

A complicated pulmonary hydatid cyst mimicking pneumonia: A case report

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Abstract

Introduction

Hydatid cyst is an important helminthic zoonotic disease in humans that commonly affects the liver and lungs. It results in high morbidity rates, particularly in endemic regions. Hydatid cyst disease may cause atypical clinical and radiological features and complications that cause difficulties in diagnosis. Misdiagnoses may end up with a delay in treatment.

Case presentation

We report a case of a 56-year-old female, with no past medical history who presented to our Emergency Department (ED) for sudden dyspnea and fever. Her physical examination showed altered facies and fever. Examination of the respiratory system revealed decreased vesicular breath sounds and vocal resonance and an impaired percussion note in the right lower lung field. Complete blood count (CBC) came with a high white blood cell (WBC) (73% neutrophils). Chest X-ray (CXR) showed an atypical right basal triangular opacity with an outer vertex and an inner base and thoracic CT demonstrated a complicated hydatid cyst partially ruptured in the right lobe.

Conclusion

Due to their varied presentations, pulmonary hydatid cysts may imitate other chest diseases especially when complicated and the diagnosis imposes major challenges. The disease should be considered in endemic regions.

Keywords: Case Report, Hydatid Cyst, Complications, Misdiagnosis, Management.

INTRODUCTION

Hydatid cyst, or Echinococcosis, is an important helminthic zoonotic disease in humans that commonly affects the liver and lungs. This disease results in high morbidity rates, particularly in endemic regions. In Tunisia, this disease is endemic, and the surgical incidence is 15/100000 habitants [1].

Hydatid cyst disease may cause atypical clinical and radiological features and complications that cause difficulties in diagnosis [2]. It can be asymptomatic or present with complications such as infection and perforation [3]. Hydatid cysts can be diagnosed by various imaging methods such as direct chest radiography and thoracic computed

tomography (CT) [4]. Uncomplicated hydatid cysts, seen as round opaque lesions on chest radiography, are easily diagnosed, whereas complicated cysts (infected or/ and perforated) may change the radiographic appearance of the hydatid cyst, causing an incorrect diagnosis and delayed treatment.[5]. Here, we are reporting a patient with a complicated hydatid cyst that resembled pneumonia.

CASE PRESENTATION

A 20-year-old female with no past medical history presented to our Emergency Department (ED) with complaints of sudden dyspnea and fever. Her general physical examination showed altered facies. She was febrile, and alert with a pulse rate of 96/min, respiratory rate of 28/min, and blood pressure of 110/76 mmHg. Examination of all other organs was essentially normal. Examination of the respiratory system revealed decreased vesicular breath sounds and vocal resonance and an impaired percussion note in the right lower lung field. Complete blood count (CBC) came with a high white blood cell (WBC) count of 13 600 cells/L with 73% being neutrophils. Chest X-ray (CXR) showed an atypical right basal triangular opacity with an outer vertex and an inner base with excavated density associated with an overlying focus of alveolar condensation (Figure 1). Initially, the patient was treated for pneumonia with antibiotics. CT scan demonstrated a complicated hydatid cyst partially ruptured in the right lobe (Figure 2). There was no other detectable lesion in

the liver or any other organ.

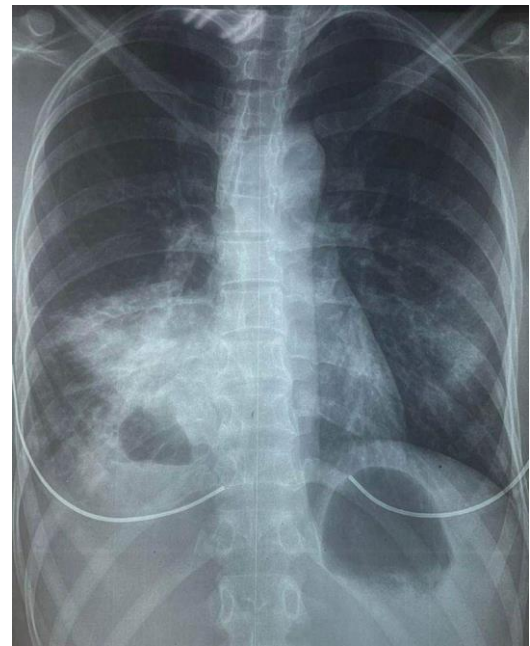


Figure 1: Chest X-ray with a right basal excavated density associated with a focus of alveolar condensation.

