PRIMARY PULMONARY ECHINOCOCCOSIS:
A CASE REPORT

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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. In the present report, we report a case of pulmonary echinococcosis in a middle age female. An extensive work-up showed no other foci of infestation, hence diagnosed a case of primary pulmonary echinococcosis. Patient underwent left posterolateral thoracotomy and excision of the cyst followed by a course of albandazole. In summary, Pulmonary Echinococcosis should be considered in patients presenting with chest symptoms, especially in endemic and hyperendemic regions.

KEYWORDS

Pulmonary Echinococcosis; thoracotomy; albandazole

INTRODUCTION

Echinococcosis, also known as hydatidosis is one of the most important zoonotic diseases in the world. In India, Echinococcosis is an endemic disease and is more commonly seen in the Kurnool district of Andhra Pradesh, Madurai district of Tamil Nadu and in Punjab (1). Liver and lung are the most common sites of cyst formation and usually caused by Echinococcus granulosus but it can also be seen elsewhere in the body (2). However, primary hydatid disease of the lung is uncommon. We report one such case of primary pulmonary echinococcosis in a middle age female at our setting.

CASE REPORT

A 40 year old female came with complaints of chest pain of one week duration which was constant, pricking type in nature, localized the left infra-
mammary region without any radiation. There was no history of trauma, fever, cough, haematemesis, haemoptysis, breathlessness, sweating, and loss of weight or appetite. There was no history of co-morbidities and her past and family history was non-contributing to the present complaints.

On examination, patient was afebrile, pale, tachycardic, tachyapnoeic and hypoxic (Pulse-120/min, BP-120/70 mm Hg, Respiratory rate-30/min, temperature-98.4 F, SpO2-85% on room air). Systemic examination of the respiratory system revealed decreased chest expansion of the left side with dullness of the left interscapular and infrascapular region. There was basal crepitation with bronchophony on auscultation. Other systemic examination was unremarkable. Routine blood investigations were within normal limits. Chest radiograph showed left basal consolidation with left basal pleural effusion.

A provisional diagnosis of left basal pneumonia with left sided pleural effusion was made and it was evaluated further. Viral serology (HIV, HbS Ag, HCV) was negative. The patient was started on intravenous broad spectrum antibiotics and pleural tap was planned. During the procedure, patient developed sudden onset dyspnœa, vomiting and cough followed by urticaria. Her saturations dropped to 82% and blood pressure was 110/70 mm Hg. Patient was started on intravenous steroids following which the symptoms subsided.

Pleural fluid analysis showed Protien-0.1 g/dL, Glucose-27 mg/dL, Cells-lymphocytes with occasional mesothelial cells. Chest Ultrasonography revealed a large anechoic lesion on the left side with multiple daughter cysts of varying sizes in it suggestive of hydatid cyst and left sided pleural effusion. Chest CT scan showed 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 110 x 83 mm with erosion of bronchioles in the pericyst. On contrast enhanced CT, the mass showed dense circular area of increased attenuation within the cyst representing detached membranes suggestive of hydatid cyst. 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 pulmonary echinococcosis was made and thoracotomy was performed. Upon left posterolateral thoracotomy, there was a cystic swelling, embedded in the left lower lobe, which was gently dissected from the left lower lobe and the surrounding structure, diaphragm. Cyst was opened to facilitate dissection, as it was adherent to the diaphragm due to secondary infection. Large cystic cavity 10cm x 15cm, with multiple daughter cysts was removed carefully. Haemostasis was achieved and intercostal drain kept in situ. Histopathology of the operative specimen confirmed the diagnosis of hydatid cyst. The postoperative stay was uneventful and the patient felt symptomatically better. She was discharged on 5th postoperative day with albendazole 400 mg once daily for a month and advised for regular follow-up.
DISCUSSION

Humans contract the disease accidently from water or food or by direct contact with dogs (3). 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 disease (4-7). 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 lobes (8). 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 bloodstream 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 tissue (3). The management involves surgical excision of the cyst by either lobectomy, wedge resection, pericystectomy, intact endocystectomy or capitonage (9). 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 individualized (3).

In the present case, the patient presented with symptoms suggestive of pneumonia and pleural effusion which lead to the decision of pleural tap. The spillage of antigenic material from the cyst during the procedure resulted in allergic reaction and manifested as dyspnoea, vomiting, cough and urticaria. The patient improved drastically once the correct diagnosis was made and appropriate therapy was performed.

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.

REFERENCES