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A case of cardiac hydatid cyst located in the interventricular septum

İnterventriküler septum yerleşimli kardiyak kist hidatik olgusu

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Cardiac hydatid cyst is a rather rare disease. Although cardiac hydatid cysts are usually asymptomatic, serious complications such as atrioventricular block, syncope, pericarditis, stenosis in cardiac valve orifices, and sudden death may develop due to the localization and size of the cyst. Early diagnosis and treatment are of utmost importance. In this report, we present a case of interventricular septum localized hydatid cyst presenting with syncope as referral symptom.

Key words: Hydatid cyst; interventricular septum; syncope.

Kardiyak kist hidatik, oldukça nadir görülen bir hastalıktır. Kardiyak kist hidatikler genellikle asemptomatik olmakla birlikte, kistin yerleşimine ve boyutuna bağlı olarak atriyoventriküler blok, senkop, perikardit, kalp kapak orifislerinde daralma ve ani ölüm gibi ciddi komplikasyonlara yol açabilir. Erken tanı ve tedavi son derece önemlidir. Bu yazıda, ilk başvuru nedeni senkop olan ve interventrikül septum yerleşimli kist hidatik olgusu sunuldu.

Anahtar sözcükler: Kist hidatik; interventriküler septum; senkop.

Hydatid cyst disease is endemic in tropical and subtropical regions. The most common organs of involvement are the liver (55-70%) and lungs (18-35%), with the heart being rarely (0.5-2%) involved.[1] In cardiac cases, other organ systems are usually already involved. However, in our case, there was no extra-cardiac involvement. The most important diagnostic modalities in hydatid cyst disease are echocardiography, computed tomography (CT) and magnetic resonance imaging (MRI). The primary treatment option is surgery, and patients are medically treated with albendazole or to prevent postoperative relapse.[2]

CASE REPORT

An 11-year-old female patient was referred to our facility because of syncopal attacks that had occurred three times over the course of the previous two years. The last attack had taken place six months prior to her referral. The patient had been diagnosed with rheumatic fever and treated with penicillin and corticosteroids. Transthoracic echocardiography and MRI studies revealed a 4x4 cm cystic mass with well-defined borders in the interventricular septum, expanding toward the right ventricular outlet tract; however, no gradient was detected in the tract. A general physical examination found nothing abnormal, and the patient had no cardiac murmurs. Electrocardiography (ECG) showed sinus rhythm with right bundle branch block, and chest radiography revealed no cardiomegaly. Based on these findings, surgery was recommended.

The patient underwent aortic arterial bicaval cannulation after a median sternotomy, and a right ventriculotomy was performed after aortic cross-clamping. The 4x4 cm cystic mass was detected in the interventricular septum which was slightly narrowing the right ventricular outlet tract (Figure 1). With a syringe, 50 cc of fluid was aspirated from the cyst. The cyst was then opened with an incision and was found to be populated with numerous multilobular vesicles (Figure 2). The cyst wall and the vesicles were removed, and the cavity was irrigated with formaldehyde solution (Figure 3). Next, the empty sac in the interventricular septum was plicated, and the interventricular septum was checked to make sure it was intact. The ventriculotomy was then primarily closed. The perioperative and postoperative periods were problem-free. The patient

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Figure 1. View of the cyst through a right ventriculotomy.

was on sinus rhythm, and no blocks were observed. Albendazole treatment was given to decrease the risk of relapse. The patient was discharged on the postoperative eighth day without complications, but the albendazole treatment was continued for one month.

DISCUSSION

Cardiac hydatid cyst disease comprises 2% of all hydatid cyst cases. The most common localization is the left ventricle (55-60%),[3] with the right ventricle, left atrium, pulmonary artery, pericardium (7-8%), and interventricular septum (8%) being less commonly involved. The disease may be asymptomatic or may present with clinical findings owing to the number, localization, and size of the cysts. In hydatid cysts located in the interventricular septum, disturbances of rhythm and hemodynamics, atrioventricular block due to compression on conduction pathways, and right or left ventricular outlet tract obstruction may be seen.[4] In our case, the cyst was located in the interventricular septum and was slightly narrowing the right ventricular outlet tract. There were no clinical findings except for syncopal attacks. Cysts located in the left ventricle may cause T-wave changes and low QRS voltage. In our case, right bundle branch block was found via ECG. Angina, pulmonary hypertension, and cardiac valve dysfunctions have also been reported depending on the localization of the lesion. Complications such as anaphylaxis and pulmonary or systemic embolism may also be seen, and early diagnosis of the disease is vital for preventing their occurrence.[5]

