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Case Report / Olgu Sunumu

Catastrophic embolism of a suddenly ruptured isolated cardiac cyst hydatid: An unusual case report

Aniden rüptüre izole kardiyak kist hidatidinin katastrofik embolisi: Olağandışı bir olgu sunumu

Mehmet Özbek[1], Muhammed Demir[1], Mehmet Karaçalılar[2], Adem Aktan[3]

Institution where the research was done:
Dicle University Faculty of Medicine, Diyarbakır, Türkiye

Author Affiliations:
[1]Department of Cardiology, Dicle University Faculty of Medicine, Diyarbakır, Türkiye
[2]Cardiovascular Surgery, Dicle University Faculty of Medicine, Diyarbakır, Türkiye
[3]Department of Cardiology, Mardin State Hospital, Diyarbakır, Türkiye

ABSTRACT

Hydatid cysts can be located in any organ or tissue system. Cardiac hydatid cyst is a rare, but fatal pathology. A 21-year-old male Syrian refugee patient with no previous known medical conditions was admitted to the hospital for chest pain and shortness of breath. He had increasing leg pain for 12 hours. Hydatid cyst rupture was detected on echocardiography. The peripheral artery thrombus and hydatid cyst membrane were removed with the embolectomy. The patient had renal and cranial infarctions. He underwent fasciotomy due to compartment syndrome. In conclusion, delayed diagnosis and treatment of cardiac hydatid cysts may result in a poor prognosis associated with the risk of rupture and is responsible for the spread of infection throughout the body as a result of the rupture. Even if there is an early diagnosis, surgical treatment supported by medical treatment is recommended very early.

Keywords: Cardiac hydatid cyst, echocardiography, embolectomy.

ÖZ

Hidatik kistler herhangi bir organ veya doku sisteminde yer alabilir. Kardiyak kist hidatik nadir, fakat ölümcül bir patolojidir. Bilinen bir tıbbi sorunu olmayan 21 yaşında Suriyeli mülteci erkek hasta göğüs ağrısı ve nefes darlığı şikayetiyle hastaneye başvurdu. On iki saattir artan bacak ağrısı vardı. Ekokardiyografide kist hidatik rüptürü tespit edildi. Embolektomi ile periferik arter trombüsü ve kist hidatik membranı çıkarıldı. Hasta renal ve kraniyal enfarktüs geçirdi. Kompartman sendromu nedeniyle fasyotomi yapıldı. Sonuç olarak kardiyak kist hidatiğin gecikmiş tanı ve tedavisi, rüptür riski ile ilişkili kötü bir prognoza neden olabilir ve rüptür sonucu enfeksiyonun vücuda yayılmasından sorumludur. Erken tanı konsa dahi çok erken dönemde medikal tedavi destekli cerrahi tedavi önerilmektedir.

Anahtar sözcükler: Kardiyak kist hidatik, ekokardiyografi, embolektomi.

Hydatid cysts that involve any organ or tissue system in the body under unhealthy living conditions continue to be an important health problem. These cysts are transmitted to humans through food contaminated with parasite eggs. Cardiac involvement with hydatid cyst (CHC) is a rare but fatal pathology.

In a retrospective analysis from Anatolia, the most common location of hydatid cyst was the left ventricle (46.7%), followed by an interventricular septum (19.3%), right ventricle (21%), right atrium (9.7%), left atrium (1.6%) and Valsalva sinus (1.6%).[1] Remarkably, 61% of the patients had isolated heart involvement in this study.

Unless the disease recurs or becomes inoperable, patients with heart hydatid disease should undergo surgery to prevent life-threatening complications such as cyst rupture, anaphylactic shock, tamponade, pulmonary, intracerebral, or peripheral artery

Corresponding author: Mehmet Özbek.
E-mail: dr.mehmetozbek@hotmail.com
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embolism, acute coronary syndrome, arrhythmias, and sepsis. The effectiveness of alternative medical treatments has not been fully established yet.

In this article, we present an unusual case of catastrophic embolism of a suddenly isolated CCH located in the interventricular septum showing wide-area effects.

