

The interventricular septal giant hydatid cyst caused by biventricular outflow tract obstruction

Murat Guvener, MD, Omer F. Dogan, MD,
Enver Atalar, MD, Mustafa Yilmaz, MD,
Metin Demircin, MD.

Interventricular cardiac hydatid cyst is an uncommon clinical condition, accounting for <2% of all hydatid disease.¹ We present a female patient with cardiac cyst hydatid caused by bradycardia. The cyst was successfully removed using extracorporeal circulation.

A 22-year-old woman, was referred to our clinic with bradycardia and angina pectoris. On auscultation, there was a systolic murmur at the mesocardiac area. On electrocardiography, 2 degree of atrioventricular block was detected. Transthoracic echocardiography (TTE) revealed a 30-35 mm round, cyst-like structure that originated from the interventricular septum, decreasing the right and the left ventricular volume and obstructing the biventricular outflow tract (**Figure 1**). The abdominal and brain computed tomography scan showed no second hydatid cyst focus. For the removal of cardiac hydatid cyst, the patient underwent operation. Standard cardiopulmonary bypass was initiated under mild hypothermia and the heart was arrested with cold crystalloid cardioplegia. We reached the cyst by means of an incision through the upper part of the right ventricular outflow tract and septotomy, then sterilized it by injecting hypertonic saline solution into the cystic cavity. After aspirating the cystic material, we enucleated the mass. She weaned from cardiopulmonary bypass uneventfully. The cystic material was examined histopathologically, which confirmed the surgical observation of hydatid cyst. A third degree of atrioventricular block was recorded postoperatively and transvenous permanent pacemaker was implanted by the interventional cardiology unit. The postoperative period was uneventful, and the patient was discharged from the hospital. We prescribed albendazole to prevent recurrence. Unfortunately, after one year postoperative, she was admitted to our emergency department with vertigo, vomiting and muscle weakness. Computerized tomography examination revealed a cerebral hydatid cyst in the brain and she was operated on for cerebral and cerebellar multifocal hydatid cyst. She recovered after the surgery and discharged home. She is being well now and the clinical follow-up is uneventfully.

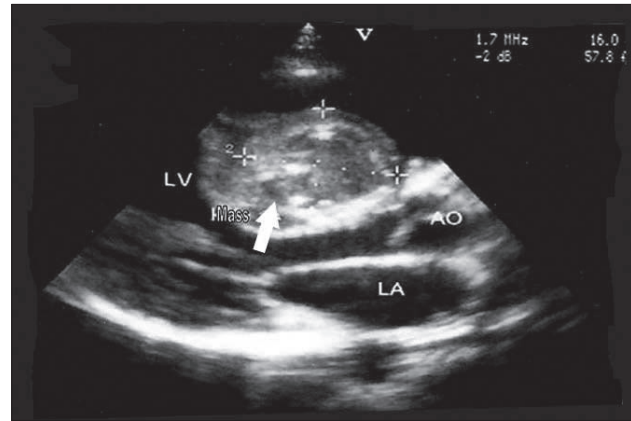


Figure 1 - The echocardiography examination shows obstruction of the left ventricular (LV) and the right ventricular outflow tract due to large hydatid cyst (white arrow) located in the interventricular septum.

Echinococcosis is a tissue infestation. In human beings, it is caused by the larva of *Echinococcus granulosus*.² Most often, dogs are the definitive host; however, the people is a common accidental host. When the infestation is completed, larvae usually reach the myocardium through the coronary circulation, although the intestinal lymphatic vessels, the upper and lower vena cavae may also be pathways. Cardiac echinococcosis is not frequent, accounting for only 0.5-2% of all hydatid infestations.^{2,3} Involvement of the interventricular septum is reported in 5-9% of cardiac cases. When cardiac echinococcus involve the interventricular septum it can cause symptoms related to compression of the conduction pathway and obstruction of the right or left ventricular outflow tract as shown in our case⁴ Clinical presentation of a cardiac hydatid cyst varies widely and its diagnosis is very difficult. When they are huge or exist in large numbers, they may lead to symptoms and signs similar to the mass of a cardiac tumor. Other cardiovascular manifestations of cardiac echinococcosis are valvular dysfunction, pulmonary⁵ or systemic embolism.

We believe that beside the serial transthoracic cardiac echocardiographic examination, brain CT or magnetic resonance imaging may be performed routinely for the early diagnosis of cranial hydatid cyst in the clinical follow-up after the cardiac operation.

Received 26th September 2005. Accepted for publication in final form 4th January 2006.

From the Department of Cardiovascular Surgery (Guvener, Dogan, Yilmaz, Demircin) and the Department of Cardiology (Atalar), Medical Faculty, Hacettepe University, Ankara, Turkey. Address correspondence and reprint requests to: Dr. Omer F. Dogan, Birlik Mahallesi 59.sokak, 9/1, 06670, Çankaya, Ankara, Turkey. Tel. +90 (312) 4956898. Fax. +90 (312) 3117377. E-mail: ofdogan@hacettepe.edu.tr

Clinical Notes

References

1. Kammoun S, Frikha I, Fourati K, Fendri S, Benyoussef S, Sahnoun Y, et al. Hydatid cyst of the heart located in the interventricular septum. *Can J Cardiol* 2000; 16: 921-924.
2. Matossian RM, Rickard MD, Smyth JD. Hydatidosis: a global problem of increasing importance. *Bull World Health Organ* 1977; 55: 499-507.
3. De Paulis R, Seddio F, Colagrande L, Polisca P, Chiariello L. Cardiac echinococcosis causing coronary artery disease. *Ann Thorac Surg* 1999; 67: 1791-1793.
4. Eren EE, Aykut S, Kayihan A, Aydogan H, Dagsali S. Echinococcal cyst of the interventricular septum with right ventricular protrusion. *Tex Heart Inst J* 1989; 16: 292-299.
5. Pasaoglu I, Dogan R, Hazan E, Oram A, Bozer AY. Right ventricular hydatid cyst causing recurrent pulmonary emboli. *Eur J Cardiothorac Surg* 1992; 6: 161-163.