

HYDATID CYSTS WITH PULMONARY AND CARDIAC INVOLVEMENT

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ABSTRACT

Surgical treatment of a case of pulmonary and cardiac hydatid cysts is described. The role of computed tomography in demonstrating multivesicular cystic lesions is highlighted.

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INTRODUCTION

Hydatid disease is endemic in various regions of the world. Unlike liver and pulmonary involvement, cardiac echinococcosis is rare, with an incidence of 0.2% to 2%.¹ Pulmonary and cardiac cysts require various radiologic methods for differential diagnosis because conventional radiographs are inadequate. Computed tomography (CT) is superior for differential diagnosis by demonstrating fluid in cystic lesions, air and fluid in cavitory lesions, and solid densities in complicated cysts.² Magnetic resonance imaging, echocardiography, and angiography are also valuable tools for the diagnosis of cardiac echinococcosis.^{3,4} A case of pulmonary and cardiac echinococcosis is described.

CASE REPORT

A 58-year-old male presented with chest pain and dyspnea. Chest radiography showed smooth thick-walled cystic lesions containing air and fluid in the left lung. There was loculated pleural fluid and a slight focal bulging on the left ventricular wall. Laboratory investigations showed leukocytosis, an elevated erythrocyte sedimentation rate, and hypoalbuminemia. An electrocardiogram revealed sinus tachycardia and nonspecific ST-segment changes.

Tube thoracostomy was performed following aspiration of pus on thoracentesis. Contrast-enhanced CT showed loculated empyema on the left side and two multilocular cystic lesions on the left basal lobe, measuring 2 × 2 × 4 cm and 4 × 6 × 7 cm, in addition to one located on the left ventricular myocardium and pericardium, measuring 3 × 5 × 5 cm. The walls of the cysts were thick and the fluid density was heterogeneous. A diagnosis of pulmonary and cardiac hydatid cysts was made because of the presence of air bubbles and daughter cysts (Figure 1). Echocardiography did not demonstrate an intracardiac cystic lesion but a multilocular cyst was seen on the left ventricular myocardium and pericardium. There was no pericardial fluid and the abdominal, pelvic, and retroperitoneal organs were normal on ultrasonographic examination. Daughter cysts and endocystic membranes were noted in the drainage from the chest tube.

The patient underwent exploratory surgery via a thoracotomy. Pleural decortication and cystectomy were performed. When the cystic cavity beneath the pericardium was opened, the myocardial wall was seen to be slightly eroded by a multilocular cyst (Figure 2). The cyst was drained (Figure 3) and the myocardium was closed and buttressed with pericardium. A pericardial window was

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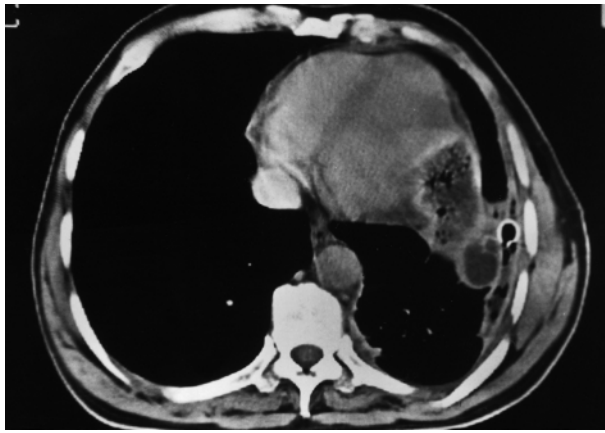


Figure 1. Cystic lesion with an irregular thick wall, containing septi and air bubbles. The left basal lobe loculated pleural empyema and drainage tube can be seen.



Figure 2. The appearance of the multivesicular cyst after opening the pericardium and cyst wall.

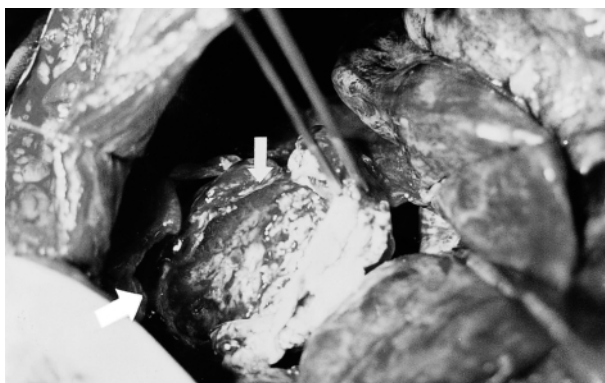


Figure 3. The pericardium (thick arrow) and myocardial cavity (thin arrow) after evacuating the cyst.

made in the lower part of the pericardial incision for drainage. The patient made an uneventful recovery and has been followed up for 2 years.

DISCUSSION

Cardiac hydatid cyst occurs rarely in comparison with liver and pulmonary hydatid disease.⁴ Hydatid disease in humans is usually caused by *Echinococcus granulosus*. It can also be caused by *Echinococcus multilocularis*

passing to humans from contact with host animals. Primary cardiac involvement is assumed when there is no evidence of other cysts in the body, whereas a hydatid cyst arising in the vicinity of the heart may affect it secondarily.⁵ Cardiac embolization by echinococcosis larvae delivered by the systemic circulation has been found in the left ventricular wall (in 60% to 70% of cases), in the interventricular septum (7%), or in other areas of the heart (23%).⁵ Secondary involvement of the pericardium or myocardium occurs by expansion of hydatid disease from the lung, other parts of the mediastinum, the dome of the liver or from abdominal cysts prolapsing through the diaphragm.⁵ In this patient, the cyst was on the left ventricular wall and the presence of a cardiac cystic lesion in association with pulmonary hydatid cysts indicated secondary cardiac involvement.

The clinical findings in patients with cardiac hydatid cyst are retrosternal pain, palpitations, arrhythmia, and dyspnea. Electrocardiographic findings may resemble myocardial infarction and bundle branch conduction disturbances. Tachycardia and nonspecific ST-segment changes were observed in the electrocardiogram of our patient. In conventional radiography, cardiac bulging may be seen and the presence of a rim of calcification may be helpful for diagnosis in some patients.⁶ Aneurysm and pleuro-pericardial cyst should be considered in the differential diagnosis.⁷ CT is valuable in cases of intact and ruptured hydatid cysts in patients with collaborated membranes and daughter cysts.² When hydatid cyst is suspected, cardiac CT scanning can be an important diagnostic tool.⁸ In this patient, the hydatid cysts were diagnosed by a CT scan that demonstrated septi and air bubbles in the ruptured and infected pulmonary and cardiac cystic lesions.

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