SHORT CASES IN CARDIOLOGY

Rupture of a presumed hydatid cyst of the interventricular septum diagnosed by transoesophageal echocardiography

I Sabah, F Yalcin, T Okay

Department of
Cardiology, Acil
Yardim Hospital,
Balgat, Ankara, Turkey
I Sabah
F Yalcin

Cardiology
Department, Bayindir
Medical Center,
Balgat, Ankara, Turkey
T Okay

Correspondence to:
Dr Yalcin, Tomurcuk sok.
3/13 Aşagi Ayranci, Ankara
06540 Turkey.

Accepted for publication
29 October 1996

Cardiac echinococcosis is an infrequent disease and is seen in 0.2–3% of patients with echinococcal disease.¹ Transthoracic echocardiography has been used to diagnose and evaluate intracardiac echinococcosis.^{1,2} Septal involvement of the hydatid cyst is observed quite rarely and is always associated with various conduction disturbances, as well as sudden death from arrhythmias.³ Cardiac involvement with echinococcosis may result in other potentially lethal complications.⁴ There have been many case reports of cardiac cysts; however, there have been none demonstrating a ruptured hydatid cyst by transthoracic echocardiography and confirmed by transoesophageal echocardiography.

Case report

A 33 year old woman presented to the emergency room with chest pain of sudden onset that had lasted six hours and became progressively intense with time; she was transferred to the cardiology clinic. In addition to chest pain, she complained of periodic palpitations and dyspnoea on exertion. Blood pressure was 90/40 mm Hg and pulse rate 123 beats/min. Cardiac auscultation revealed tachycardic first and second heart sounds. There was a grade 4/6 holosystolic and 3/6 decrescendo diastolic murmur, most prominent at the left sternal edge.

Electrocardiography showed sinus tachycardia and incomplete left bundle branch block. Chest radiography showed normal cardiothoracic index. She tested positive for specific echinococcus antibodies.

Cross sectional echocardiography showed a cardiac cyst in the mediobasal portion of the interventricular septum, but the picture quality was too poor to assess the cyst borders and define its relation with other intracardiac structures. Transoesophageal echocardiography confirmed the presence of a hydatid cyst measuring 2.72×3.54 cm (fig 1) that limited anterior mitral valve leaflet motion. Colour flow Doppler mapping demonstrated that the cyst was in communication with the ascending aorta. Blood flowed into the ascending aorta from the cyst during diastole (fig 2) and back into the cavity of the cyst from the aorta during systole. There was a clear increase in size of the cyst during systole. A second cyst was found in the right atrium.

Because the patient was symptomatic, the cyst had ruptured, and the cyst cavity communicated with the aorta, it was decided to proceed with resection. Unfortunately, the patient died suddenly as a result of malignant ventricular tachycardia during preparation for surgery. Her family did not grant permission for postmortem examination, nor was there any time to perform ELISA to measure antibody levels.

Discussion

A cardiac cyst localised to the mediobasal portion of the interventricular septum seen with cross sectional echocardiography has been reported previously,² and a cyst in the right atrium has been demonstrated using transoesophageal echocardiography.⁵ Cyst rupture is a common complication of cardiac echinococcosis, mostly in to the left ventricle, and is often lethal.⁶ Cardiac cysts can mimic various cardiac diseases even in the case of septal localisation, and often the first symptoms are related to cyst rupture.³

Although the present patient complained of dyspnoea and palpitations, she had not previously sought medical attention. The patient was in critical condition when she was admitted so a diagnostic evaluation was

Figure 1 Transoesophageal echocardiography showing a hydatid cyst (2.72×3.54 cm).

Figure 2 Colour flow Doppler showing blood flow back into the aorta from the cyst during diastole.

performed quickly and the auscultation findings were in agreement with colour flow Doppler mapping.

Rupture is a lethal complication of hydatid cyst, especially if not acted on quickly following the initial symptoms, or if the patient presents late. Sudden death caused by various conduction disturbances is observed even in unruptured septal cysts leading to fatal arrhythmias.^{3,4} Di Bello and Menendez⁶ reported that intracardiac rupture occurred in 104 of 269 cases of cardiac echinococcosis; 88% in the right ventricle, and 37% in the left ventricle. In the same article, 29% of the cases with ruptured hydatid cyst were associated with sudden death.⁶

This report describes the first documentation by transoesophageal echocardiography of a rare complication of a relatively common disease in developing countries. The ability to perform transthoracic echocardiography immediately will contribute to quick diagnosis in patients with ruptured hydatid cyst, especially in the differential diagnosis of the patients with chest pain. Transoesophageal echocardiography additionally shows details of any cyst rupture. The present patient's death was perhaps caused by low cardiac output related to the cyst rupture, limitation of anterior mitral valve excursion by the cyst mass, or possible anaphylactic reaction after the rupture.

Patients with hydatid cysts need to be evaluated and treated quickly to prevent sudden death, especially if rupture is documented. Despite adequate medical facilities, a serious problem in developing countries is that patients do not present until late in to the disease.

We thank Dr Richard Grimm (Cardiac Imaging Cleveland Clinic Foundation) for reviewing during manuscript preparation. This case was presented at the third international echocardiography today and tomorrow symposium in Ashford, Kent, UK in April 1996.

- 1 Bayezid O, Ocal A, Isik O, *et al.* A case of cardiac hydatid cyst localized on the interventricular septum and causing pulmonary emboli. *J Cardiovasc Surg* 1991;32:324-6.
- 2 Papagna D, Aloe MA, Spagnolo S. Cardiopulmonary echinococcosis: a report of a clinical case. *G Ital Cardiol* 1991;21:1129-33.
- 3 Gianmaria O, Massimo V, Ruggero DP, *et al.* Restoration of atrioventricular conduction after surgical removal of a hydatid cyst of the interventricular septum. *J Thorac Cardiovasc Surg* 1987;93:144-7.
- 4 Perez Gomez F, Duran H, Tamames S, *et al.* Cardiac echinococcosis: clinical picture and complications. *Br Heart J* 1973;35:1326-31.
- 5 Ambrosi P, Mesana T, Habib G. Right intra-atrial extension of hydatid cyst mimicking cardiac thrombosis. Apropos of a case. *Arch Mal Coeur Vais* 1992;85:909-12.
- 6 Di Bello R, Menendez BS. Intracardiac rupture of hydatid cysts of the heart. *Circulation* 1963;27:366-74.