CHEST

A 66-Year-Old Man With a Past History of Relapsing Polychondritis Presented With Right Upper Lobe Consolidation, Nodular Airway Lesions, and a Corticosteroid-Responsive Chronic Cough

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A 66-year-old male nonsmoker from Arizona was referred to our practice for evaluation of chronic cough. He had a history of biopsy-proven relapsing polychondritis manifesting as right auricular and nasal pain and swelling 9 months prior to presentation. The onset of his cough coincided with the diagnosis of relapsing polychondritis, and he was prescribed prednisone 90 mg/d, which promptly relieved his rheumatologic and respiratory symptoms. A chest radiograph, obtained prior to the initiation of therapy, was normal. Any attempts at decreasing the dose of the glucocorticoid to < 30 mg/d resulted in recurrence of the cough but not of the auricular or nasal symptoms. A second chest radiograph done 6 months before presentation, while the patient was receiving prednisone 20 mg/d, was normal as well. In anticipation of our evaluation, he stopped all glucocorticoids for 7 days. He was not receiving any other medications, and he had no history of an atopic diathesis. CHEST 2015; 148(5):e142-e147

ABBREVIATIONS: CEP = chronic eosinophilic pneumonia; RUL = right upper lobe

On arrival to our Cough Center, the patient presented with dry cough with a severity of 10 out of 10, as well as a complaint of dyspnea on mild exertion. He denied fever; chills; rhinorrhea; sinus tenderness; auricular, nasal, or chest pain; hemoptysis; weight loss; arthralgias; or myalgias. Although the patient had a history of "difficult-to-control asthma" as a child, he had no respiratory complaints until 9 months ago.

Physical examination in the clinic was normal, with the exception of crackles being heard diffusely over all lung fields on auscultation. Although respiratory rate was normal, oxygen saturation by pulse oximetry was 91%.

CBC count showed leukocytosis of 15.8×10^9/L, with neutrophilia of 81.3%, 10% lymphocytes, 7.1% monocytes, 1.4% eosinophils, and 0.2% basophils. His spirometry showed FEV_1 1.94 L (66% predicted) and FVC 2.66 L (68% predicted). Methacholine inhalation challenge was negative at a concentration of 16 mg/mL.

A chest radiograph showed dense consolidation of the right upper lobe (RUL) with air bronchograms (Fig 1). A CT scan of the chest confirmed the presence of the RUL abnormality as well as less extensive focal disease in the left upper lobe and mediastinal and hilar lymphadenopathies (Fig 1). The decision to perform a

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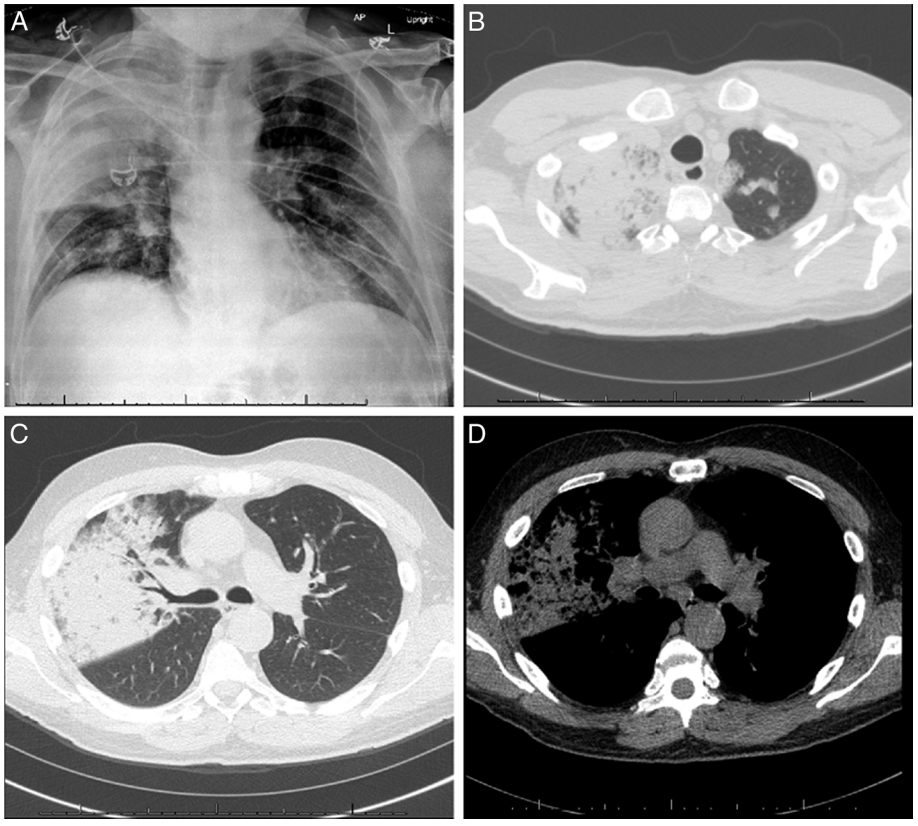

