CASE REPORT

Ruptured lung abscess: Often a result of delayed diagnosis and treatment

Sameer Singhal a,*, Bhushan N. Lakhkar b

a Department of Chest and Tuberculosis, Acharya Vinoba Bhave Rural Hospital, JNMC, DMIMS, Sawangi, Wardha, Maharashtra, India
b Department of Radiodiagnosis, Acharya Vinoba Bhave Rural Hospital, JNMC, DMIMS, Sawangi, Wardha, Maharashtra, India

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Introduction

A lung abscess is a pus filled cavity surrounded by inflamed tissue, in the lung parenchyma. Common aetiology for this condition is an infection. The most common predisposing event to infection is aspiration. Lung abscess is most often located in the posterior segment of right upper lobe, less often in the left upper lobes and the apical segment of lower lobes. Anaerobes are recovered in 89% of the patients. Other organisms implicated in lung abscess formation are Staphylococcus aureus, Streptococcus pyogenes, Klebsiella pneumoniae and Pseudomonas aeruginosa. Infrequently, other gram negative bacilli, such as E. coli and Haemophilus influenzae type B, may cause pulmonary necrosis. In few cases, this abscess may rupture and cause secondary empyema via formation of a bronchopleural fistula. This generally takes place if early treatment

Summary

Here we have documented two cases, first case was 35-year-old young male, chronic alcoholic, who came to OPD with chest pain and breathlessness for last one month. Chest X-ray showed left hydropneumothorax. Previous chest X-ray, taken 1 month back, showed left lower zone lung abscess. Ruptured lung abscess was confirmed by CT thorax. Intercostal drain was put and appropriate antibiotics with chest physiotherapy were started and patient recovered completely. In second case, 48-year-old male presented with fever for last 45 days. Chest X-ray showed right lower zone lung abscess. CT Thorax showed abscess, both in lung as well as in pleural cavity. Bronchography was done with fibre optic bronchoscope and CT thorax taken post-bronchography showed presence of dye in pleural cavity, confirming the presence of bronchopleural fistula. Brush cytology revealed tubercular infection. Patient was started on antitubercular treatment and patient responded well.

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is not instituted with appropriate antibiotics and postural drainage. Here we have presented two cases of lung abscess, bronchography was performed in one case and CT images taken post-bronchography demonstrated bronchopleural fistula.

Case I

A 35-year-old male presented in chest medicine OPD with exertional breathlessness, purulent productive cough, intermittent high grade fever and left sided chest pain for past 1 month. Patient was a chronic alcoholic. Chest X-ray taken one month back showed left lower zone lung abscess (Fig. 1). Present chest X-ray P/A view revealed left hydro pneumothorax (Fig. 2). CT thorax confirmed ruptured lung abscess with left hydropneumothorax (Fig. 3). Thoracocentesis was done and pleural fluid examination showed TLC 10,000 cell/mm, P 90%, L 10%, LDH 1000 IU/L, proteins 45 g/L and glucose 30 mg/ml, pH 7.2. Culture and sensitivity test of pleural fluid revealed growth of Klebsiella, sensitive to cefixime and gentamycin. Acid-fast bacilli (AFB) staining and culture were negative. Patient was started on oral cefixime 200 mg b.d with injecting gentamycin 60 mg b.d. Intercostal drain was inserted and the patient was started on vigorous chest physiotherapy. Daily dressing of ICD wound was done and antibiotics were given in rotation depending on culture and sensitivity of pleural fluid. Four months later intercostal drain was removed and chest X-ray showed complete resolution of abscess (Fig. 4).

Case II

A 48-year-old male presented in chest medicine OPD with intermittent high grade fever and purulent, productive cough for past 45 days. He was previously on ciprofloxacin 500 mg taken twice daily but his symptoms were not responding to treatment. Chest X-ray P/A view showed right lower zone lung abscess (Fig. 5). CT thorax showed two abscesses, one in pleural cavity and other in lung parenchyma (Fig. 6). Bronchography was done using fibre optic bronchoscope and CT thorax post-bronchography (Fig. 7) showed dye inside pleural cavity confirming the presence of bronchopleural fistula. Acid-fast bacilli (AFB) staining and culture of bronchial wash for organisms were negative but brush cytology was positive for AFB.
Antitubercular treatment was started and symptoms responded. Patient was advised for follow up after one month.

Discussion

The pathogenesis and presentation of both pleural empyema and lung abscess are often indistinguishable. Both are generally associated with primary pneumonias. Shared presentations include indolent development of symptoms, most often fever, sweats, cough, dyspnoea, weight loss and pleurisy; an association with conditions predisposing to aspirational events (altered consciousness, alcoholism, dysphagia and gingivitis). Indications for closed chest tube placement include bronchopleural fistula with empyema. Surgical resection of necrotic segments of lung is helpful if response to antibiotics is poor, for larger abscesses, and if airway obstruction limits drainage in cases of tumour or foreign body. In both of the above cases, initial manifestation was in the form of lung abscess. Primary therapy was inadequate which lead to the spread of lung abscess into pleural cavity via the formation of a bronchopleural fistula. Chronic alcoholism was the predisposing factor which led to the formation of lung abscess in the first patient. Tubercular infection was the etiological factor in the second case. Presence of bronchopleural fistula was confirmed in both the cases. There was almost complete resolution in first patient with intercostal drain, appropriate antibiotic therapy and chest physiotherapy.
Second case also responded well with antitubercular treatment. Both of the above cases illustrate that delay in institution of early appropriate antibiotics and chest physiotherapy in cases of lung abscess may lead to complications like formation of a bronchopleural fistula and need for surgical intervention.

Conflict of interest statement

None of the authors have a conflict of interest to declare in relation to this work under this sub-heading.

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