Pulmonary Hydatid Cyst Presenting with Massive Haemoptysis in a Child – An Unusual Presentation: A Case Report

BHANU KIRAN BHAKHRI, RICHA ARORA, LAVANYA P, PREMILA PAUL

ABSTRACT

Echinococcosis (Hydatidosis) is an endemic disease in India. Hydatid disease of the lung, though uncommon, is a well described entity. We describe here, a 10-year-old girl with pulmonary hydatidosis, who had an unusual clinical presentation and investigational findings.

Key Words: Pulmonary hydatidosis, Haemoptysis, Albendazole

INTRODUCTION

Echinococcosis is an important zoonotic disease with a reported annual incidence which is as high as 13-27 cases per 1,00,000 population in certain countries of central Asia e.g Tajikistan [1].

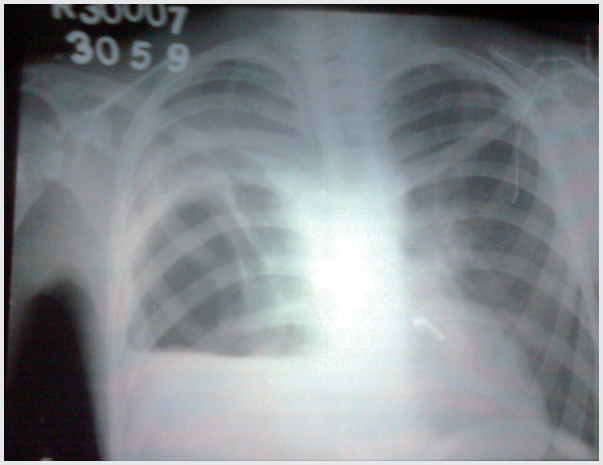
In India, the disease is endemic due to various sociocultural practices. The lung is a known site for the hydatid cyst and when it is present, usually the disease presents subsequent to secondary infection [2]. We describe a patient with hydatid cyst of lung, with unusual presentation and findings.

CASE REPORT

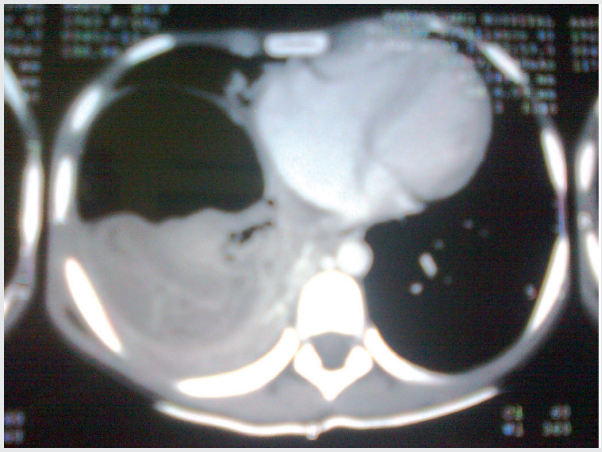
A ten-year-old female patient from the state of Bihar, with a farmer's background, presented with a history of cough, fever and weight loss with haemoptysis (bright red in colour), on and off for the past 2 years. The haemoptysis episodes had increased over the past 1 month period. She was admitted to the emergency department following a bout of massive haemoptysis, a day before admission. There was no history of chest trauma, foreign body inhalation or contact with a case of tuberculosis. However, there was a history of exposure to pet dogs and cattle. Based on the clinical findings, she was given antitubercular treatment for nine months by a private practitioner, but there was no improvement.

On examination, she was found to be conscious and severely pale, her blood pressure was 100/60 mm of Hg, her pulse rate was 110 beats per minute, her respiratory rate was 26 breaths per minute and her body temperature was 37.8°C. There was no rash, jaundice, lymphadenopathy or hepatosplenomegaly. Bronchial breathing and coarse crepts were heard along the right infrascapular area. The rest of the systemic examination was within normal limits. With these findings, she was started on antimicrobial therapy along with supportive measures in the form of parenteral (intravenous) fluids and packed cell transfusion.

