An Unexpected Endobronchial Mass Appearing During Bronchoscopy

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A 60-year-old man was admitted to the hospital with productive cough and yellowish sputum, severe fatigue, and weight loss of 4 kg over the past month; furthermore, he reported a slowly progressive shortness of breath on exertion over the past 6 months. Before admission, he received ampicillin/sulbactam (750 mg) orally twice daily for 7 days without significant clinical improvement. CHEST 2018; 154(1):e13-e21

Case Presentation

The patient reported a medical history of pulmonary TB 34 years before. He was not able to recall a precise medication, but remembered that he had received tablets for half a year. Older images were not available. Presently, there were no fever or night sweats. Beside a moderate mitral regurgitation, the patient had no additional medical history or permanent medication. He reported active cigarette smoking (cumulative 30 pack-years).

Chest Imaging and Pathology for Clinicians

On physical examination, digital clubbing was noticeable and lung auscultation revealed fine crackles on the left side of the chest anteriorly in the infraclavicular area with moderate ubiquitous wheezing. Further physical examination was normal. Basic laboratory testing showed a slightly elevated C-reactive protein with 8 mg/ dL (reference value, <0.3 mg/dL). All other laboratory values were within the normal range. Pulmonary function test revealed a total lung capacity of 5.0 L (69%), an FVC of 2.0 L (41%), an FEV₁ of 1.3 L (35%), and a FEV₁/FVC ratio of 64%, indicating a severe obstructive airway disease with an additional restrictive defect.

Chest radiograph showed an increase in overall lung markings with diffuse bronchial wall thickening, localized opacities in the left middle and upper field, and moderate to severe emphysema (Fig 1). Because of a possible diagnosis of TB reactivation, the patient was isolated and sputum samples were collected, but repeated smears for acid-fast bacilli and polymerase chain reaction (PCR) assay testing (GeneXpert MTB/ RIF assay, Cepheid) for Mycobacterium tuberculosis from three different sputum samples were negative. Viral serologic testing was negative for HIV type-1/2. Axial (Fig 2) and coronal reconstruction (Fig 3) of the CT scan of the chest revealed a large, thick-walled cavitary lesion within consolidations in the left upper lobe with thickened pleura and bullous emphysema (Video 1).

Bronchoscopy showed an ubiquitous atrophic endobronchial mucous membrane without putrid

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Figure 1 – Posteroanterior and lateral chest radiograph showing a focal pleural thickening (just below the level of the left scapula on the posteroanterior view) with curvilinear densities in the left apex and a dense lesion in the lateral left mid lung. In general, the lungs appear hyperinflated, with diminished volume of the left lung. In both lungs, diffuse, poorly defined nodules throughout the right upper lobe are present.

secretion, but endobronchial lumen of the left upper lobe (segment 1/2) was obstructed by an irregular brown yellowish mass (Fig 4). Bronchoalveolar lavage (BAL) revealed an increased total cell count of 18.0 \times 10⁶/100 mL BAL dominated by neutrophils (98%). Hemacolor, Kinyoun, and Gram staining of BAL revealed no microscopic evidence for bacteria, acid-fast bacilli, or fungi. Bacterial cultures from BAL were negative; growths of *Candida glabrata* and mycobacterial culture results were pending. Galactomannan antigen testing from BAL fluid (BALF) was negative with an optical density index of 0.33 (optical density index cutoff of >1.0 for pulmonary aspergillosis in BALF).



Figure 2 – A, Axial CT scan of the chest showing a large, thick-walled cavity with an intracavitary mass in the left upper lobe with thickened pleura. B, Mediastinal window of A. C, Axial CT scan of the chest a few slices below A and B showing a nodular density in the left upper lobe and cystic changes with pleural thickening posteriorly on the left. D, Mediastinal window of (C). See Video 1.

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