A case of multivesicular cardiac hydatid cyst with cerebral involvement

Serebral tutulumlu multiveziküler kardiyak kist hidatik: Olgu sunumu

Mustafa Göz, Ömer Çakır, Nihal Kılınç,[1] Mehmet Nesimi Eren

Departments of Cardiovascular Surgery and [1]Pathology, Medical Faculty of Dicle University, Diyarbakır

Cardiac hydatid cyst is rarely encountered. A 24-year-old man was admitted with right hemiparesis. Cranial magnetic resonance imaging showed well-defined, spherical, hypodense cystic lesions in the left parietal, occipital, frontal, cerebellar, and ventricular regions. Echocardiography revealed a 3.6 x 3.0-mm cystic lesion in the left ventricle and mild-moderate mitral regurgitation. The patient had a two-year history of surgery for a cerebral hydatid cyst, at which time cardiac examination had not been performed. First, the cerebral hydatid cyst was removed, and, 15 days later, cardiac surgery with a left atriotomy was performed to remove the cyst and its contents. The patient recovered without complications and was discharged with albendazole prophylaxis. Histopathologic examination confirmed the hydatid cyst. Echocardiography performed 15 months after surgery showed no recurrences.

Key words: Echinococcosis/diagnosis/surgery; echocardiography; heart diseases/parasitology.

Kardiyak kist hidatik nadir karşılaşılan bir hastalıktır. Yirmi dört yaşında erkek hasta sağ hemiparezi yakınmasıyla yatırıldı. Kraniyal manyetik rezonans görüntülemede sol parietal, oksipital, frontal ve ventriküler alanlarda iyi tanımlanmış, sferik, hipodens kistik lezyonlar görüldü. Ekokardiyografide sol ventrikülde 3.6 x 3.0 mm büyüklüğünde kistik lezyon ve hafif-orta derecede mitral yetersizlik saptandı. Hastanın iki yıl önce serebral kist hidatik nedeniyle ameliyat geçirdiği; ancak, bu dönemde kardiyak incelemenin yapılmadığı öğrenildi. Tedavi için önce serebral kist, 15 gün sonra ise sol atriyotomi ile yapılan cerrahi girişimle kardiyak kist ve içeriği çıkarıldı. Hasta herhangi bir komplikasyon olmadan iyileşti ve albendazol profilaksisi ile taburcu edildi. Histopatolojik inceleme kist hidatik tanısını doğruladı. Cerrahiden 15 ay sonra yapılan ekokardiyografik incelemede nüks bulgusuna rastlanmadı.

Anahtar sözcükler: Ekinokok/tanı/cerrahi; ekokardiyografi; kalp hastalıkları/parasitoloji.

Cardiac hydatid cyst is a rare condition. It is observed in 0.5% to 2% of all hydatid cyst cases. Cardiac involvement can cause fatal complications. Cardiac hydatid cysts may cause emboli when ruptured.[1,2]

We presented a case of left ventricular hydatid cyst in a patient who had undergone a previous operation for a cerebral hydatid cyst and was found to have recurrent cerebral involvement.

CASE REPORT

A 24-year-old man was admitted to the neurosurgery department of our hospital with a complaint of right hemiparesis. Cranial magnetic resonance imaging showed well-defined, spherical, hypodense cystic lesions in the left parietal, occipital, frontal, cerebellar, and ventricular regions (Fig. 1a, b). Echocardiography revealed a 3.6x3.0-mm cystic lesion in the left ventricle, below the posterior leaflet of the mitral valve between the papillary muscle and chorda tendineae; there was mild-moderate mitral regurgitation (Fig. 2). No pathological findings were observed in electrocardiography, chest X-ray, chest-abdominal computed tomography, and abdominal ultrasonography. Routine blood test and serological examination were normal. The patient had a history of surgical removal of a cerebral hydatid cyst two years before. However, it was determined that cardiac examination had not been performed at that time.