CASE REPORT

A 21-year-old male Syrian refugee, without any known medical problem, was admitted to the hospital with chest pain and shortness of breath. On physical examination, there was no fever, hemodynamic findings, and cardiopulmonary auscultation was normal. There were no acute or chronic abnormalities on electrocardiography. The troponin level was normal. Posteroanterior X-ray imaging did not show any lung parenchymal pathology. Heart shadow was normal. Transthoracic echocardiography revealed a large cyst in the basal intraventricular septum. The membrane on the left ventricular side was thinner (Figure 1a). Abdominal ultrasonography was performed to investigate hydatid cyst and other organ involvement revealed normal findings. An appointment was made for computed tomography (CT) to be taken after the hospitalization proceduresThe albendazole treatment was started immediately and he was scheduled for the surgical procedure after the insurance procedures were provided.

Two days later, in the morning, the patient called us with the complaint of leg pain that increased for 12 h. The patient was advised to apply to our health center and was taken to the intensive care unit 4 h later.

The patient's left peripheral pulse was not palpable, while the right peripheral pulse showed a weak pulsation. Bedside echocardiography of the patient revealed rupture of the CHC (Figure 1b).

Contrast-enhanced CT revealed renal infarction and occluded left femoral artery, and the right femoral artery was almost completely clogged. Left thalamic infarction was detected in the cranial CT of the patient who suffered from a headache. However, anticoagulant initiation was considered sufficient for these infarcts.

Thrombus and hydatid cyst membranes were removed with surgical femoral embolectomy (Figure 3).

An improvement was observed in the pulses after embolectomy with a slight improvement in leg pain. Compartment syndrome was considered in the patient who still had pain after 12 h of follow-up. Fasciotomy was applied to the patient. After fasciotomy, there was a significant decrease in leg pain.

The patient did not develop signs of sepsis, possibly due to the early use of albendazole. There was no amputation requiring limb loss and acute renal failure did not develop. Early surgery was not considered based on the patient's initial findings. Cardiac surgery was performed on Day 31 after cyst rupture. Images of the patient during open heart surgery were taken (Figure 4).

After the procedure, a complete atrioventricular block was observed, as expected. A dual-chamber

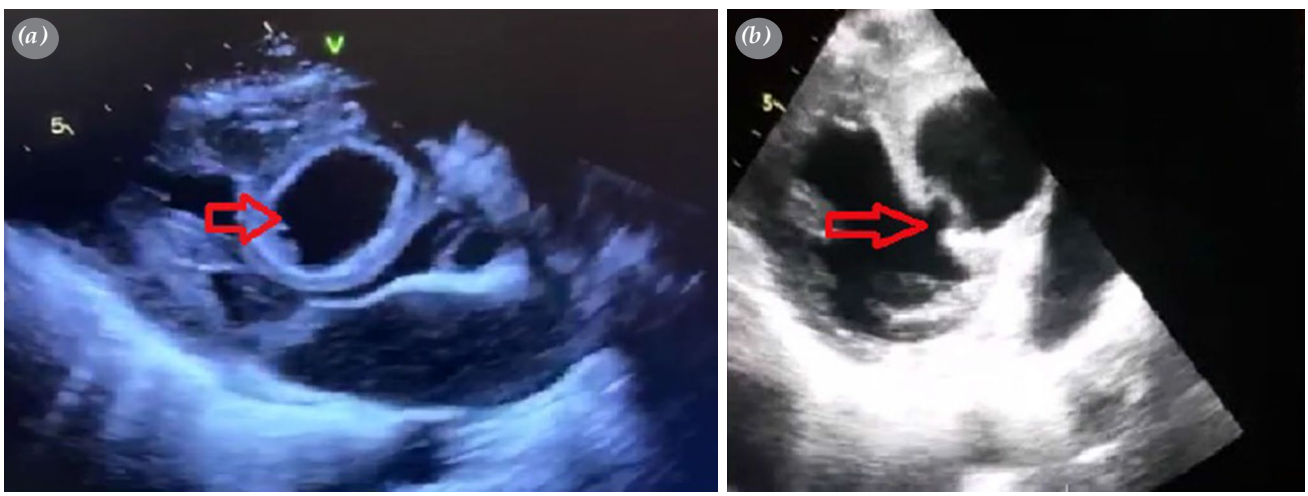

Figure 1. (a) Diagnosis of cardiac hydatid cyst by echocardiography. **(b)** Demonstration of ruptured cardiac hydatid cyst by bedside echocardiography.

