The Case of a Cyst Hydatid Localized Within the Interatrial Septum

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SUMMARY

The ratio of cardiac involvement of Echinococcus granulosus is 0.02-2% and although seen rarely, involvement of the interatrial septum has also been reported in the published literature. The present case was a 19-year-old male university student admitted to hospital with complaints of headache and dizziness. Computerized tomography of the cranium revealed a cystic mass located at the frontal region and enucleation of the cyst was performed during surgery. A cystic lesion 5 × 4 cm in size was detected within the interatrial septum on two-dimensional transthoracic echocardiography during the postoperative period and the patient was referred to our clinic. Open heart surgery was performed and a hydatid cyst that involved the interatrial septum was enucleated. The cyst wall was sutured to the interatrial septum. No complications developed during the postoperative period. The patient was discharged on the fifth day of hospitalization and medical therapy was started with albendazole. (Jpn Heart J 2004; 45: 703-707)

Key words: Hydatid cyst, Interatrial septum, Heart

CYSTIC hydatid disease caused by *Echinococcus granulosus* occurs most commonly in areas where sheep and cattle-raising farms are widespread, such as Southern Europe, South America, Africa, Turkey, Australia, New Zealand, and India. The disease is still a public health problem in Turkey.4-6)

Cysts may occur in any organ but the liver (55-70%) and lung (18-35%) are most commonly involved. Simultaneous liver and lung cysts are seen in 5-13% of the patients.7,8) The heart is rarely affected (0.02-2%).9) Echocardiography is the best method with which to diagnose a cardiac hydatid cyst and the clinical picture is related to localization, diameter, and complications. On the other hand, computed tomography (CT) is used to show the relationships between a hydatid cyst with the cardiac and noncardiac structures and also for anatomic measure-
Cardiac cysts should be removed surgically in view of the very serious effects of complications.\textsuperscript{12)}

In the present study, a case with a hydatid cyst localized at the interatrial septum that was treated by open cardiac surgery involving cardiopulmonary bypass without any complications is reported.

\section*{CASE}

A 19-year-old university student complained of headache and was treated for sinusitis. However, his headache persisted and vertigo developed. Cranial CT and MRI revealed a 6 × 6 cm cystic mass in the left frontal area. A detailed history was obtained from the student. He had been living in a small town in a rural area and his family raised livestock. The complete cyst was expelled without any rupture by the Dowling method. In the postoperative period, albendazole and phenytoin treatment was added to surgery.

After surgery, chest x-rays, echocardiography, and a thorax CT showed a 5 × 4 cm cystic mass (compatible with a hydatid cyst) in the interatrial septum. He was then referred to our clinic (Figure 1). The patient was asymptomatic and a physical examination was normal. Blood chemistry values were all normal. Echocardiography revealed a 5 × 4 cm cystic lesion. The cyst was in contact with

\begin{figure}[h]
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\includegraphics[width=0.5\textwidth]{figure1.png}
\caption{Thorax CT showed a cystic lesion in the interatrial septum involving the lateral walls of both atria.}
\end{figure}
both atria in the interatrial septum. Thorax CT showed a cystic lesion in the inter-
atrial septum involving the lateral walls of both atria. Open cardiac surgery
involved a median sternotomy followed by cannulation of the aorta and bicaval
veins and then cardiopulmonary bypass. The patient’s temperature decreased to
32°C. The cyst was aspirated and 3% NaCl was instilled into the cyst cavity. After
5 minutes, a 3 cm incision was made in the cyst adjacent to the right atrium. We
aspirated the cyst material from this incision. We then extracted the 5 × 4 cm cyst,
together with its capsule, which was located laterally to the interatrial septum and
connected to both atria (Figure 2). The cyst cavity was irrigated with 3% NaCl
solution and aspirated. The hydatid cyst located laterally to the interatrial septum
and atrial cavities did not decrease in size following cyst resection. There was no
need to repair with a graft so we repaired the cavity primarily with 3-0 prolene
suture. The cardiopulmonary bypass lasted for 34 minutes and the aortic cross
clamp time was 21 minutes. There were no complications during or after surgery.
During the postoperative period, albendazole was administered (400 mg/12 h) for
four weeks. There were 14 days between 2 treatment courses. The patient was
discharged from our clinic 5 days after surgery. No problems were encountered
during the 6-month postsurgical follow-up period. Chest x-rays and repeat
echocardiography were all normal.

![Figure 2. View during cardiopulmonary bypass after enucleation of the hydatid
cyst localized in the interatrial septum.](image-url)
DISCUSSION

Endemic hydatid disease is encountered in people who live on sheep and cattle farms. Generally, hydatid cysts are seen in the liver and lung, but are also occasionally found in brain, heart, kidneys, ureter, spleen, uterus, mesentary, pancreas, diaphragm, and muscles. One to two percent of brain hydatid cysts are solitary and localized intraparenchymally. Parasite embryos reach the heart via a pulmonary artery and/or coronary artery. The heart contractions create a natural resistance so hydatid cysts are not common in the heart. Cardiac hydatid cysts account for 0.02-2% of all hydatid cysts, 55-75% are localized in the left ventricle, 15-18% in the right ventricle, 5-9% in the interventricular septum, 3-4% in the right atrium, and 2% in the interatrial septum. According to the published literature, hydatid cysts localized in the interatrial septum are generally diagnosed during the autopsy of a rupture or mortal arrhythmia, during venous cannulation in open heart surgery, or during exploration of massive pulmonary emboli. In our case, a hydatid cyst located in the interatrial septum was detected after surgery on an intracranially localized hydatid cyst and during exploration for a second focus.

Cardiac hydatid cysts are generally asymptomatic, although they are sometimes seen together with angina, arrhythmias, valvular dysfunction, pericardial reaction, pulmonary and systemic embolies, pulmonary hypertension, and anaphylactic reaction complications. The most common complication is rupture of the cyst (24-60%). The present case had no cardiac symptoms. Cardiac examination was normal and the heart was in sinus rhythm. In hydatid cyst cases due to a parasite infection, eosinophilia is common. In our case, eosinophilia was found to be 0.4%. The main treatment for a cardiac hydatid cyst is surgery since sudden death due to complications can occur. Surgical mortality in cardiac hydatid cysts was reported to be 0.29-0.6%. Clinical findings generally depend on the localization, diameter, and complications of the cardiac cyst hydatid. After detection of a hydatid cyst whole body exploration must be conducted to identify other hydatid cysts. In our case, an asymptomatic cardiac hydatid cyst localized in the interatrial septum was found during exploration after detecting an intracranial hydatid cyst.

Hydatid cysts are still common in Turkey. We believe that surgical treatment, which has low morbidity and high efficacy, is the best treatment because of the risk of sudden death due to the complications associated with cardiac hydatid cysts, which are rare compared with cysts in other organs.
REFERENCES