

Reminder of important clinical lesson

Allergic bronchopulmonary aspergillosis causing total lung collapse

Kris Ghosh,¹ Bethany Eve Sanders²¹Geriatrics Department, UHCW, Coventry, UK;²Geriatrics Department, UHNS, Stoke, UK**Correspondence to** Dr Bethany Eve Sanders, sandersbeth2004@yahoo.co.uk**Summary**

Allergic bronchopulmonary aspergillosis (ABPA) is commonly associated with underlying respiratory disease. The authors present the case of a 68-year-old non-smoker, admitted with a possible acute coronary syndrome, who deteriorated in hospital secondary to total left lung collapse as demonstrated on chest radiograph. There was no significant history of respiratory disease. Histology from bronchoscopy and lavage indicated lung carcinoma; however biopsy and CT staging demonstrated APBA. This is the first report of lung collapse secondary to ABPA in which initial bronchoscopy suggested underlying carcinoma.

BACKGROUND

This case is important for two reasons. First, allergic bronchopulmonary aspergillosis (ABPA) rarely causes complete lung collapse with only four previous cases documented. It is especially unusual in someone who has no previous lung pathology. This is a key learning point and ABPA should be considered as a differential diagnosis in someone with acute lung collapse.

Second ABPA is normally diagnosed from bronchoscopy and histology obtained at lavage, as seen in the cases reported below. However, in our case the histology was suspicious of lung carcinoma and this is the first report of its kind. We demonstrate that ABPA can be an important cause of false positive histology results for cancer following bronchoscopy.

CASE PRESENTATION

A 68-year-old Caucasian lady presented with a 24 h history of dull left-sided chest pain, radiating through to her back. She had become increasingly breathless over the 2 weeks prior to presentation and had a worsening productive cough for 3 months. Her medical history include; a myocardial infarction and a hysterectomy. She had never smoked.

She was admitted with suspected acute coronary syndrome but troponin was negative and chest x-ray (CXR) showed left lower zone collapse, which was treated as pneumonia.

She deteriorated over the following 24 h with increasing breathlessness and pleuritic chest pain. A repeat CXR demonstrated complete left lung collapse.

INVESTIGATIONS

Urgent flexible bronchoscopy was unsuccessful as the left bronchus was completely occluded 3 cm after the origin with a large mucus plug, suction was unsuccessful. Following this she had a rigid bronchoscopy which suggested a tumour mass arising from the upper left lobe and occluding the left main bronchus.

Histology from the broncho-alveolar lavage reported the following; 'There are scattered highly atypical cells present showing features of squamous differentiation, suspicious of a squamous cell carcinoma.'

However, a staging CT thorax showed no tumour mass or significant lymphadenopathy and blood results demonstrated a significant eosinophilia.

Bronchial biopsy results showed *Aspergillus* species with the presence of acute branching of fungal hyphae.

DIFFERENTIAL DIAGNOSIS

In the above case where the patient acutely deteriorated with a total lung collapse the differential diagnosis is; pneumonia, underlying lung cancer and ABPA.

TREATMENT

Prednisolone was commenced due to a raised eosinophil count. When the diagnosis of ABPA was made, itraconazole was added to her treatment.

OUTCOME AND FOLLOW-UP

The patient had a repeat outpatient bronchoscope, which showed normal mucosal appearance with no evidence of tumour and no mucus occlusion. At 3 month follow-up the patient was asymptomatic, with normal spirometry and CXR. She was put on a reducing regime of steroids and itraconazole.

DISCUSSION

ABPA is a syndrome normally seen in patients with obstructive lung disease, most commonly asthma and cystic fibrosis. *Aspergillus*, a spore forming fungi, affect the respiratory system in many ways and while migratory infiltration, proximal bronchiectasis and segmental or subsegmental atelectasis caused by mucus plugging are common, total lung collapse is rare. Four cases have previously been reported in the literature.¹ Nomura presented a 29-year-old man with a history of respiratory disease in

which the diagnosis of ABPA was initially suspected following bronchoscopy and lavage histology.²

Berkin reported two cases, thought due to underlying carcinoma in patients with no previous respiratory history. Initial bronchoscopy examination assisted the diagnosis of ABPA.³

Agarwal described a 22-year-old female without respiratory history who presented with respiratory failure secondary to left lung collapse, necessitating rigid bronchoscopy for diagnosis and management of ABPA.⁴

ABPA can present in many forms and in patients without a chronic lung condition. In this case and three from the literature the patients had no significant respiratory history. ABPA should always be considered in the differential of total lung collapse. Bronchoscopy and lavage were focal in assisting timely diagnosis in previous reports but in the index case initial results from these tests suggested carcinoma. Interpretation of histology findings from lavage specimens is not an exact science, and the patients history informs the report. In this case the findings of a mass at bronchoscopy may have contributed to a false positive result. This is the first report of a rare cause of lung collapse in which carcinoma was mis-diagnosed following bronchoscopy and lavage.

Learning points

- ▶ In acute total lung collapse ABPA should always be considered as a differential diagnosis.
- ▶ Patients with ABPA might not have any significant respiratory history.
- ▶ A definitive biopsy and CT thorax may be necessary for an accurate diagnosis.

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Competing interests None.

Patient consent Obtained.

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