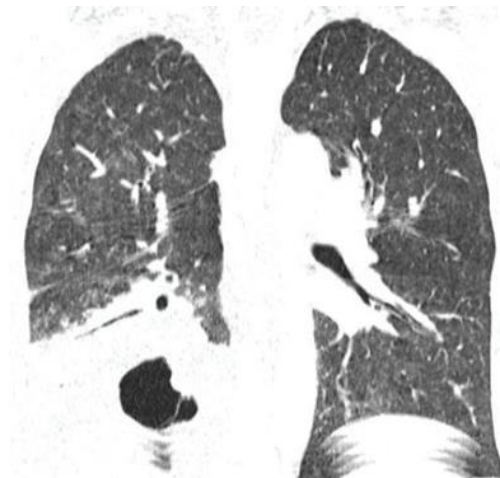


Figure2: Thoracic CT showing a complicated hydatid cyst

Further, there was no history of any pet dog. Based on clinical and radiological findings, she was diagnosed as having a complicated hydatid cyst. Surgery was indicated and the patient was admitted to “the thoracic surgery department”.

DISCUSSION

Pulmonary hydatid disease is a serious problem in many countries, including several Mediterranean countries, New Zealand, Australia, North America, South America, Central America, and Asia [6]. Most hydatid cyst diseases are caused by the larval stage of *Echinococcus granulosus* affecting mostly the liver and lungs, respectively [7,8]. In 60% of the cases, it is in the right lung, and in 20% of the cases, the lesions are bilateral [9]. In our case, the lesion was unilateral and located in the right lung. The growth of hydatid cysts is slow and may remain undiagnosed for long periods [6]. Hydatid cysts have many presentations although the majority are asymptomatic and hence found incidentally [10]. However, they can rupture, which can cause symptoms of productive cough, coughing out cystic contents, hemoptysis, and chest pain. The diagnosis is usually easy by typical radiological findings, especially if they are accompanied by hepatic hydatid cysts [10]. Uncomplicated cysts, seen as round opaque lesions on chest radiography, are easily diagnosed. However, infected and or perforated cysts, known as “complicated” cysts, may change the radiographic appearance of the hydatid cyst, causing an incorrect diagnosis and delayed treatment [11]. Imaging modalities and serology

establish the diagnosis in most cases. However, when they are complicated with infection, the diagnosis can be quite challenging as the clinical and radiological findings become atypical [11]. Routine hematological and biochemical tests are unhelpful in the diagnosis of hydatid disease [12]. In the diagnosis of hydatid cysts, tests such as indirect hemagglutination or indirect fluorescent antibody can be applied [13]. In our case, the serological test was not done. Since the clinical and laboratory findings are not specific in the diagnosis of hydatid cysts, radiological scans gain importance at the diagnosis stage. Cysts that are not complicated are seen as well-demarcated round or homogeneous masses in computer tomography and lung graphics. Larger cysts can result in atelectasis in the lungs, mediastinal shift, or pleural effusion depending on the level of pressure on the neighboring tissue. Lung graphics of the complicated cysts can show air-fluid level, water lily, or meniscus signs. Ruptured cysts can appear as masses or abscesses in computer tomography. In another study conducted on this issue, it was reported that hydatid cyst disease can easily be confused with thoracic empyema, mediastinal mass, tuberculosis pleurisy, and thoracic wall tumor [14].

It should be kept in mind that pulmonary hydatid cysts in endemic regions clinically and radiologically can mimic lung infection when complicated.

CONCLUSION

Due to their varied presentations, pulmonary hydatid cysts may imitate other chest diseases especially when complicated and the diagnosis imposes major challenges. The disease should be considered especially in endemic regions.

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