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CARDIAC TAMPONADE VIA A FISTULA TO THE PERICARDIUM FROM A HYDATID CYST: CASE REPORT AND REVIEW OF THE LITERATURE

Ahmet Demircan, MD,* Ayfer Keles, MD,* F. Ozan Kahveci, MD,* Murat Tulmac, MD,† and Murat Ozsarac, MD*

*Department of Emergency Medicine and †Department of Cardiology, Gazi University Hospital, Ankara, Turkey
Reprint Address: Ahmet Demircan, MD, Department of Emergency Medicine, Gazi University School of Medicine, Besevler, Ankara 06500, Turkey

□ **Abstract—Although echinococcus is endemic in many sheep-raising areas of the world, cardiac involvement is rare. Cysts usually reach the heart by means of the coronary circulation, but other routes have been proposed. Pericardial tamponade due to a hydatid cyst has not yet been described in the literature. We present the case of a 46-year-old woman who presented to the Emergency Department with complaints of chest pain and mild dyspnea. Her medical history was positive for a liver hydatid cyst operation 26 years earlier. She was tachypneic, tachycardic, and hypotensive. Pleural and pericardial effusions were detected on transthoracic echocardiography. When she worsened clinically, pericardiocentesis was performed and she promptly improved. A fistula was detected between the liver and pericardium on computed tomography (CT) scan of the torso. Serologic test (agglutination) for *Echinococcus granulosus* was positive in a 1/32 dilution. A final diagnosis of mediastinal hydatic cyst was made, and a 4-week course of albendazol was given. Then the cyst was surgically excised, and the patient recovered without complications. © 2010 Elsevier Inc.**

□ **Keywords—hydatid cyst; pericardial tamponade; emergency department (ED)**

INTRODUCTION

Cystic echinococcosis (CE) is the larval cystic stage of a small taeniid tapeworm that may cause illness in intermediate hosts, generally herbivorous animals, and in humans who are infected accidentally. The prevalence of CE varies widely depending on geographical location and culture. For example, rates per 100,000 persons are as follows: 4 in Turkey, 13 in Greece, 75 in rural Uruguay, 143 in rural Argentina, 197 in Xinjiang province in China, and 220 in the Turkana district of Kenya. Most patients have single-organ involvement (two-thirds in the liver) and harbor a solitary cyst. The second most commonly involved organ is the lung (1). Cardiac CE is rare, accounting for only 0.5–2.0% of cases (2,3). Although cysts usually reach the heart via the coronary circulation, other possible routes have been described (2).

CASE REPORT

A 46-year-old woman was transferred to our tertiary medical center's Emergency Department (ED) with complaints of chest pain and mild dyspnea that began the night before arrival. Physicians were in the process of performing a preoperative evaluation for an elective nephrectomy at an outside hospital, but found pleurodynia and hypotension, and thought she might have a pulmonary embolism, mediastinitis, or an aortic dissection. Her past medical history was significant for an operation to remove a renal calculus 20 years earlier. Then, just 3 years prior, evaluation for left-sided flank pain with renal cortical scintigraphy showed a functional loss of 90% in

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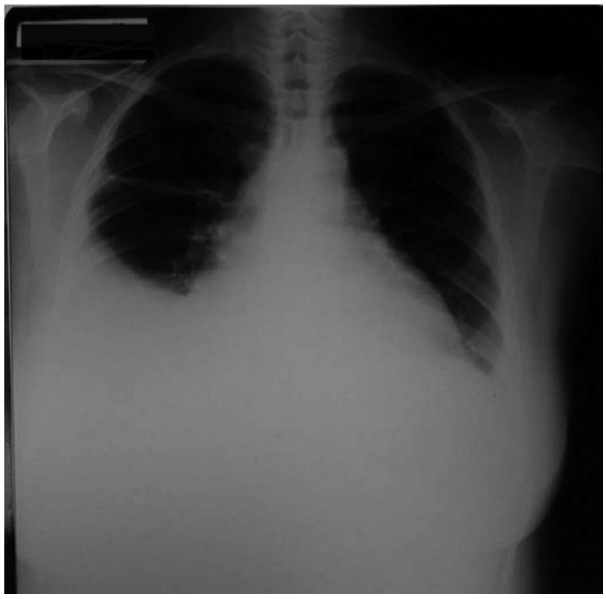

Figure 1. Chest radiography shows cardiomegaly and blunting of the left pulmonary sulcus.

the left kidney, and 10% in the right kidney. She had no history of heart disease, and her family history and social history were non-contributory.

