

A cardiac hydatid cyst in the interventricular septum

İnterventriküler septumun kardiyak kist hidatiği

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Cardiac hydatid cyst is a very rarely seen. It primarily involves the lungs and liver. Treatment of cardiac hydatid cysts is surgical and subsequent medical therapy with albendazole to prevent relapses. Herein, we report a 14-year-old male case who underwent a surgical operation six months ago due to a hydatid cyst in the liver and developed cardiac hydatid cyst in the interventricular septum despite postoperative albendazole therapy.

Key words: Cardiac; child; hydatid cyst; liver.

Echinococcosis/hydatidosis is a zoonotic or parasitic disease found in both humans and animals. In addition, cardiac hydatid cysts are quite rare, occurring in only 0.5-2% of the population.^[1] In this article, we present a 14-year-old male patient with a previous history of close contact with a dog who had previously undergone surgery because of a hepatic hydatid cyst six-months prior to being admitted to our hospital. He then developed a cardiac hydatid cyst in the interventricular septum (IVS) despite subsequent albendazole therapy.

CASE REPORT

A 14-year-old male patient was transferred to our hospital due to the cystic structure of the IVS that was detected on echocardiography performed in the hospital to which he had previously been admitted with dyspnea on exertion. His history revealed that he had also undergone the evacuation of a percutaneous hepatic hydatid cyst six months earlier and albendazole therapy had been initiated after the surgery. His physical examination was unremarkable. The patient underwent

Kardiyak kist hidatik oldukça nadir görülür. Kist hidatik sıklıkla akciğerleri ve karaciğeri tutar. Kardiyak kist hidatiğin tedavisi cerrahi ve nüksü engellemek amacıyla cerrahi takiben albendazol ile medikal tedavidir. Bu yazıda, altı ay önce karaciğer kist hidatiği nedeniyle ameliyat olan ve ameliyat sonrası albendazol tedavisi almasına rağmen interventriküler septum yerleşimli kardiyak kist hidatik gelişen 14 yaşında erkek bir olgu sunuldu.

Anahtar sözcükler: Kardiyak; çocuk; kist hidatik; karaciğer.

a chest X-ray electrocardiography along with a routine blood analysis, but all of the results were normal. However, transthoracic echocardiography revealed a 3.5x3.5 cm cystic structure in the middle of the ventricular septum (Figure 1). In addition, multislice computed tomography (CT) (Figure 2) showed a 4x3.5 cm hypodense lesion with massive liquid density at the level of the IVS that was compressing the main pulmonary artery and slightly obstructing the left ventricle outflow tract. These findings were consistent with the presence of a hydatid cyst. After the diagnosis of a cardiac hydatid cyst, he was transferred to the cardiac surgery clinic. During the surgical procedure, extracorporeal circulation was provided, and a right atriotomy was performed in which the right atrium and tricuspid valve were eliminated and the cystic formation in the IVS was exposed. The cyst content was then aspirated and washed with 3% saline solution. This was followed by a cystotomy in which the daughter cysts were excised. Afterwards, the IVS was repaired, and the right atriotomy was closed. The patient was postoperatively monitored in the clinic,



Available online at
www.tgkdc.dergisi.org
doi: 10.5606/tgkdc.dergisi.2014.8194
QR (Quick Response) Code

Received: January 09, 2013 Accepted: February 12, 2013

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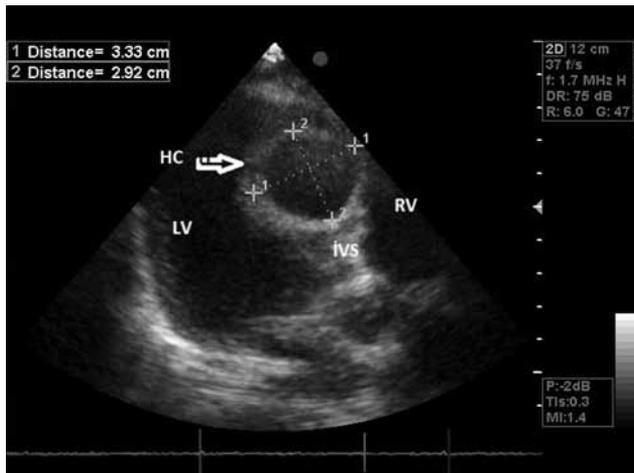


Figure 1. Two-dimensional echocardiographic image of the hydatid cyst in the interventricular septum.

and control echocardiography found nothing abnormal. However, the albendazole therapy was continued. He was then discharged from the hospital to be followed up in our outpatient clinic.

