

Rare Case of Giant Pulmonary Hydatid Cyst in a Female Patient Living in Taiz Governorate

T Al-Harazi¹, HY Turkey², AM Al-Kamali³

ABSTRACT

Pulmonary hydatid cyst is a common disorder in many areas of the world. In Yemen, echinococcosis is an endemic disease, however, hydatid disease of the lung is uncommon and usually caused by Echinococcus granulosus. We present a case of a 23-year old female who complained of shortness of breath, dry cough and left-sided dull aching pain for the past few weeks. Chest X-ray revealed a large, well-demarcated mass involving the left mid and lower lung zones with mediastinal shift to the right. Computed tomographic scan revealed a giant, low attenuation fluid density mass with enhancing wall. The diagnosis of giant hydatid cyst was confirmed by surgery and histopathological examination. Pulmonary hydatid cyst can assume a very large size without causing any symptoms and can be discovered incidentally while performing chest X-ray for another reason.

Keywords: Albendazole, cystic echinococcosis, pulmonary hydatid cyst, Yemen

Un raro caso de quiste hidatídico pulmonar gigante en una paciente de la gobernación de Taiz

T Al-Harazi¹, HY Turkey², AM Al-Kamali³

RESUMEN

El quiste hidatídico pulmonar es un trastorno común en muchas áreas del mundo. En Yemen, la equinocosis es una enfermedad endémica. Sin embargo, la hidatide pulmonar es una enfermedad poco frecuente, generalmente causada por el Echinococcus granulosus. Presentamos el caso de una mujer de 23 años aquejada de falta de aliento, tos seca, y dolor sordo intenso del lado izquierdo durante las últimas semanas. La radiografía del pecho reveló una masa grande, bien demarcada que implicaba las zonas bajas y medias del lado izquierdo del pulmón, con desplazamiento mediastinal hacia la derecha. La tomografía axial computarizada reveló una masa gigante de líquido de baja atenuación con aumento de la pared. El diagnóstico de quiste hidatídico gigante fue confirmado mediante cirugía y examen histopatológico. El quiste hidatídico pulmonar puede suponer un gran tamaño sin causar ningún síntoma, y puede ser descubierto incidentalmente al realizar una radiografía de tórax por otro motivo.

Palabras claves: albendazol, hidatidosis, quiste hidatídico pulmonar, Yemen

West Indian Med J 2016; 65 (2): 395

INTRODUCTION

Hydatidosis is one of the most important zoonotic diseases in the world (1). Its life cycle involves dogs as definitive hosts and sheep as intermediate hosts (2). Humans contract the disease from water or food or by direct contact with dogs. Giant pulmonary hydatid cyst is usually encountered in adolescents and children who are older than 10 years. A relatively higher

elasticity of the lung tissue allows rapid growth of cysts (3). The liver is the most common involved site, followed by the lungs (4, 5). It is endemic in many countries, and Yemen is one of the endemic regions (6).

CASE REPORT

A 23-year old female patient from Taiz Governorate, Yemen,

From: ¹Department of Clinical Microbiology and Parasitology, ²Department of Internal Medicine, and ³Department of Surgery, Faculty of Medicine, Taiz University, Yemen.

Correspondence: Dr T Al-Harazi, Department of Clinical Microbiology and Parasitology, Faculty of Medicine, Taiz University, Taiz 3086, Yemen. E-mail: alhraziali@yahoo.com

presented with shortness of breath, dry cough and left-sided dull aching pain for the past few weeks. On physical examination, the patient had dullness to percussion and decreased breath sounds over the mid and lower left hemithorax and absent apex beat. Her white blood cell count was $1200/\text{mm}^3$ cells with 30% eosinophils. Enzyme-linked immunoabsorbent assay was positive 31 IU/L (positive > 11) for echinococcosis. A chest X-ray revealed a large, well demarcated mass involving the left mid and lower lung zones with mediastinal shift to the right (Fig. 1). A computed tomography (CT) scan with intravenous contrast (Fig. 2) revealed a large ($13 \text{ cm} \times 14.5 \text{ cm} \times 17 \text{ cm}$), low attenuation fluid density mass with enhancing wall.



Fig. 1: Posterior-anterior chest X-ray shows a large, smoothly margined homogenous mass involving the mid and lower lung zone pushing the heart to the right.

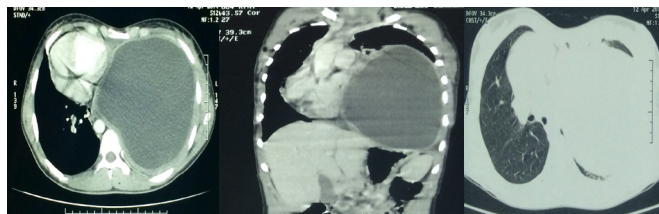


Fig. 2: A) Axial soft-tissue view. Contrast enhanced computed tomography (CECT) shows a large cystic lesion containing fluid with attenuation values similar to water (Hounsfield unit) with well enhanced wall with shifting of the heart to the right and compressing atelectasis of the left lower lobe. B) Coronal soft-tissue view of CECT showing the craniocaudal extension of the cyst measuring $13 \text{ cm} \times 14.5 \text{ cm} \times 17 \text{ cm}$, with a mass effect pushing the heart to the right. C) Lung window showing compressing atelectasis of the left lower lobe.