Diagnosis of cardiac involvement is facilitated if hepatic or pulmonary lesions are present, but diagnosis of isolated cardiac hydatid cysts is difficult. Nevertheless, in endemic regions, this diagnosis should definitely be kept in mind. Echocardiography is the most effective and noninvasive method for diagnosing cardiac hydatid disease while chest radiography may show findings such as pulmonary lesions and cardiac silhouette changes. In addition, CT and MRI are other valuable diagnostic modalities.[6] Serological tests, such as the Casoni skin test and Weinberg's test, may aid in the diagnosis, but they are unreliable due to high rates of false negativity. In our case, the diagnosis was made via echocardiography, and MRI was used to gather detailed information about the lesion.

In a patient diagnosed with cardiac hydatid cyst disease, the treatment of choice is surgery because of the risk of rupture and anaphylactic shock. Furthermore, the cyst could also rupture into the pericardial cavity and cause pericardial effusion and cardiac tamponade.

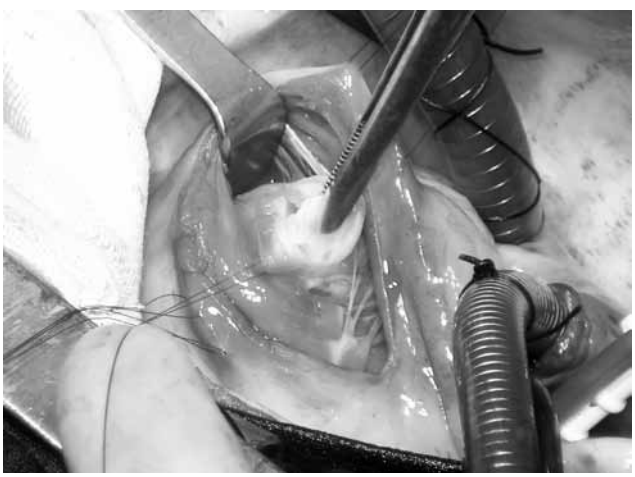

Figure 2. View of the incised cyst.

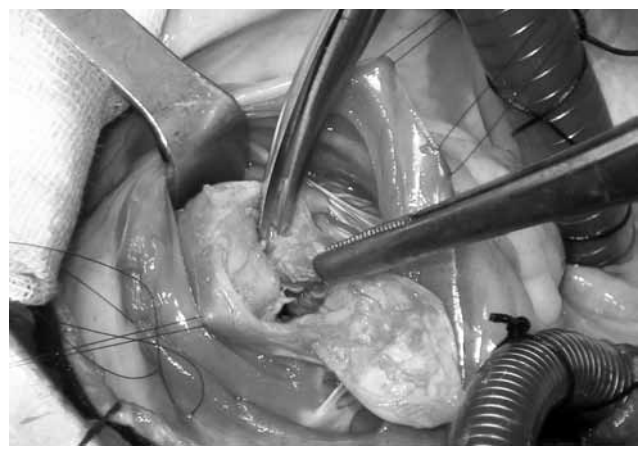

Figure 3. View of the interventricular septum with the cyst removed.

In determining the most appropriate surgical technique, localization of the cyst is of great importance. Most ventricular cysts located in the myocardium can be excised without cardiopulmonary bypass (CPB). Because of the difficulty in using the surgical approach for isolated interventricular cysts, the best method is excision with CPB. However, if the cyst ruptures, it potentially could cause lethal events such as embolism and anaphylactic shock.[7] We chose to perform the surgical excision under CPB after careful consideration. Since the interventricular septum makes an important contribution to contraction and the ejection fraction, the most important surgical risk involved with interventricular cysts is the occurrence of conduction and contraction defects, which usually happens due to capitonnage and suturing. Hence, we did not perform capitonnage in our case. The postoperative ECG showed sinus rhythm, and the ejection fraction was 62%.

In conclusion, hydatid cyst disease may be isolated in the heart and can cause various clinical scenarios depending on the localization and size of the lesions. We think that because of the risk of sudden death, the most effective treatment in cardiac hydatid cyst cases is surgery since the morbidity rates are low. Because rare cases of relapsing cardiac hydatid cyst disease have been reported, medical treatment following surgery is a must, and the cases should be followed up periodically with different imaging methods.

Declaration of conflicting interests

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