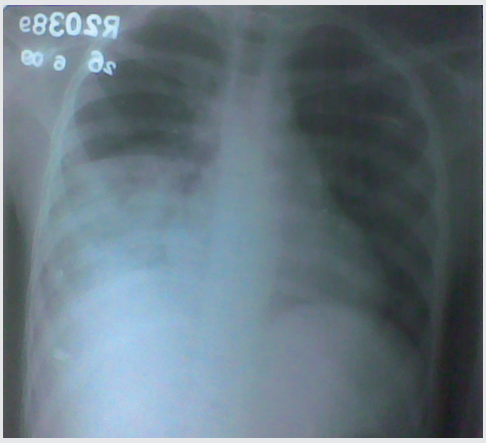
Investigations revealed haemoglobin (Hb) to be 3.0 g/dl, with platelet counts of 2.3 lacs/cmm and a total leucocyte count of 9300cells/cmm. Prothrombin time, activated partial thromboplastin time and liver functions (LFT) were within normal limits. A 4 cm × 4 cm circular lesion, with smooth margins and an air fluid level inside, was present in the right, lower lung field on the X-ray of the chest [Table/Fig-1]. In the background of the clinical presentation, the possibility of lung abscess, infected congenital cyst, invasive fungal disease and hydatid cyst was suspected. The CECT scan [Table/Fig-2] of the thorax revealed a cystic lesion which was 4 cm in diameter, in the posterior segment of the upper lobe of the right lung and multiple lesions neighbouring the former, some of which were cystic and the others solid (the largest was 2 cm in diameter), which were suggestive of a hydatid cyst . A similar lesion measuring



[Table/Fig-1]: Chest radiograph showing circumscribed shadow with fluid level



[Table/Fig-2]: CECT scan showing cystic lesion in right lower lung field with hetrogenous contents



[Table/Fig-3]: Chest radiograph after 4 weeks albendazole therapy showing resolving lesion

2 cms was revealed in the superior segment of the lower lobe of the right lung. ELISA for echinococcus was positive.

Massive haemoptysis persisted till the third day of hospitalization and three units of packed cells were transfused. A surgical consultation was taken and it was decided to initially treat her medically and to evaluate for surgical intervention afterwards. Subsequently, oral albendazole therapy was started. The patient showed improvement with no further haemoptysis and decreased respiratory distress. The patient was discharged after two weeks, on albendazole therapy. A follow up chest X- ray after 3 months of albendazole therapy showed improvement, with a partial resolution of the opacity [Table/Fig-3].

DISCUSSION

Zoonotic disease is any infectious disease that affects animals and can be transmitted to humans. It can be bacterial (anthrax, brucellosis), fungal (cryptococcosis, dermatophytosis), parasitological (threadworm, whipworm) or viral (rabies) in origin. Echinococcosis is a zoonotic disease which affects humans in most parts of the world. Humans are accidental intermediate hosts that become infected by handling soil, dirt or animal hair that contains eggs. A large number of cattle raising communities, a huge population of farm animals and a high incidence of cystic echinococcosis in the animal population [3], make the zoonosis in India important.

The common organs which are infected with hydatid cysts are the liver, the lung and the brain. In patients with hydatid cysts at multiple sites, upto 26.30% of the cysts may be located in the lungs [4]. Patients with pulmonary echinococcosis usually present with cough, chest pain and dyspnoea. 19% patients can have haemoptysis as one of the manifestations of the disease [5]. Haemoptysis as a presenting manifestation, is common in adult cases, although massive haemoptysis is rare. The mechanism of haemoptysis may be due to the pressure erosion of the bronchus or due to an obstructive effect with bronchial infection. There may be an occasional rupture of the cyst into the bronchus, resulting in massive haemoptysis. The underlying aetiology for haemoptysis may be unknown in 20% of the cases. The disease is reported to have diverse radiological findings such as homogeneous opaqueness (61%), diverse opaqueness (26%), an image of lung abscess (22 %), an aspect of floating membrane (4 %), a pleural effusion (9%), and an opaqueness with growing gas (4%) [2]. Eleven percent (11%) of the pulmonary radiography findings can be nonspecific and noncontributory to the diagnosis [5]. A number of serological tests are available to support this diagnosis. Though the sera of the patients with pulmonary hydatidosis can have a low reactivity on the serological tests, the overall diagnostic efficacy of ELISA by using the purified antigen B rich fraction is 92.30% [6].

Both medical and surgical therapeutic modalities are available for this disease. Being mostly considered as a supplement to surgical excision, medical cysticidal therapy with albendazole alone for one year's duration, has recently been reported to have favourable outcomes in 41.10% to 57.70% of the patients with pulmonary hydatidosis [4,7].

CONCLUSION

Hydatid disease of the lung can present as massive haemoptysis. Although it is one of the less common causes of massive haemoptysis, hydatid disease of the lung requires greater attention in countries like India, where the hydatid cyst disease is very common.

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