Brief Communications

Concomitant allergic bronchopulmonary aspergillosis and allergic *Aspergillus* sinusitis with an operated aspergilloma

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The three clinical categories of *Aspergillus*-related respiratory disorders, allergic bronchopulmonary aspergillosis (ABPA), allergic *Aspergillus* sinusitis (AAS), and aspergilloma usually remain mutually exclusive. Coexistent ABPA with aspergilloma, though infrequent, has been reported,[1] whereas concomitant occurrence of ABPA and AAS is a rarity.[2] Furthermore, ABPA presenting as a collapsed lung with associated pleural effusion has been documented only once before.[3] We describe a case of ABPA with concomitant AAS in a patient who had earlier undergone a lobectomy for severe hemoptysis as a result of an aspergilloma in a bronchiectatic cavity. The patient presented to us with collapse of the left lung and associated pleural effusion. To our knowledge, the association of these three clinical conditions in a single patient is reported for the first time.

Abbreviations used:
ABPA: Allergic bronchopulmonary aspergillosis
AAS: Allergic *Aspergillus* sinusitis
CT: Computerized tomography

CASE REPORT

A 38-year-old housewife, who had had asthma since childhood, was referred for evaluation of collapse of the left lung. Her predominant complaint was diffuse pain in the left side of the chest along with increase in productive cough, wheezing, dyspnea, and rhinitis for the past 3 months. Nine years ago, the patient underwent left lower lobectomy for severe hemoptysis caused by an aspergilloma in a bronchiectatic cavity. She also had long-standing rhinorrhea, nasal blockage, and discharge of brownish plugs from the nostrils for which two Caldwell-Luc operations were performed during the last 5 years. Histopathologic reports revealed extensive necrosis of the inflammatory tissue, eosinophils

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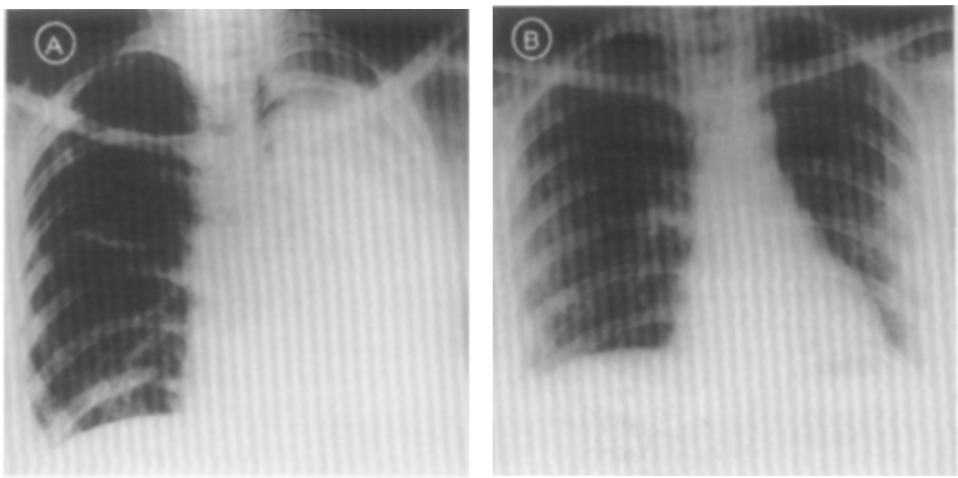

FIG. 1. Chest radiograph. **A,** Collapsed left lung; **B,** reinflated left lung after therapy.