DISCUSSION

Echinococci can reach the myocardium from the left side of the heart via coronary circulation, but the exact location depends on the blood supply in the area. Involvement of the left ventricle is more prevalent than the right ventricle because it has a higher blood supply. A cardiac hydatid cyst most commonly is found in the left ventricle (55-60%) and IVS (10-20%), whereas

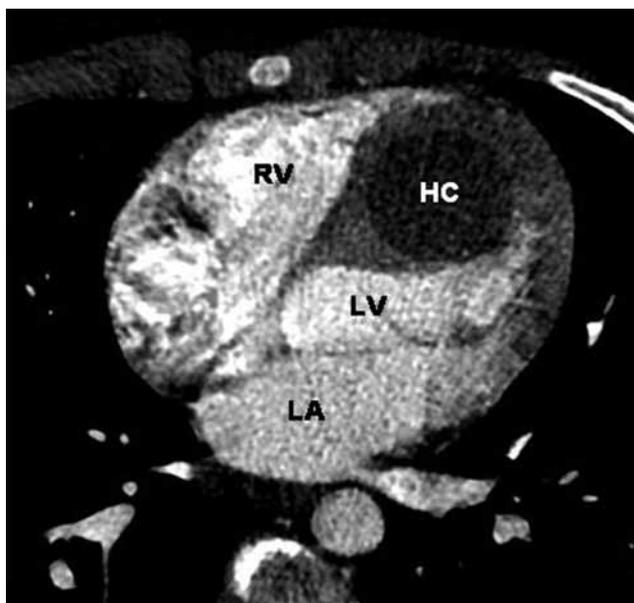


Figure 2. Computed tomographic image of the hydatid cyst.

the right ventricle and right atrium (4-15%) are rarely involved.^[2] Although quite rare, it may also involve the pericardium, pulmonary artery, left atrium, and endocardium as well.^[3] Our case had both a hepatic and a cardiac hydatid cyst, and the patient developed cardiac involvement in spite of the surgical removal of the hepatic hydatid cyst and subsequent albendazole therapy. In conformity with the literature,^[2] the cardiac hydatid cyst involved the IVS.

The clinical signs of hydatid cysts can vary depending on the numbers, size, and location. Although they may present with chest pain, palpitation, and shortness of breath, in some cases, they may also be asymptomatic.^[4] Our patient was suffering from fatigue. Moreover, cardiac hydatid cysts, although rare, may cause life-threatening complications such as anaphylactic shock and pulmonary, cerebral, or peripheral arterial emboli as well as acute coronary syndrome and arrhythmias. Furthermore, they may occasionally cause obstructions in the left or right ventricle outflow tract depending on their location. For this reason, early surgical intervention must be performed when a cardiac hydatid cyst is detected, but the operation should be carried out with care since cardiovascular collapse may develop in cases in which the cyst ruptures into the heart.^[5] Transthoracic echocardiography plays a substantial role in the diagnosis of cardiac hydatid cysts because it is non-invasive tool that is easy to apply and offers specificity in detecting this type of cyst. Additionally, serology and other imaging methods, for example CT and magnetic resonance imaging can also be used.^[4] We selected echocardiography and multislice CT for the diagnosis of our patient. Multislice CT has various advantages



Figure 3. The hydatid cyst fluid was aspirated during the surgery.

including the ability to conduct a three-dimensional (3D) evaluation of the cyst, detect compression in the surrounding structures, and determine the most appropriate region for surgical intervention. A routine echocardiography should also be performed in patients with a hepatic or pulmonary hydatid cyst in order to not miss the cardiac hydatid cyst.^[6]

Surgical excision of the cyst followed by medical therapy (albendazole) for six months was the preferred method of therapy for our patient. The probability of developing fertile elements in the future could not be eliminated because all of the cysts might not have been properly excised during the surgical procedure. Even with the long-term albendazole therapy, this is a possibility. Therefore, patients should be monitored for a few years via serological tests and various imaging methods to observe the efficacy of the therapy.

In conclusion, treatment of hydatid cysts requires long-term therapy that involves patience, and reevaluation is needed at regular intervals. Additionally, routine echocardiography is recommended for patients with a hepatic or pulmonary hydatid cyst so as not to overlook the presence of a cardiac hydatid cyst since these can occur even with albendazole therapy.

Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding

The authors received no financial support for the research and/or authorship of this article.

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