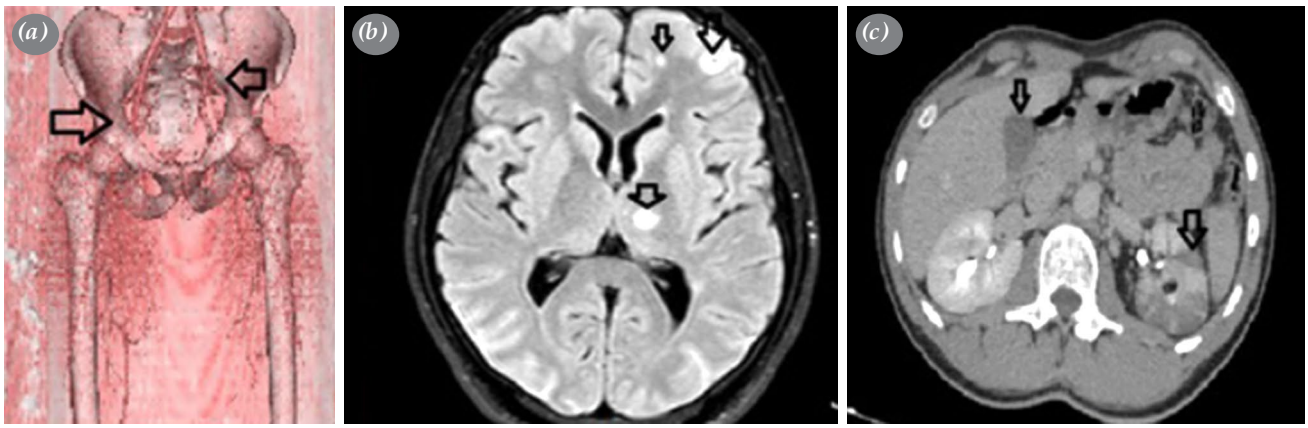

Figure 2. (a) Occluded femoral arteries. **(b)** Cranial infarction. **(c)** Renal infarction.

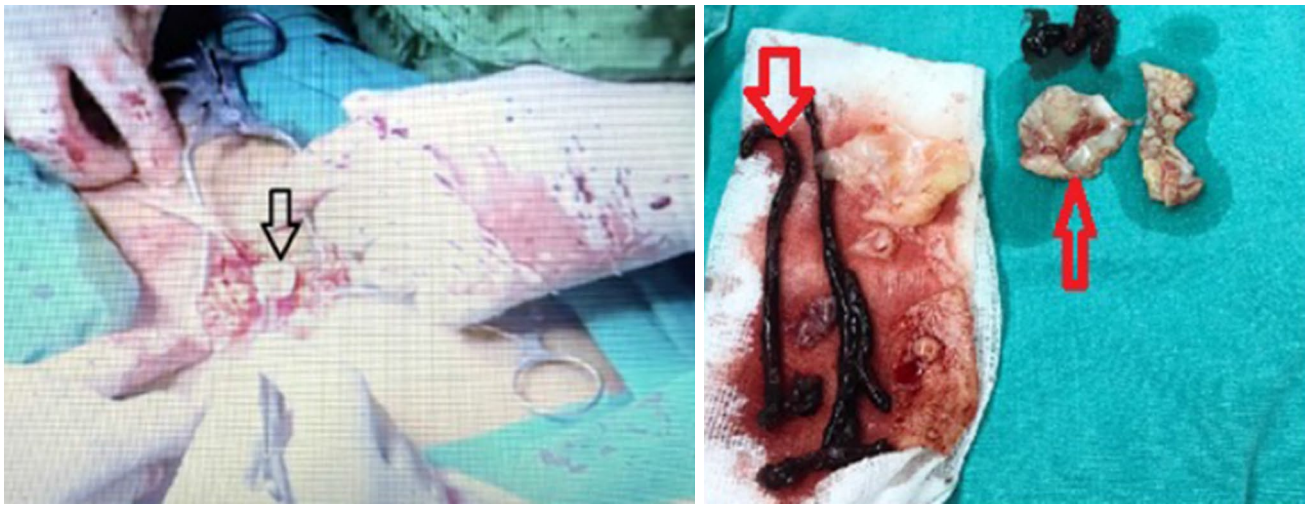

Figure 3. Thrombus and hydatid cyst membrane removed with the Fogarty procedure.

