reported previously⁸ and considered to be characteristic of hydatid cysts. Surgical resection is the most accepted form of management.

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