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CASE REPORT

Pulmonary Paragonimiasis, a rare cause of haemoptysis



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KEYWORDS

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Abstract It is a case of persistent haemoptysis presented at the OPD of the Department of Respiratory Medicine. The HRCT thorax picture showed a mass like subpleural nodule in the right lower lobe of the lung with central cavitation and adjacent bronchiectasis. CT-guided FNAC of the nodule showed oval shaped eggs of *Paragonimus* species in the smear prepared. *Paragonimus* eggs were found in the sputum and specific serological test for *Paragonimus* was also positive.

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Introduction

Pulmonary Paragonimiasis is a known cause of persistent haemoptysis. The diagnosis is easily missed at first as it is a very rare foodborne zoonotic parasitic disease caused by the species of the genus *Paragonimus*. It is endemic in Asia, North America and Africa [1]. Freshwater snails, crabs and crayfish are intermediate hosts. Natural definite hosts are wild mammals of canidae and felidae families commonly and less commonly humans. Humans get infected after eating uncooked or undercooked crustaceans containing metacercariae. Another way of getting infection in humans is by ingestion of poorly cooked meat of pig and wild boar containing the larval stage of the parasite [2,3].

The disease usually involves the lung, but extra-pulmonary infections are known. The diagnosis is confirmed by a specific serological test or demonstration of ova in sputum or other specimens like pleural fluid, faeces or tissue sample and specific serological test.

Case history

A girl, aged 18 years came to the OPD, Department of Respiratory Medicine, in the month of May 2015, with complaints of recurrent haemoptysis, cough and loss of weight, for 3 months. She was earlier diagnosed as Pneumonia by clinicians and radiologists and treated with antibiotics without any improvement. She developed a mild pricking type of chest pain in the last week. The amount of blood in the sputum was about 50 ml per day. She did not have any history of fever. The clinical physical examination could not reveal any abnormality. Complete haemogram results were: Haemoglobin-12.6 g%, TLC-6600/dl, DLC: Neutrophils-48%, Lymphocytes-32%,

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Monocytes-7%, Eosinophils-13%, Platelet count-153,000/dl, ESR-20 mm/1st hour, showing mild eosinophilia. Quantiferon Gamma test for Tuberculosis was negative. Upper G.I. video-endoscopy showed antral gastritis. She was negative for HIV and Plasma Random sugar was 90 mg/dl.

The Chest X-ray of this case showed a small area of non-homogenous opacity in the right lower zone (see Fig. 1). HRCT of the thorax showed a mass like nodular lesion with bronchiectasis in the lower lobe (see Figs. 2-5). There was an area of necrosis inside the mass. CT guided FNAC was performed by a team of radiologists, pathologists and chest physicians in the next day. The FNAC report came as Pulmonary Paragonimiasis, as numerous oval shaped operculated eggs of Paragonimus species were seen in the smear prepared from the FNAC sample. Sputum was later tested and eggs of the same parasite (see Figs. 6 and 7). Serological test for Paragonimiasis was also positive. Patient was put on Praziquantel, 25 mg/kg three times a day for 2 days, at the time of preparing this report.

Discussion

Pleuro-pulmonary Paragonimiasis is a rare food-borne important zoonotic disease reported in North-eastern India [4]. It is reported to occur after ingestion of poorly cooked or raw crabs or cray-fishes. The metacercariae form of the parasite reaches and penetrates the human intestine to enter the abdominal cavity. Larvae reach the peritoneal cavity and then penetrate the diaphragm to reach the thoracic cavity. The parasite

