TABLE 1. Cardiac leiomyosarcoma metastasizing to the brain: Literature review

References	Age (y)/sex	Initial symptoms	Primary tumor	Surgical procedure	Adjuvant therapy	Brain metastasis	Other metastasis	Survival time
Babatasi and coworkers, ³ 1998	47, male	Weight loss, pulmonary edema	Left atrium	Resection of the left atrial mass orthotopic heart transplantation after 6 mo	None	15 mo later	Liver, bone	15 mo
Thomas and coworkers, ⁴ 1992	37, male	Polyarthralgia, fever, dyspnea	Left atrium	Resection of the atrial mass, resection of brain metastasis, partial bowel resection	Mediastinal radiotherapy plus Chemotherapy, (whole-brain and local boost)	14 mo later	17 mo later, multiple sites	17 mo
Cohen, ⁵ 1969	41, male	Hemoptysis, chest pain, headache	Right and left atrium plus bowel	Resection of the cardiac tumor, cardiac reoperation	None	Autopsy finding	Autopsy finding, multiple sites	17 mo

Our patient is unique with regard to the concomitant manifestation of the cerebral and cardiac leiomyosarcomas. Most likely, the cerebral manifestation should be regarded as a metastasis; the immunohistochemical profiles and the clinical history, however, also allow different interpretations.

The best available therapy for undifferentiated leiomyosarcoma consists of early detection and radical surgical removal. Although the cardiac tumor in our patient showed no relapse after complete removal, the cerebral tumor recurred several times. The repeated craniotomies within short intervals can be discussed controversially. Nevertheless, because the patient was asymptomatic apart from occasional seizures, we decided to offer him these options as live-saving procedures.

Concomitant cardiac and cranial leiomyosarcoma seems to be particularly aggressive, and only diligent follow-up examinations and early surgical intervention will make long-

term survival possible. There is a need for more efficacious adjuvant therapy.

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Cardiac echinococcosis of the interventricular septum in early childhood: Report of two cases

T. Mohsen, MD, FRCS, N. El Beharry, MD, T. Maree, MD, and E. S. Akl, MD, Cairo, Egypt

From the Department of Cardiothoracic Surgery, Kasr El Aini Hospital, Cairo University, Cairo, Egypt.

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Address for reprints: T. Mohsen, MD, FRCS, Kasr El Aini Hospital, Cairo University Cardiothoracic Surgery, Villa 23 street 262 New Maadi, Cairo 11431 Egypt (E-mail: tmohsen_2000@yahoo.com).

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Echinococcosis has a low endemicity in Egypt. However, in some governorates it presents a public health concern with an incidence ranging from 0.8 to 2.6 per 100,000.¹ Cardiac infestation is very uncommon, accounting for 0.5% to 2% of all hydatid infestations.² We present 2 cases of hydatid cysts of the interventricular septum in early childhood.

FIGURE 1. A, Echocardiogram showing 2 × 2.33-cm interventricular hydatid cyst. B, Magnetic resonance images showing multivesicular hydatid cysts.

CLINICAL SUMMARIES

PATIENT 1. A 5-year-old boy had had progressive dyspnea over the past 4 months and easy fatigability. The results of routine examinations were within normal limits. Echocardiography revealed an interventricular cyst 2.1 × 2.3 cm.

PATIENT 2. A 4-year-old boy had palpitations and progressive dyspnea over the past 6 months, with two episodes of ventricular tachyarrhythmias. Results of routine examination and laboratory studies were within normal limits. Echocardiography revealed a large cyst, 3 × 3 cm, in the interventricular septum.

Magnetic resonant imaging, done for both patients, confirmed the diagnosis and showed concomitant hepatic infestation in the second patient (Figure 1).

SURGICAL TECHNIQUE

Standard median sternotomy was used, with cardiopulmonary bypass and warm blood cardioplegic arrest. The interventricular septum was reached through the tricuspid valve. A bulge was noted in both cases near the outflow tract of the right ventricle. The cysts were first aspirated and the covering layer of the septal myocardium was dissected until the cysts' walls were reached. They could then be removed

FIGURE 2. A and B, Operative photographs of hydatid cysts.

(Figure 2). In the first patient a ventricular septal defect was created, and this was closed with a Dacron patch. In the second patient the remaining cavity was suture closed. Both patients had uneventful postoperative recoveries and were discharged on days 7 and 10 postoperatively. Three months later the second patient underwent laparotomy for removal of hepatic cysts.

COMMENT

In this report, we present 2 particularly interesting cases of hydatid cyst of the interventricular septum at a rare age of

presentation. Moreover, 1 of these patients had multivesicular cysts. Because the cyst takes 1 to 5 years to grow, the usual presentation of hydatid disease of the heart occurs at or over 20 years of age.^{3,4} Echinococcosis is a human parasitic disease most commonly caused by the larval stage of *Echinococcus granulosus*. As a rule, lung cysts and heart echinococcosis occur less often than hepatic cysts. The most frequent location in the heart is the ventricular myocardium.⁵ Cardiac echinococcal cysts rarely involve the interventricular septum. Presentation varies according to the location in the septum; therefore, compression involving the atrioventricular conduction pathway may lead to variable arrhythmias or obstruction to the ventricular outflow tract. However, the most dangerous complication is cyst perforation, which has a frequency between 25% and 40%. After cyst perforation, three quarters of the patients die of septic shock or embolic complications.

Diagnosis of cardiac hydatid cyst is simple, reliable, and sensitive when transthoracic echocardiography is used.⁵ However, computed tomographic scan and magnetic resonance imaging are complementary tools to rule out multivesicular cysts.

In this report, we used standard median sternotomy with cardiopulmonary bypass. The septum was reached through the tricuspid valve, and initially the content was aspirated and a crystal rock fluid was obtained. Sterilization before enucleation with different agents has been mentioned in the literature. In this report, we did not use any sterilizing agent but depended on complete enucleation of the cyst; in 1 case, we had to create a ventricular septal defect to achieve this. Albendazole was routinely given for 6 months after the operation.

In conclusion, cardiac echinococcosis is a rare disease. We report 2 cases of cardiac echinococcosis in childhood, 1 of which was multivesicular. Follow-up extends for 9 years without recurrence.

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