On presentation, she was alert and anxious. The vital signs were: temperature 36.8°C, heart rate 124 beats/min, blood pressure 80/30 mm Hg, respiratory rate 40 breaths/min, and SaO_2 93% by pulse oximetry. On physical examination, the neck veins were not distended and lung sounds were decreased bilaterally. The heart rhythm was regular, tachycardic, and she had no murmur, rub, Homan's sign, or leg swelling. Peripheral pulses were all intact and equal. The remainder of the physical examination was unremarkable. Upon more detailed questioning, she revealed that she had been operated on for a liver cyst 26 years earlier.

Laboratory findings included a white blood cell count of 21,300/uL, hemoglobin level of 9.7 gm/dL, hematocrit of 33%, platelet count of 581,000/uL, and an erythrocyte sedimentation rate of 99 mm/h. The electrocardiogram showed sinus tachycardia with normal atrioventricular (AV) conduction and occasional inverted T waves in lead III. Portable plain chest radiography showed right pulmonary effusion, cardiomegaly and blunting of the left pulmonary sulcus (Figure 1). Arterial blood gas on room air revealed a pH of 7.47, pO_2 of 67.5 mm Hg, and pCO_2 of 18.6 mm Hg. D-dimer by enzyme-linked immunosorbent assay was 435 ng/mL (normal 50–192 ng/mL).

To rule out an aortic dissection in this patient with chest pain and hypotension, a computed tomography (CT) scan of the thorax was obtained. The aorta and main pulmonary vessels were reported as normal. Bilateral massive pleural effusions (right > left), atelectasis, and a pericardial effusion (with compression of the right atrium) were also seen. A ventilation/perfusion (V/Q) lung scan was performed, and was interpreted as high probability for the presence of a pulmonary embolus (PE) (Figure 2) due to segmental perfusion defects in the anterior-superior segment of the upper lobe of the right lung and the inferior segment of the upper lobe of the left lung. In our patient with hypoxia, hypocapnia, V/Q findings positive for PE, and increased D-dimer levels in the presence of chest pain and dyspnea, a diagnosis of submassive PE was made and low molecular-weight heparin treatment was started.

Over the following 12 h, the patient failed to improve: the pulse remained 120 beats/min with a blood pressure of 90/70 mm Hg. In light of the cardiac enlargement and failure to respond to empiric heparin treatment, transthoracic echocardiography was performed that showed a pleural effusion, and a pericardial effusion with 12 mm of fluid posteriorly, 14 mm laterally, and 18 mm at the apex. Fibrin bands were

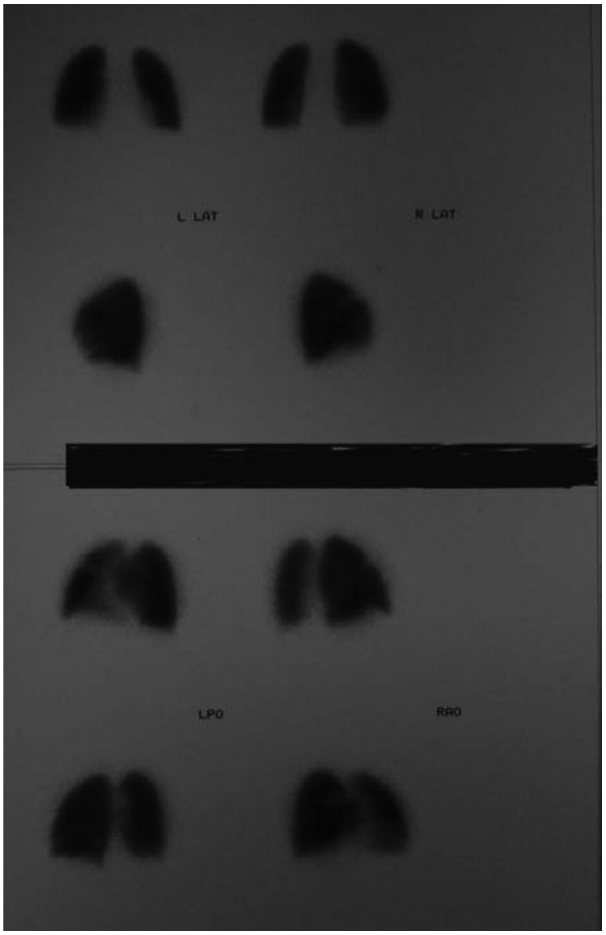

Figure 2. Ventilation/perfusion lung scan interpreted as high probability for the presence of a pulmonary thromboembolism.