A presumed diagnosis of pulmonary hydatid cyst was established and the patient was given albendazole 400 mg twice a day and sent for surgery. During surgery, cystectomy with capitonnage of the cyst was performed (Fig. 3). After that, the surgical specimen was sent for histopathological examination and revealed the folded lamellar acellular translucent light pink chitinous layer which is diagnostic of hydatid cyst (Fig. 4).

DISCUSSION

Echinococcosis in humans occurs as a result of infection by the larval stages of taeniid cestodes of the genus *Echinococcus*. Pulmonary hydatid disease affects the right lung in 60% of cases (7). Pulmonary cysts typically increase in diameter at a rate of 1–5 cm/year (8). Symptoms due to tissue compres-



Fig. 3: Hydatid cyst membrane (gross picture).

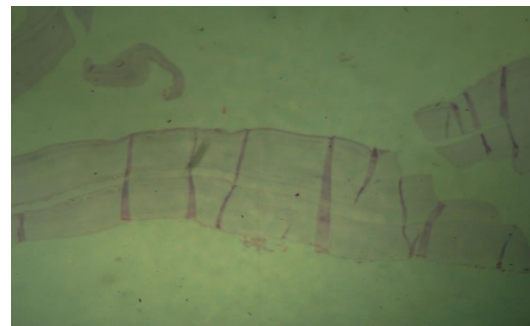


Fig. 4: Microscopic picture showing folded lamellar acellular translucent light pink chitinous layer of hydatid cyst.

sion by giant pulmonary hydatid cyst are present as dry cough, chest pain, dyspnoea, and ruptured cyst can cause productive cough and, very rarely, anaphylaxis (3). In our patient, shortness of breath, dry cough and left-sided dull aching pain were present at admission. Biochemical and physical examination findings have limited value in diagnosis of pulmonary hydatid disease (9).

In our laboratory investigation, total leucocyte count was $1200/\text{mm}^3$ cells with 30% eosinophils. Serological tests have limited diagnostic value and enzyme-linked immunoabsorbent assay was positive in less than 50% cases of pulmonary hydatid cyst. Enzyme-linked immunoabsorbent assay was positive in this case.

The chest X-ray and thoracic CT are generally sufficient for diagnosis of hydatid cyst (10). The operative findings showed the whitish laminated membrane indicative of hydatid cysts (Fig. 3).

The conventional treatment of hydatid cysts in all organs is surgery. Surgical methods related to pulmonary cysts include cystotomy and enucleation of the intact cyst, with or without capitonnage. The current treatment of hydatid disease of the lung is complete excision of the cyst, including the germinative membrane, with the maximum preservation of lung tissue (11).

CONCLUSION

Pulmonary hydatid cyst can assume a very large size without causing any symptoms and can be discovered incidentally while performing chest X-ray for another reason.

REFERENCES

1. Tekinbas C, Turedi S, Gunduz A, Erol MM. Hydatid cyst disease of the lung as an unusual cause of massive hemoptysis: a case report. *J Med Case Rep* 2009; **3**: 21.
2. Cornejo-Juárez P, Espinosa-Altamirano A, Ibarra-del-Río M, Pacheco-Bravo I, Volkow-Fernández P. Cystic echinococcosis: a disease mimicking cancer in a non-endemic country: report of two cases. *West Indian Med J* 2013; **62**: 266–9.
3. Kayhan S, Sahin U, Turut H, Yurdakul C. An unusual radiological presentation of a pulmonary hydatid cyst in a child. *J Clin Imaging Sci* 2013; **3**: 20. DOI: 10.4103/2156-7514.111238.
4. Moro P, Schantz PM. Echinococcosis: a review. *Int J Infect Dis* 2009; **13**: 125–33.
5. Guerrant RL, Walker DH, Weller PF. Tropical infectious diseases: principles, pathogens and practice. Philadelphia: WB Saunders; 1999.
6. Ghallab NH, Alsabahi AA. Giant viable hydatid cyst of the lung: a case report. *J Med Case Rep* 2008; **2**: 359.
7. Thümler J, Muñoz A. Pulmonary and hepatic echinococcosis in children. *Pediatr Radiol* 1978; **7**: 164–71.
8. Kratz A, Ferraro M, Sluss PM, Lewandrowski KB. Case records of the Massachusetts General Hospital. Weekly clinicopathological exercises. Laboratory reference values. *N Engl J Med* 2004; **351**: 1548–63.
9. Kayhan S, Akgüneş A. Histopathologically diagnosed pulmonary complicated hydatid cyst cases. *Turkish J Parasitol* 2011; **35**: 189–93.
10. Beggs I. The radiology of hydatid disease. *Am J Roentgenol* 1985; **145**: 639–48.
11. Erdogan A, Ayten A, Demircan A. Methods of surgical therapy in pulmonary hydatid disease: is capitonnage advantageous? *A N Z J Surg* 2005; **75**: 992–6.