

Case Report

Primary Pulmonary Hydatid Disease

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Abstract

Echinococcosis is a parasitic disease endemic in many parts of the world. Liver is the most common affected organ followed by lungs. However, the infestation of the latter is usually secondary to another infected organ system. Symptoms are not specific and can be produced by the mass effect or cyst complications. In the article we are reporting a case of pulmonary echinococcosis in a middle aged male, where the patient presented with symptoms of fever, cough with expectoration, weight loss and dyspnea. An extensive work-up showed no other foci of infestation, hence final diagnosis was done based on chest radiography and tomography scan findings and was successfully treated with Albendazole.

Keywords : Pulmonary Echinococcosis, Albendazole.

Introduction:

Echinococcosis is a zoonosis caused by tapeworms of the genus *Echinococcus*. The most medically important forms are cystic echinococcosis (CE), caused by *E. granulosus*, and alveolar echinococcosis, caused by *E. multilocularis*¹. They are the most important members of the genus in respect of their public health importance and their geographical distribution. Hydatid disease is endemic in sheep raising countries. It is rarely seen in Malaysia and Singapore.²The life cycle of *Echinococcus* is indirect and involves two hosts, one definitive carnivore host and the other intermediate herbivore host³. The problem arises when humans act as an accidental intermediate host and ingest viable oncosphere-containing eggs, which have been shed in the faeces of the definitive host. Larvae that are released from the eggs, penetrate the intestinal lining and are transported by blood or lymph to different organs¹. The liver and the lungs are the most commonly affected organs². The hydatid cyst grows slowly and in some cases do not cause symptoms for years. Imaging methods and serology establish the diagnosis in most cases. However, diagnosis of a complicated hydatid cyst is difficult and usually delayed⁴. However, primary hydatid disease of lung is uncommon. We report one such case of primary pulmonary hydatid disease in a middle age male in our setting.

Case Report:

A 57 years old male came with complaints of chest pain of one week duration which was constant, pricking type in nature, localized in the left infra mammary region without any radiation. There was no history of trauma, fever, cough, hematemesis, hemoptysis, breathlessness, sweating, and loss of weight or appetite. He is diabetic and hypertensive for the past 7 years and his family history was non-contributing to the present complaints. On examination, patient was afebrile (temperature-98.4 F), pale, tachycardic (Pulse-120/min), tachypnoeic (Respiratory rate-30/min), BP-140/100 mm Hg and hypoxic SpO₂-85% on room air. Systemic examination of the respiratory system revealed decreased chest expansion of the left side with dullness on the interscapular and left infrascapular region. There was bibasilar crepitation with left basal bronchophony on auscultation. Other systemic examination was unremarkable.

Investigation showed- Haemoglobin 12.30g/dl; white cell count 18,000/ cmm; neutrophils 84%, lymphocytes 7%, monocytes 2%, eosinophils 12%, reticulocyte count 3%. Peripheral blood film showed moderate hypochromia, microcytes, poikilocytes and polychromatic cells. Serum iron 35ug/dl, total iron binding capacity 280ug/dl, Serum Bilirubin 1.2mg/dl, ALT 34 U/L, AST 61 U/L, Alkaline phosphatase 18 U/L. Urea and electrolytes were normal. Chest radiograph showed left basal consolidation with left basal pleural effusion (Fig-1).

A provisional diagnosis of left basal pneumonia with left sided pleural effusion was made and it was evaluated further. Viral serology (HIV, HBSAg, HCV) was negative. The patient was started on intravenous broad spectrum antibiotics and pleural tap was planned.

Pleural fluid analysis showed Protein- 53 g/L, Glucose-27 mg/dL, Cell count 40,000/cmm among which neutrophil 98% and lymphocyte 2%. Chest Ultrasonography revealed a large anechoic lesion on the left side with left sided pleural effusion. Spiral CT scan of chest showed fairly large almost oval shaped low attenuated area measuring about 8.5cm x 3.8 cm in left postero lateral chest (Fig-2). Medially confluent

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with left para vertebral margin. Diffuse soft tissue density areas are also noted around it, there is also evidence of large well-defined thick walled enhancing multiloculated cystic lesion of water attenuation with multiple daughter cysts and attached vesicles in the left mid and lower zones measuring 96 x 83 mm with erosion of bronchioles in the pericyst. Echo showed no evidence of cysts in heart. CT scan of abdomen and brain performed to locate other cysts in liver or elsewhere was negative.

A diagnosis of primary hydatid lung disease was made and treated conservatively with Tab Albendazole 400mg, twice daily for 6 months.

The patient came to regular follow-up in the outpatient clinic and was asymptomatic during this period and no recurrence was observed.