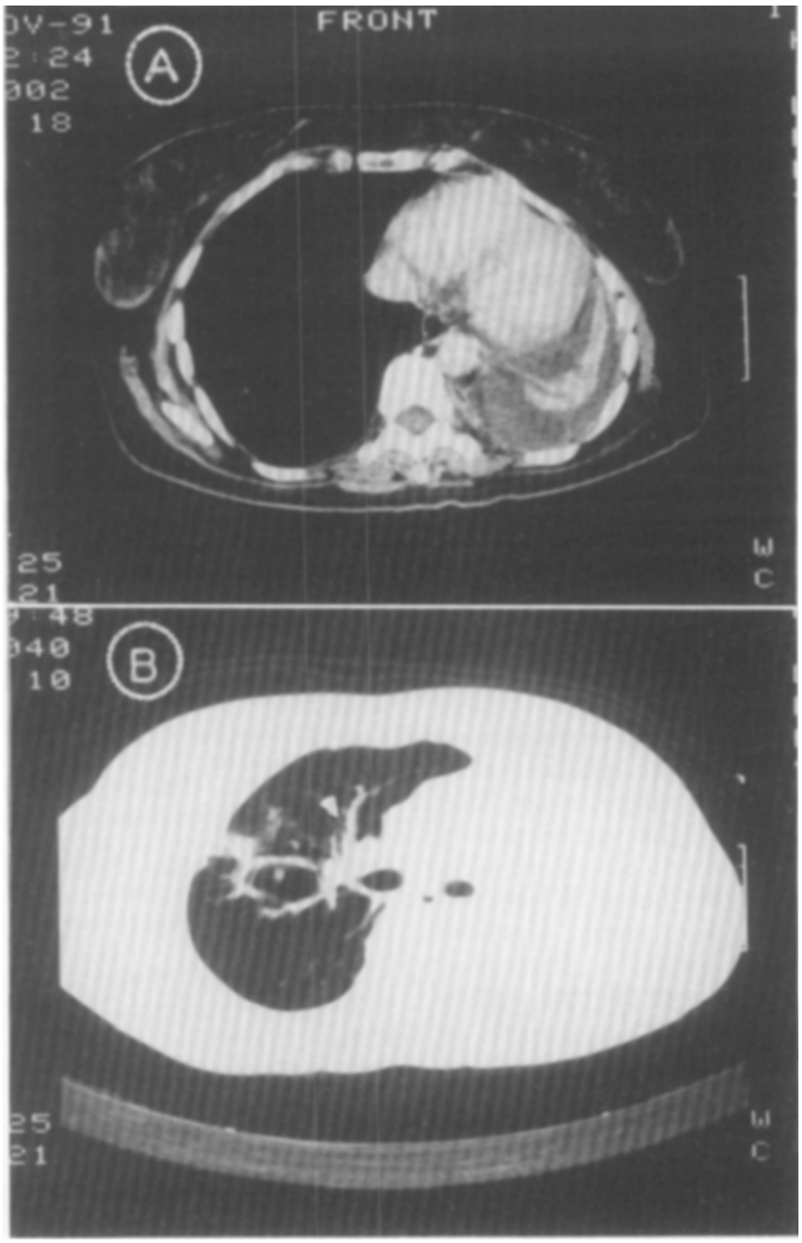

FIG. 2. A, CT scan of thorax showing collapsed left lung with associated pleural effusion; **B,** central bronchiectasis on the right side *(arrow).*

enclosing fungal hyphae at places, and Charcot-Leyden crystals. Her mother also had asthma and rhinitis. The patient stated that lung opacities were detected on chest radiographs on a few occasions since childhood, and eosinophilia ranged from 12% to 24%. Just before referral for evaluation, the patient underwent two unsuccessful bronchoscopic attempts for removal of mucous plug from left main bronchus.

During physical examination, erythematous nasal mucosa with thick mucopurulent secretions were seen. Maxillary sinus tenderness was also elicited. Chest examination suggested a collapse of the left lung, and vesicular breath sounds and expiratory rhonchi were audible on the right side.

The total white blood cell count was 9300/mm^3 with 12% eosinophils. Chest radiograph (Fig. 1, *A*) revealed a collapsed left lung with ipsilateral shift of the mediastinum, which was confirmed by computerized tomography (CT) of the thorax. CT also detected a left pleural effusion along with central bronchiectasis in all segments of the right lung and a bronchiectatic cavity in the right upper lobe (Fig. 2, *A* and *B*). Diagnostic tap yielded 50 ml of straw-colored exudate containing lymphocytes predominantly. Stains and cultures of the fluid

were negative for *Mycobacterium tuberculosis*, pyogenic organisms, and pathogenic fungi. Radiograph of the paranasal sinuses demonstrated bilateral haziness of maxillary sinuses, but a CT scan did not demonstrate any bony destruction. Intradermal challenge with antigens of *Aspergillus fumigatus* and *A. flavus* elicited strong type I and III hypersensitivity reactions. Precipitating antibodies against these antigens were also detected. The total serum IgE level was 280 IU/L (normal range, 0.0 to 14 IU/L). The patient was diagnosed as having ABPA with AAS and an operated aspergilloma.

Within 2 weeks of initiation of treatment with 30 mg of prednisolone once daily (0.5 mg/kg/day), the patient experienced a remarkable decrease in chest and nasal symptoms. Chest radiograph obtained 1 month after commencement of therapy showed a reinflated left lung (Fig. 1, *B*), and an ultrasonographic study did not reveal any pleural effusion.

DISCUSSION

The association of ABPA, AAS, and aspergilloma in one patient has not been documented before. Our patient, who had had asthma with eosinophilia since childhood, most probably had ABPA initially followed by aspergilloma formation in a bronchiectatic cavity. Subsequent occurrence of nasal symptoms suggests that AAS developed later. Another significant feature in our patient was the associated pleural effusion, which has been documented before in only two patients.[3] The occurrence of sterile exudative pleural fluid with lymphocytic predominance, which is similar to the report of the previous two cases, suggests that increased negative intrapleural pressure caused by collapse of the lung[4] rather than hypersensitivity to *Aspergillus* may have been the cause. Collapse of the lung, associated pleural effusion, and ipsilateral mediastinal shift usually suggest bronchogenic carcinoma. Failure to recognize ABPA as a cause of such a clinical presentation may result in diagnostic confusion, delay in therapy, and increased morbidity.

Therapy with prednisolone produced an excellent response, which resulted in reexpansion of the left lung and resorption of the pleural fluid. Our case emphasizes that ABPA, AAS, and aspergilloma can occur in a single patient and that ABPA can mimic bronchogenic carcinoma.

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The effect of oral terfenadine on neurokinin-A–induced bronchoconstriction

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Neuropeptides such as neurokinin A (NKA) and substance P may be implicated as inflammatory mediators in asthma because they exhibit a variety of features, which may all be relevant in the pathophysiology of bronchial asthma and in the potency of bronchoconstrictors when inhaled by asthmatic subjects.[1]

Abbreviations used
NKA: Neurokinin A
FEV_1: Forced expiratory volume in 1 second
PD_{15}: Provocative dose causing a 20% fall in FEV_1
PD_{20}: Provocative dose causing a 15% fall in FEV_1

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