Initially, the cerebral hydatid cyst was removed, and, 15 days later, cardiac surgery was performed. A left atriotomy was performed with an incision posterior to the interatrial groove. Below the posterior leaflet of the mitral valve, a large multivesicular hydatid cyst was observed, attached to the anterolateral papillary

Received: 27 Aralık 2005 *Accepted*: 22 Şubat 2006

Correspondence: Dr. Mustafa Göz. Dicle Üniversitesi Tıp Fakültesi, Kalp ve Damar Cerrahisi Anabilim Dalı, 21280 Diyarbakır.
Tel: 0414 - 341 06 62 e-mail: mustafagoz@dicle.edu.tr

muscle and chordae tendineae. The hydatid cyst was covered with wet sponges to prevent embolism and inoculation of free scolices to the surrounding cardiac structures. Surgical treatment included puncture and aspiration of the cyst content following sterilization with hypertonic saline solution. The germinative membrane was removed along with excision of the cyst wall (Fig. 3). Capitonnage was not performed for closure of the cavity due to increased mitral regurgitation. The patient recovered without complications and was discharged with albendazole (400 mg/day) prophylaxis. Histopathologic examination showed findings of hydatid cyst with homogeneous eosinophilic stained wall and scolices (Fig. 4). Echocardiography performed in the postoperative fifteenth month showed no recurrences.

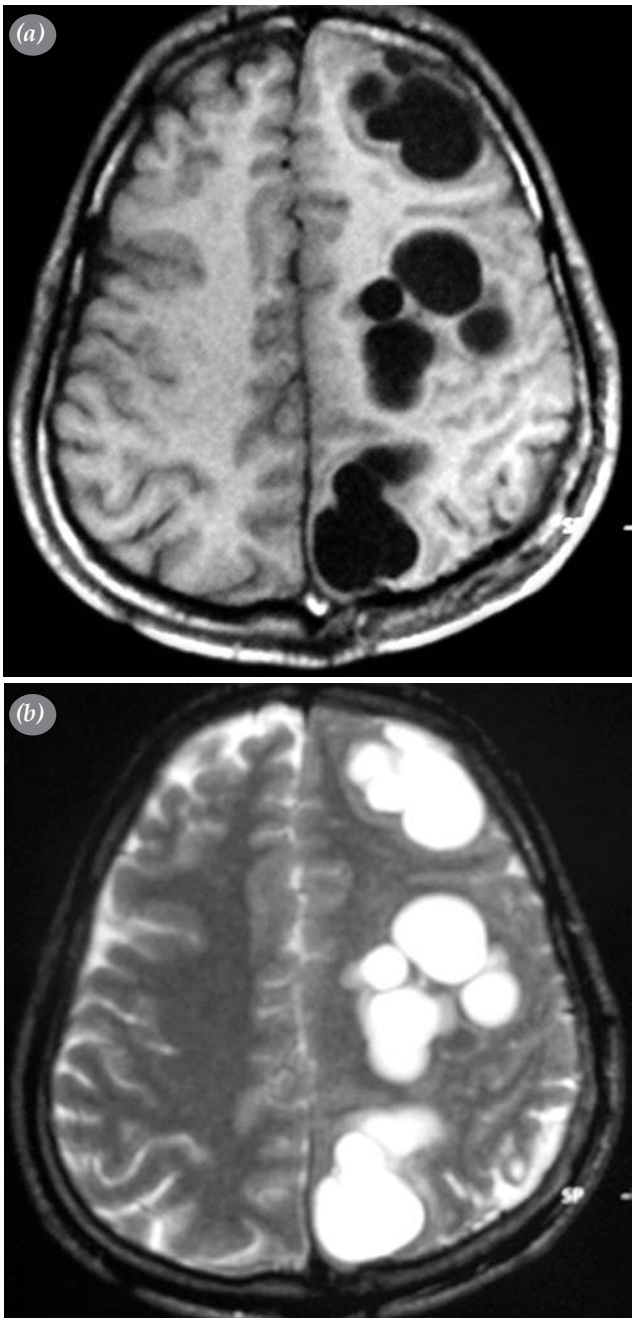

Fig. 1. Magnetic resonance images demonstrating intracranial lesions of fluid density. **(a)** Noncontrast axial T_1-weighted image of the brain shows well-defined, spherical, hypointense cystic lesions. **(b)** Axial T_2-weighted image shows well-defined homogeneously hyperintense cysts.

