

# Bronchoscopic View of an Intracavitary Aspergilloma

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### Abstract

*Aspergilloma, also known as mycetoma or fungal ball, is caused by pulmonary involvement of Aspergillus species in a pre-existing lung cavity as evidenced by air crescent sign*

*in computed tomography scan of chest. Direct visualization of aspergilloma in cavity is a rare bronchoscopic finding.*

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### The Case

A 47-year-old man was referred for evaluation of recurrent hemoptysis that he had been complaining for 2 months. Hemoptysis was variable in amount, ranging from spoonful to streaking on sputum. There was cough with occasional mucopurulent sputum, shortness of breath, and low-grade fever. He gave history of pulmonary tuberculosis 2 years back and was treated with category-I anti-tuberculosis drugs for 6 months. He was normotensive and non-diabetic and did not give history of any other illness. On examination, he looked ill with average build. Chest examination revealed breath sound vesicular with prolonged expiration, polyphonic wheezes, and widespread coarse crackles which altered with coughing.

High resolution computed tomography scan (HRCT) of the chest showed bronchiectatic changes in the right upper lobe, superior segment of right lower lobe and left lower lobe (Figure 1A) and a large cavity in the left upper lobe (Figure 1B). Fiberoptic bronchoscopy was done which showed normal endobronchial tree of the right lung. A cavity connected with the airway was seen in the superior lingular segment bronchus (LB4) (Figure 2B). An irregular spherical mass was seen while bronchoscope was advanced into the cavity (Figure

2C). Biopsy from the mass and bronchoalveolar lavage (BAL) was taken from the cavity. Bacterial culture of BAL fluid yielded *Acinetobacter* and *Pseudomonas aeruginosa*, and *Mycobacterium tuberculosis* was detected in GeneXpert (Cepheid Inc., USA) without rifampicin resistance. Microscopic examination of the biopsy specimen showed foci of inflamed granulation tissue and fungal colonies composed of septate hyphae branched at acute angle – features consistent with pulmonary aspergillosis. Fungal culture was not done. Treatment was started with antibiotic according to sensitivity along with retreatment regimen for relapsed pulmonary tuberculosis (rifampicin, INH, pyrazinamide, ethambutol and levofloxacin). We planned for bronchoscopic intercavitary instillation of Amphotericin B or voriconazole, but for financial constrain the patient refused this approach. Oral voriconazole was started. Unfortunately, the patient was lost to follow-up.

Chronic cavitary pulmonary aspergillosis may or may not contain a fungal ball (aspergilloma) as evidenced by CT scan of chest. Bronchoscopy typically shows inflammatory changes, purulent secretion or frank bleeding. Direct visualization of a fungal cavity is a rare bronchoscopic finding. Destruction of the adjacent bronchial wall and formation of a sinus tract may expose the cavity and the aspergilloma and can be visualized during bronchoscopy<sup>1</sup>. Surgery is the mainstay of treatment for aspergilloma but leads to significant mortality and morbidity<sup>2</sup>. Systemic azole (especially voriconazole) or amphotericin B is the treatment of choice. Direct instillation of antifungal medication into the cavity either percutaneously or via bronchoscopy is a novel approach which increases drug penetration and improves outcome<sup>2,3</sup>.

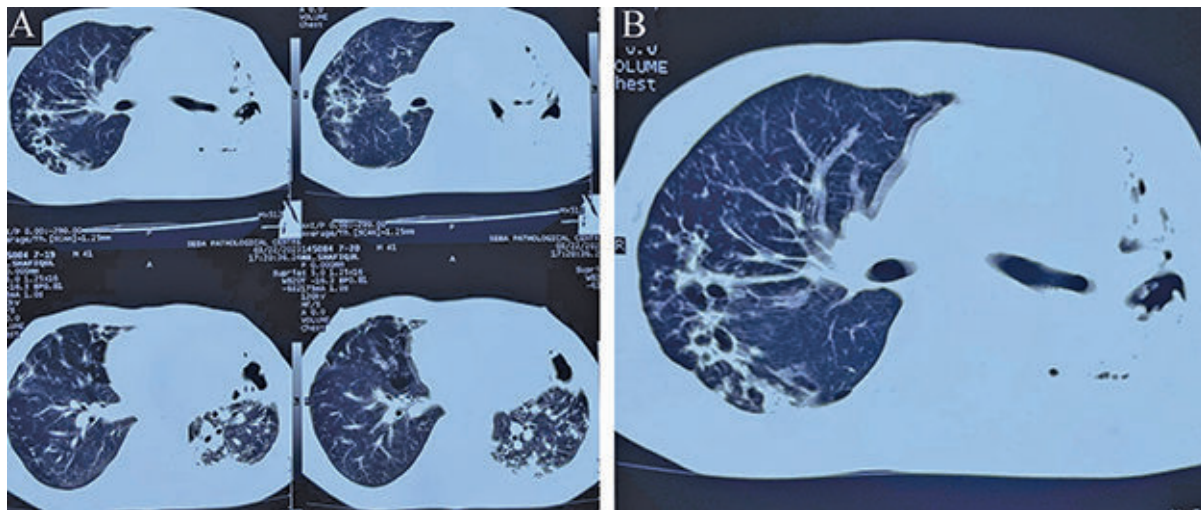
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**Figure 1.** High resolution computed tomography scan (HRCT) of the chest shows – (A) Bronchiectatic changes in the right upper lobe, superior segment of right lower lobe and left upper lobe, (B) A large cavity in the left upper lobe.



**Figure 2.** Fiberoptic bronchoscopy shows – (A) Superior and inferior lingular segment of the left upper lobar bronchus (LB4, LB5), (B) A cavity connected with the airway in the superior lingular segment bronchus (LB4), (C) A fungal ball (aspergilloma) in the cavity (arrow).

#### Conflict of interest

There is no potential conflict of interest to declare.

#### Disclaimer

Appropriate informed consent was taken from the patient to publish the report.

#### Author contribution

AB was the primary physician to care the patient. NKS performed the bronchoscopy, did the final diagnosis and followed up the patient. Both the authors contributed equally to prepare the manuscript.

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