Discussion:

Hydatid disease is a parasitic infestation caused by *Echinococcus Granulosus*^{5,6}. It is endemic in many countries and Yemen is one of the endemic regions⁷. The lungs are the second most common sites for hydatid cysts after the liver^{5,6}. Humans contract the disease accidentally from water or food or by direct contact with dogs⁸. The organism can reach the lung in many ways either secondarily during circulation after it crosses the liver, via lymphatic vessels bypassing the liver, following intrathoracic rupture of a cyst of the liver, or by inhalation of the eggs causing primary lung disease⁹⁻¹². Pulmonary hydatid disease affects the right lung in 60% of cases, 30% exhibit multiple pulmonary cysts, 20% bilateral cysts and 60% are located in the lower lobes¹³. Primary echinococcosis is usually diagnosed incidentally on chest radiographs taken for other purpose. Occasionally, an unruptured cyst may result in cough, hemoptysis and chest pain. Rupture of the cyst either following a trauma or iatrogenically results in release of antigenic material into the blood stream resulting in secondary immunological reactions. Routine laboratory tests usually do not show any specific results, although there may be eosinophilia in a few patients. Indirect hemagglutination test is positive in only 50% of pulmonary hydatidosis. Plain chest radiograph is the most important diagnostic method in pulmonary hydatidosis demonstrating one or more homogenous round or oval masses with smooth borders surrounded by normal lung tissue⁸. The management involves surgical excision of the cyst by either lobectomy, wedge resection, pericystectomy, intact endocystectomy or capitonage¹⁴. Puncture, aspiration, injection of helmenthicide and reaspiration (PAIR) although advocated in hepatic cysts is usually not advised in lung cysts as the technique results in more complications. Medical management involves long term treatment with benzimidazoles, either albendazole or mebendazole. There are no formal recommendations on how the patients are to be monitored during follow-up, and this needs to be individualized⁸.

In the present case, the patient presented with symptoms suggestive of pneumonia and pleural effusion which lead to the decision of pleural tap. The patient improved drastically once the correct diagnosis was made and appropriate therapy was performed.

Conclusion:

In conclusion, the differential diagnosis of pulmonary hydatidosis has to be borne in mind in all patients presenting with chest symptoms, especially in endemic and hyperendemic regions. A plain chest radiograph would be helpful in ruling out the differential in most situations. However caution is advised during any invasive procedure as the manifestation of the disease is protean. Non-complicated hydatid cysts have a good prognosis regardless of their size and can be safely treated.

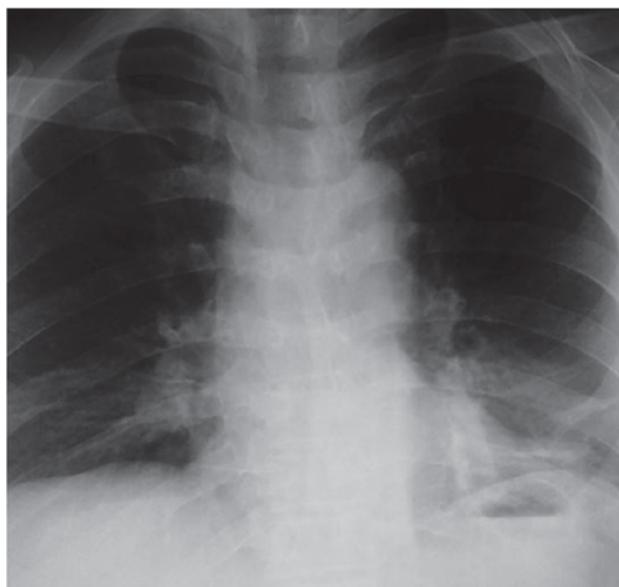


Fig-1: Showed left basal consolidation with left basal pleural effusion

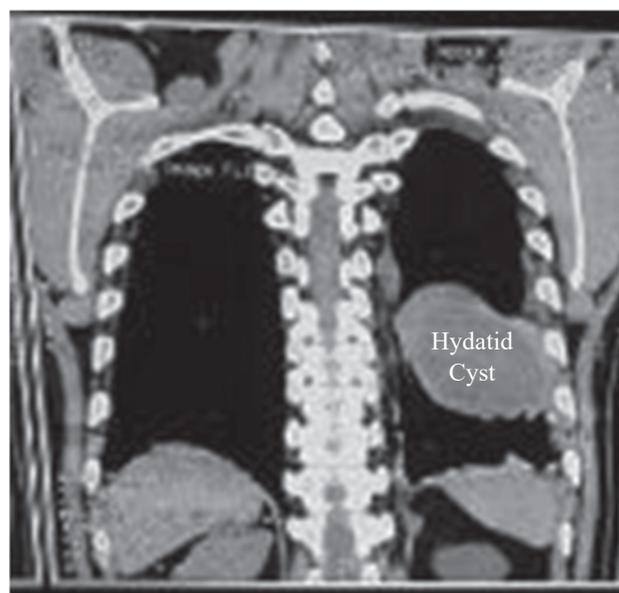


Fig-2: Spiral CT scan of chest showed fairly large almost oval shaped low attenuated area measuring about 8.5cm x 3.8 cm in left postero-lateral chest

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