Hydatidosis manifested through pulmonary suppuration

P. Ramos*, F. Lucas**, A, Ventura***, M. Riscado***

Abstract

The authors describe the case of a 26-year-old male with clinical and radiological features suggesting pulmonary suppurative process (pulmonary abscess vs. necrotizing pneumonia). Despite antibiotic treatment, the characteristics of severe infection remained unchanged. The existence of a pulmonary hydatidosis was suspected, based on the radiological findings of pulmonary cavitation with movable residues (water lily sign), and this diagnosis was confirmed by thoracotomy. The suppuration of a pulmonary hydatid cyst as the first sign of the disease is rare, and can make appropriate diagnosis and choice of therapeutic approach difficult.

Key words: hydatidosis; pulmonary suppuration; water lily sign.

Introduction

Hydatidosis is a parasitic infection that is widely recognized and studied. Pulmonary hydatid cyst infection is a less common,[1] situation which, when unsuspected, can cause difficulty in the diagnosis and choice of therapy, as shown in the case described below.

Clinical case

26 year old Caucasian man, a painter, residing in Lisbon. Onset of clinical symptoms began approximately one week before admission, with a paroxysmal episode of persistent cough, and minor hemoptysis (single episode), followed by abundant white, putrid vomica. Although temporarily alleviated, during the six days that followed his condition deteriorated, with chest acute pain located in the left hemi-thoracic base, breathing difficulty, and high fever (39.7 C) which prompted the patient to visit the Emergency Service.

On observation, the patient was confused and dehydrated, with high fever (39.2ºC), profuse sweating, and pale skin, dullness on percussion of the left hemi-thorax base and reduction of vesicular murmurs in the same area.

Laboratory investigation revealed leukocytosis with neutrophilia (19,800/mm3; 92%), absence of eosinophilia and E.S.R. of 56 mm/1st hour. Biochemical analysis showed no anomalies. HIV 1 and 2 negative. PA chest x-ray image suggested cavitation, the left hemi-thorax base being of interest, which in the condition presented, was interpreted as probable pulmonary abscess vs. necrotizing pneumonia. Expectoration did not reveal any microorganism in the direct or culture exam, and the investigation of acid-alcohol resistant bacilli was negative.

Based on the size and irregular outline of the cavitation, associated with the severity of the clinical symptoms, CAT Scan was carried out three hours after admission, revealing a round, cavitated image (9cm), with hydroaerial level and residues that moved with change of position (water lily sign typical of hydatid cyst) located in the left lower lobe.

Given the evidence of a pulmonary hydatid cyst, partially drained by bronchial fistulization, and the associated infection, a provisional diagnosis of infected pulmonary hydatid cyst was made. Under wide spectrum i.v. antibiotic therapy (Ceftazidime, Netilmicin and Metronidazole), the patient underwent thoracotomy 24 hours after admission.

Surgery confirmed the existence of hydatid cyst located in the internal and anterior basal segments of

*Resident to the Internal Medicine Supplementary Internship

** Resident to the Radiology Supplementary Internship

***Senior Hospital Assistant

the left lower lobe, without liquid content, and significant pleural effusion containing "germ membranes" (bronchial-pleural fistulization). The cyst was totally excised and presented suppuration. Histological exam confirmed pyogenic infection of a pulmonary hydatid cyst. Direct and culture investigation of the pus collected during surgery were negative. There were no postoperative complications, with rapid resolution of the infection presented on admission.

Serology for Echinococcus granulosus carried out by indirect hemaglutination revealed positive titer of 1/3,280. The patient was placed on Mebendazole, 100mg t.i.d., which was maintained for six months, returning to his professional activity with no restrictions.

Discussion

Hydatidosis is a parasitic infection that is widely known and studied. The pulmonary disease represents approximately 40% of known locations, and the hydatid cyst can burst in about 20% of cases.[2] Suppuration of a pulmonary hydatid cyst as a primary manifestation of the disease, as in the case presented here, is a rare situation, and rupture of the cyst occurs in 7-17% of cases, according to literature.[3] The clinical similarity to other acute pulmonary suppurative conditions (pulmonary abscess and necrotizing pneumonia) frequently causes difficulty in diagnosis and in quickly determining the most appropriate therapy.[1,3,4,5]

The identification of vomica, which typically emerges in a previously healthy individual, associated with a sudden episode of productive cough with emission of a variable quantity of salty liquid, are essential for diagnosis.[2,5] Where possible, direct examination of the vomica is useful, as this may reveal characteristic "germ membranes" [2,5] under the microscope.

In the specific situation of infection of the cystic cavity, the infecting agent is rarely isolated, probably due to the difficulty in collecting material. The particular environment of the infection site, as well as the surgical procedure itself, may also justify the relative difficulty found in isolating the microorganisms involved.[1,2,3,5] The infecting agents most frequently found are Haemophilus influenza and Staphylococcus aureus.[1,2,6]

The differential diagnosis with other pathologies of similar course and outcome, namely pneumonia and/or pulmonary abscess, can be made quickly, through the identification of "germ membranes" in direct examination of the expectoration.[1,5] Where this is not possible, radiological documentation of the cyst and its characteristics (cavity with movable residues; no water lily sign, typical in hydatid cysts) is equally important. Positive serology for Echinococcus granulosus with significant titer (higher than 1/320), even if possible only in a later diagnostic period, is also very useful.

The therapy is surgery, and prophylaxis should be performed should be carried out, using Mebendazole or Albendazole, to avoid recurrence.[2,3,6] ■

References

1. Desmond CS, Wolf R. Presentation of Echinococus infection as lung abcess. Tropical and Geographical. Medicine 1991;43:297-299.

2. Aytac A, Yurdacal Y. Olga R. Pulmonary hydatid disease: report of 100 cases. Annals of Thoracic Surgery 1977,23:145-151.

3. Schantz PM, Okelo GBA. Up-to-date review of human infection with Echinococosis. Tropical and Geographical. Medicine 1990,42:505-518

4. Thomov V. Contribution au problème de l'infection echinococcique pulmonaire aerogene. Archivos Internationales de la Hidaditose 1956,16:539-546.

5. Bakir F. (1982). Serious complications of hydatid disease of the lung. American Review of Respiratory Disease 1982;96:483-493.

6. Davidson CR. Hydatic cysts of the lung. American Journal of Surgery 1955,89:1042-1053.