Figure 1 – *Thoracic imaging. A, Chest radiograph showing consolidation of the right upper lobe. B-D, Chest CT scan revealed right upper lobe consolidation, less extensive focal disease in the left upper lobe, and mediastinal lymphadenopathy in lung (B, C) and soft tissue (D) windows.*

diagnostic bronchoscopy was made. It revealed multiple, scattered nodular and confluent plaque-like mucosal lesions throughout the tracheobronchial tree (Fig 2). Although some nodules appeared to overlie cartilage, the majority did not. In addition to taking biopsy specimens of endotracheal and endobronchial lesions, BAL and transbronchial lung biopsy specimens were also obtained from the posterior segment of the RUL.

Results of BAL analyses showed the following: WBC count of 4.1×10^9/L with 87% eosinophils, 2% neutrophils, 6% lymphocytes, 3% monocytes, and 2% basophils; negative fungal and acid-fast smears and cultures; negative polymerase chain reactions and cultures for influenza, varicella-zoster, and cytomegalovirus; and negative direct immunofluorescence for *Pneumocystis jirovecii.* Although Group B streptococci grew on bacterial cultures, this growth was determined to be a contaminant.

The results of transbronchial biopsies of the lung are shown in Figures 3A and 3B; results on nodular tracheobronchial lesions are shown in Figures 3C and 3D.

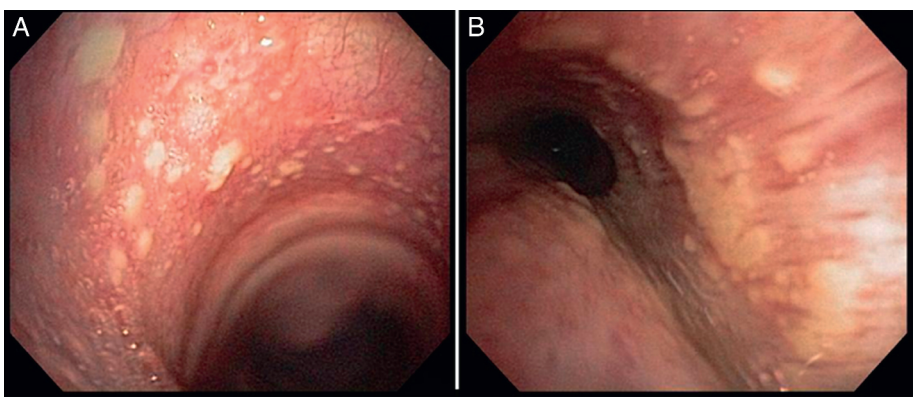

Figure 2 – *Bronchoscopic images demonstrating nodular and plaque-like confluent lesions within the airway mucosa. A, trachea. B, Left main bronchus.*