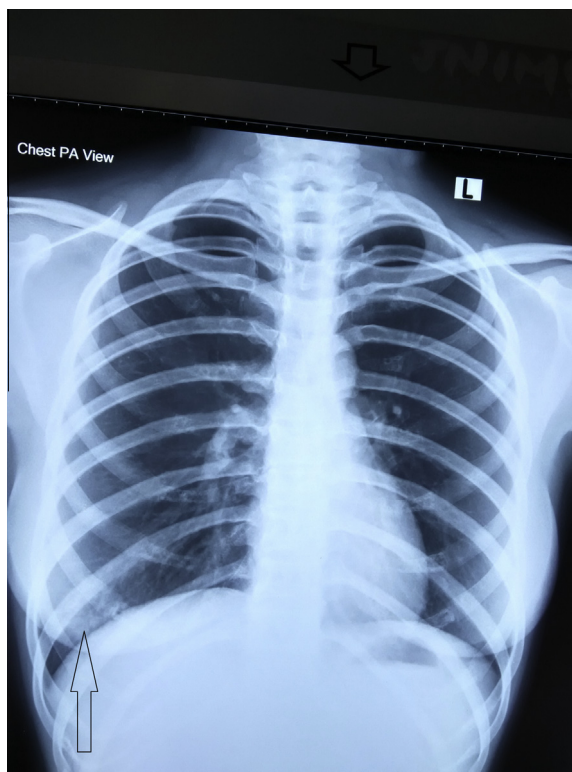


Figure 1 Chest X-ray PA view showing non-homogenous opacity in the right lower zone.

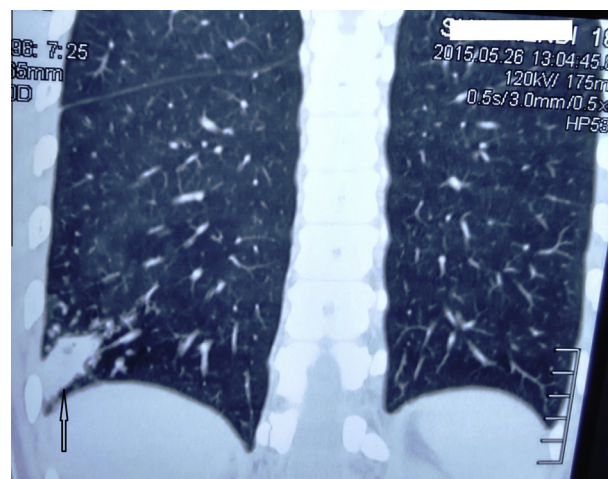


Figure 2 Coronal section of CT-thorax showing a mass like nodule in the right lower lobe.

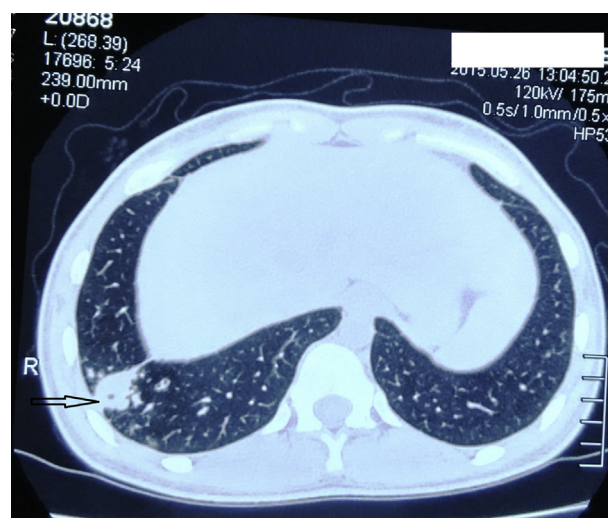


Figure 3 Axial section CT-thorax showing a nodule with central cavitation.

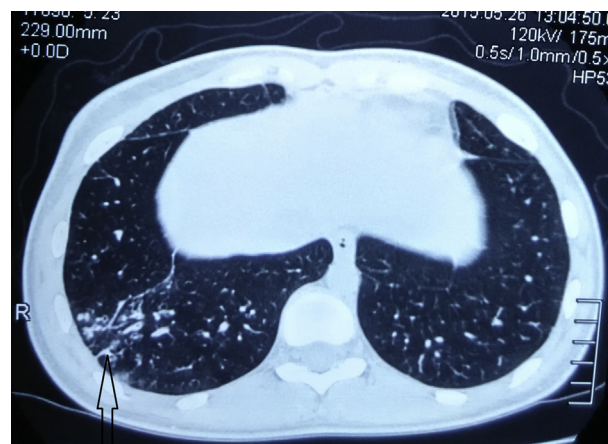


Figure 4 Axial section CT-thorax showing bronchiectasis.