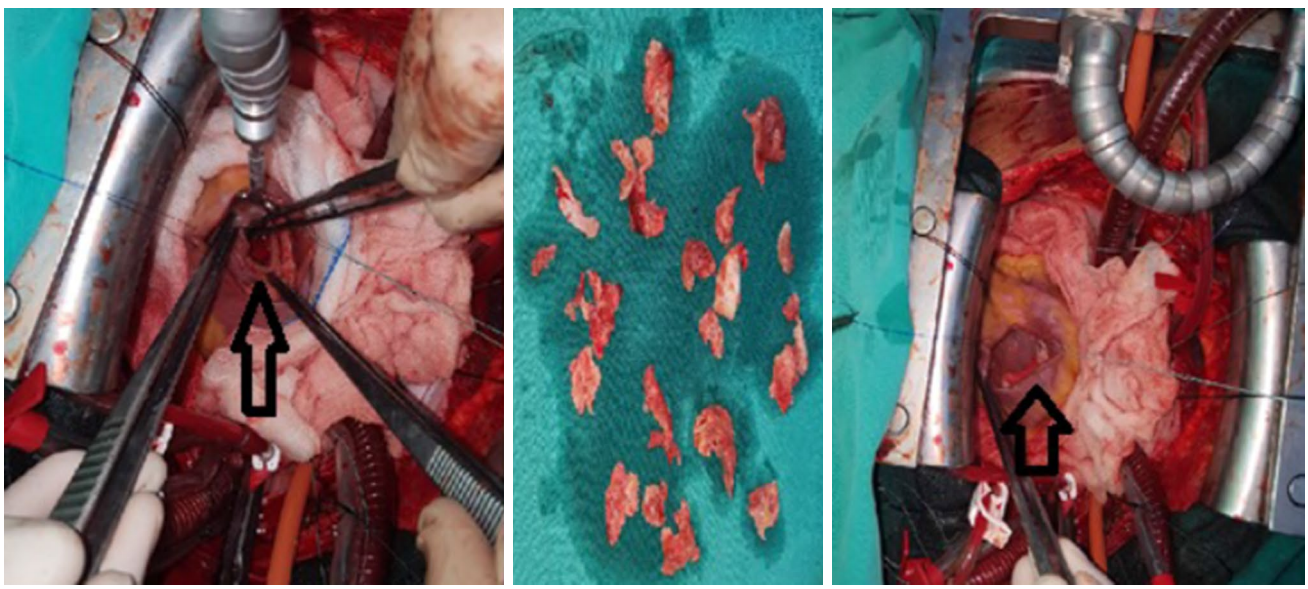

Figure 4. The images of the patient during open heart surgery.

pacemaker implantation was performed. The patient was discharged in an acceptable health condition after 46 days of hospitalization.

DISCUSSION

Septal rupture is a frightening complication. In the study of Birincioğlu et al.,[2] only one of 41 patients died as a result of septal rupture. It should be suspected in patients living in poor living conditions and presenting with unexplained cardiac symptoms.[3] The contribution of imaging is of utmost importance in diagnosis. The absence of anaphylaxis, one of the complications of rupture, in the follow-up of our patient may be related to albendazole administered before rupture.

Delayed diagnosis of CHC may lead to a poor prognosis associated with the risk of rupture and is responsible for the spread of infection throughout the body as a result of rupture.[4] As in our case, surgical treatment supported by medical treatment is recommended in the very early period, even if it is diagnosed early.

In ruptured hydatid cysts with peripheral artery occlusion, embolectomy and surgical resection of the cyst are recommended urgently. Patients should be, then, treated with albendazole to prevent the disease from spreading.[5] However, in our case, we performed peripheral embolectomy very early, and resection of the intracardiac hydatid cyst was performed under elective conditions. If the cardiac condition in patients with ruptured hydatid cysts is tolerable, primary treatment of peripheral complications may be considered. In a previous case, the patient underwent early cystic resection, and albendazole treatment was, then, given for four weeks.[6] We applied surgical resection to our patient after complication control and after four weeks of albendazole treatment. Following discharge, we applied albendazole treatment for four weeks.

In conclusion, we recommend evaluating very early surgical intervention to prevent fatal complications even in asymptomatic patients due to the lack of alternative treatment options. Serial echocardiographic follow-up or other imaging methods should be also considered in the follow-up of complications.

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