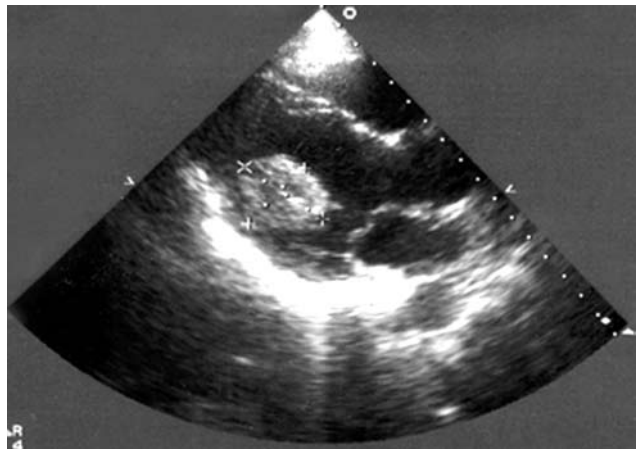

Fig. 2. Echocardiographic image showing a hydatid cyst in the left ventricle.

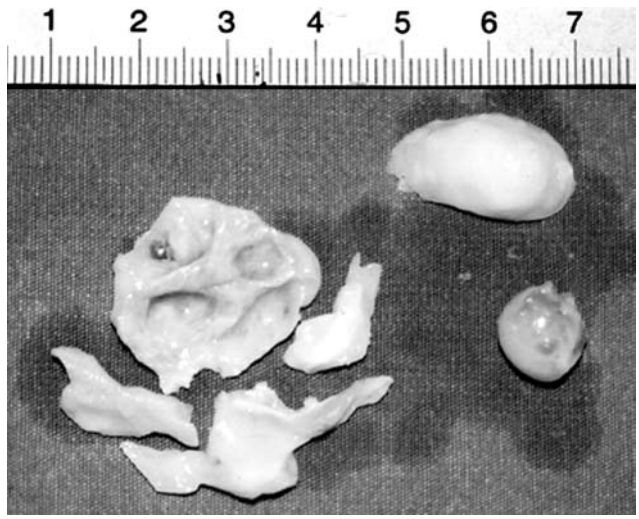

Fig. 3. Surgical specimen.

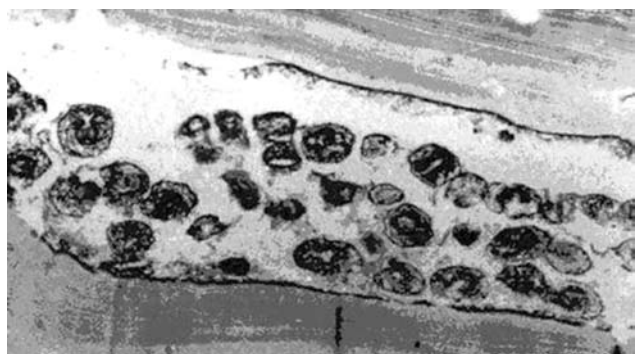

Fig. 4. Homogeneous eosinophilic stained wall and scolices.

DISCUSSION

Cardiac hydatid cyst is rarely encountered (0.5-2.0%). The most frequent localization of the hydatid cyst in the heart is the wall of the left ventricle. Ben-Ismail et al.[3] showed that the organism was most frequently located in the left ventricle (60%). Less frequently, it is found in the right ventricle (10%), pericardium (7%), pulmonary artery (6%), or the left atrial appendix (6%). In our case, the cyst was in the left ventricle.