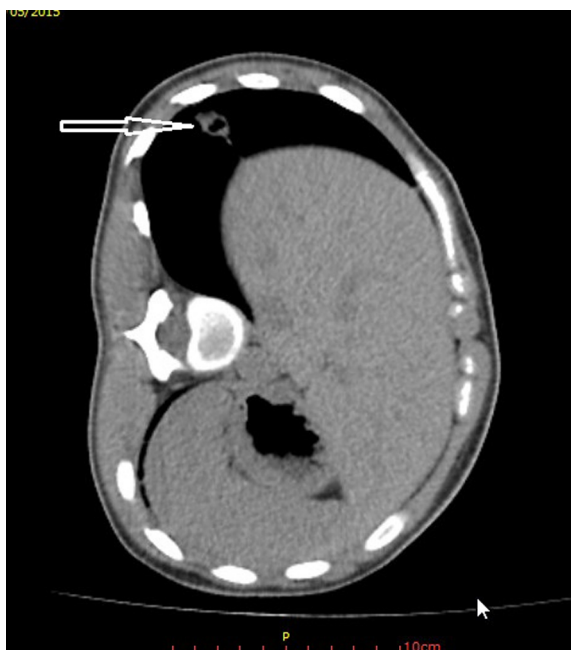


Figure 5 Another axial section of CT-thorax showing bronchiectasis.



Figure 6 Shows egg of unstained smear of a fine needle aspirate of lesion.

invades the lung to form worm cysts, the cyst maturing into the adult worm to start laying ova [5].

It is also a very rare, but known cause of persistent haemoptysis. Many cases are diagnosed and treated initially as pneumonia, tubercular pleural effusions and sputum smear negative pulmonary tuberculosis. Clinically, it is often similar to the presentation of these diseases, and sometimes very confusing to the busy clinician and radiologist. A few peculiar radiological findings especially in the CT scan of the thorax and demonstration of eggs in sputum and other samples will confirm the diagnosis. Peripheral eosinophilia is also common.

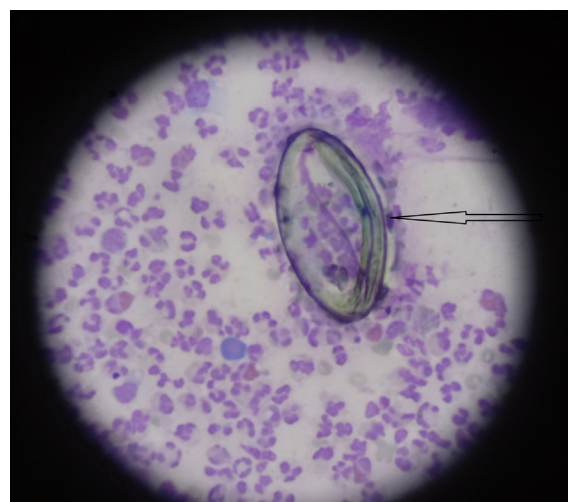


Figure 7 Shows yellowish brown, ovoid and operculated eggs in a stained smear of fine needle aspirate of the lesion.

Pleural effusion of varying severity in chest X-ray was reported (22–61%). Other findings are patchy airspace consolidation (opacity) with or without pleural effusion, pleural reaction or pleural thickening. Nodular opacities are commonly seen [6,7]. CT scan of the thorax is found as a better technique to visualize lesions in the lung. Poorly marginated (74%), sub-pleural or subfissural (58%), nodule of about 2 cm in diameter (58%), that contained a necrotic low-attenuation area (58%) was frequently seen in one study. The lesions were peripheral in all (100%) patients. The same study commented that frequent bronchiectasis adjacent to the nodules, areas of ground-glass attenuation, Pleural effusion or Spontaneous pneumothorax are radiological diagnostic clues to the disease [8].

The case is reported to remind the medical fraternity that a possibility of Pulmonary Paragonimiasis may be considered as a differential clinical and radiological diagnosis for persistent haemoptysis, especially, in the presence of common CT thorax findings of the disease in a patient from an area where paragonimiasis is endemic.

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