Presenting symptoms of cardiac hydatid disease vary depending on the localization of the cyst, the extent of its mass effect, and viability of protoscoleces. Hydatid cysts can result in serious consequences, such as rupture into the circulation with a drastic anaphylactic reaction, damage to the atrioventricular conduction system or to the cardiac valves, ischemic syndromes from compression of coronary arteries, or pseudoischemic electrocardiographic changes, and systemic or pulmonary embolization.[4-6]

Echocardiography remains the most reliable test in the diagnosis of cardiac involvement and location of cysts within the cardiovascular system. In our case, cardiac involvement was not investigated by echocardiography in prior cerebral operation, resulting in a two-year delay in the detection of the cardiac hydatid cyst. Thus, cardiac involvement must be investigated by echocardiography in cerebral hydatid cysts.[4-7]

The treatment of cardiac hydatid cysts is surgical. Pericardial and epicardial cysts may be resected directly. However, intracardiac cysts require cardiopulmonary by-pass.[8,9] Despite successful results reported with mebendazole and albendazole, surgical therapy is the most favorable method in cardiac hydatid cysts since medical treatment is not safe for rupture and embolization. Some authors advocate the use of albendazole before surgery as supportive therapy to decrease postoperative recurrences.[10] In our case, we used albendazole after cardiac surgery. The patient remained asymptomatic without any echocardiographic sign of recurrence after 15 months postoperatively.

In conclusion, cardiac hydatid cyst should be kept in mind in cerebral hydatidosis and cardiac involvement must be investigated by echocardiography.

REFERENCES

1. Bayezid O, Ocal A, Işik O, Okay T, Yakut C. A case of cardiac hydatid cyst localized on the interventricular septum and causing pulmonary emboli. J Cardiovasc Surg 1991;32:324-6.
2. Maroto LC, Carrascal Y, Lopez MJ, Forteza A, Perez A, Zavanella C. Hydatid cyst of the interventricular septum in a 3.5-year-old child. Ann Thorac Surg 1998;66:2110-1.
3. Ben-Ismail M, Fourati M, Bousnina A, Zouari F, Lacronique J. Hydatid cyst of the heart. Apropos of 9 cases. Arch Mal Coeur Vaiss 1977;70:119-27. [Abstract]
4. Miralles A, Bracamonte L, Pavie A, Bors V, Rabago G, Gandjbakhch I, et al. Cardiac echinococcosis. Surgical treatment and results. J Thorac Cardiovasc Surg 1994;107: 184-90.
5. Erentug V, Bozbuga N, Kirali K, Mataraci I, Kaymaz C, Balkanay M, et al. Cardiac hydatid cysts: surgical treatment and results. J Card Surg 2004;19:358-60.
6. Lioulias AG, Kokotsakis JN, Foroulis CN, Skouteli ET. Images in cardiovascular medicine. Multiple cardiac hydatid cysts: consistency of echocardiographic and surgical findings. Tex Heart Inst J 2002;29:226-7.
7. Mansuroglu D, Omeroglu SN, Akdemir R, Omeroglu A, Uzun K, Ipek G, et al. Right atrial hydatid cyst prolapsing into the tricuspid valve. Tex Heart Inst J 2004;31:452-3.
8. Çörtelekoğlu AT, Beşirli K, Yüceyar L, Bozkurt K, Kaynak K, Tüzün H ve ark. Atipik yerleşimli kist hidatik. Türk Göğüs Kalp Damar Cer Derg 2003;11:195-7.
9. Keçeligil HT, Kolbakır F, Kalaç R, Erk MK. Bir kardiyak kist hidatik olgusu ve cerrahi tedavisi. Türk Göğüs Kalp Damar Cer Derg 1995;3:48-50.
10. Kardaras F, Kardara D, Tselikos D, Tsoukas A, Exadactylos N, Anagnostopoulou M, et al. Fifteen year surveillance of echinococcal heart disease from a referral hospital in Greece. Eur Heart J 1996;17:1265-70.