

## Introduction :

Pulmonary mucormycosis is a relatively rare, life-threatening, opportunistic infection that typically affects immunocompromised patients. Approximately 32% of cases of mucormycosis have comorbid diabetes<sup>1</sup>. Symptoms often mimic pneumonia. When left untreated this infection carries a high mortality rate (76%) due to its rapid progression<sup>2</sup>. The overall survival rate is 44%<sup>3</sup>.

Here we present a case of pulmonary mucormycosis in a diabetic patient who was misdiagnosed with pneumonia but successfully managed with medical therapy.

## Case Description:

A 53-year-old female patient presented with progressive dyspnea, hemoptysis, weight loss, and fever for about a month. Her symptoms began while on vacation to Guyana where she was prescribed antibiotics for pneumonia. She was a non-smoker and had a past medical history of diabetes.

On current admission, patient complained of chills. She had rales on chest auscultation. Laboratory investigations was significant for mild leukocytosis (12.8 K/uL) and hyperglycemia (374 mg/dL). Chest X-ray revealed right perihilar mass-like lesions (Figure 1). CT scan of the chest showed a peculiar pattern of diffuse peribronchovascular lesions of varying sizes and a solid ring with central ground glass opacities (reversed halo sign) and cavitation (Figure 2). The patient was started on a broad spectrum antifungal agent for fungal pneumonia. Sputum examination did not reveal acid fast bacilli. Bronchoscopy with transbronchial biopsy was performed, which confirmed the presence of mucormycosis (Figure 3). The patients' treatment was adjusted with posaconazole and she tolerated the treatment with gradual improvement.

## References:

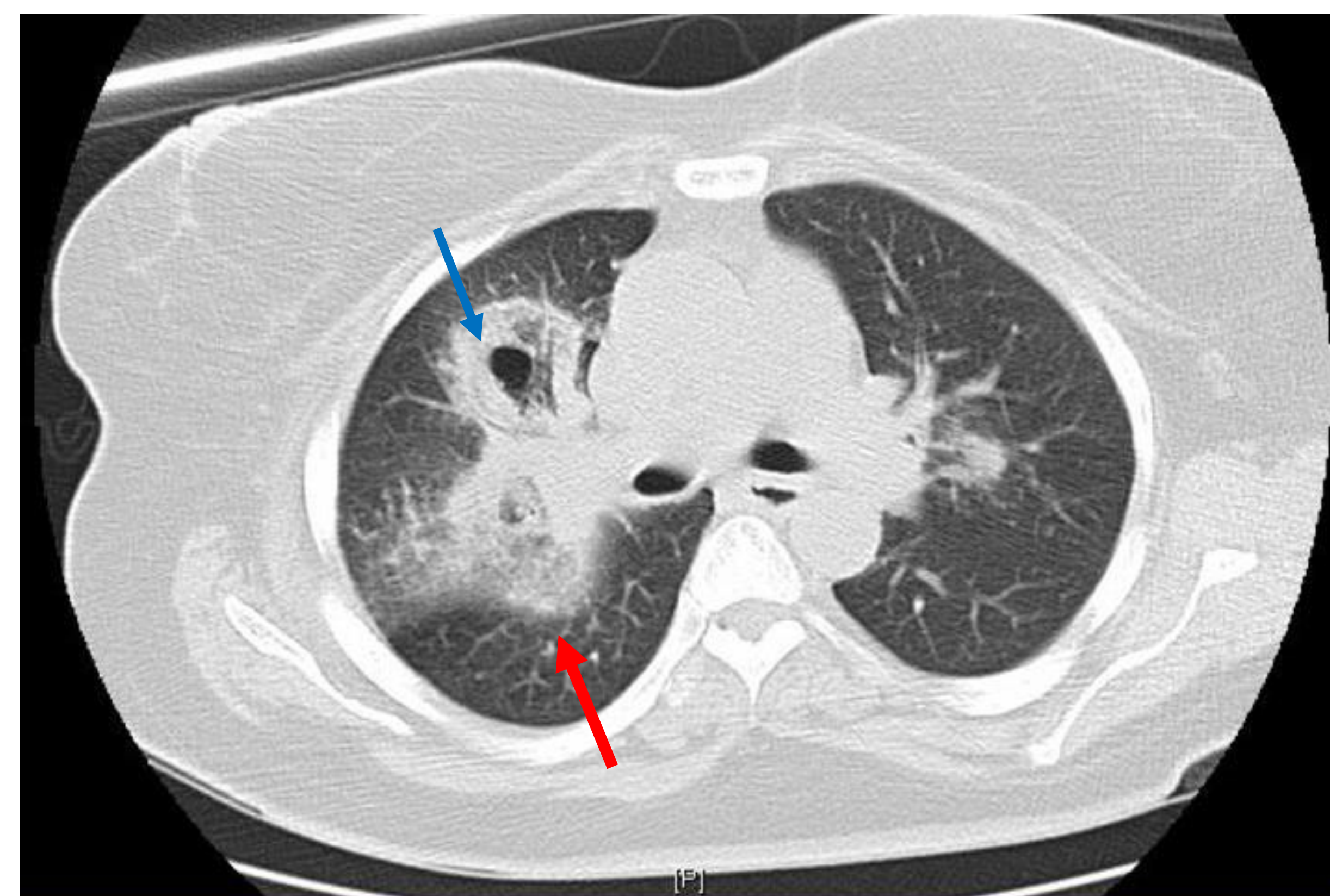
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2. Petrikos G, Skiada A, Lortholary O, Roilides E, Walsh TJ, Kontoyiannis DP. Epidemiology and clinical manifestations of mucormycosis. *Clin Infect Dis.* 2012;54 Suppl 1:S23-34.
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### Figure 1:



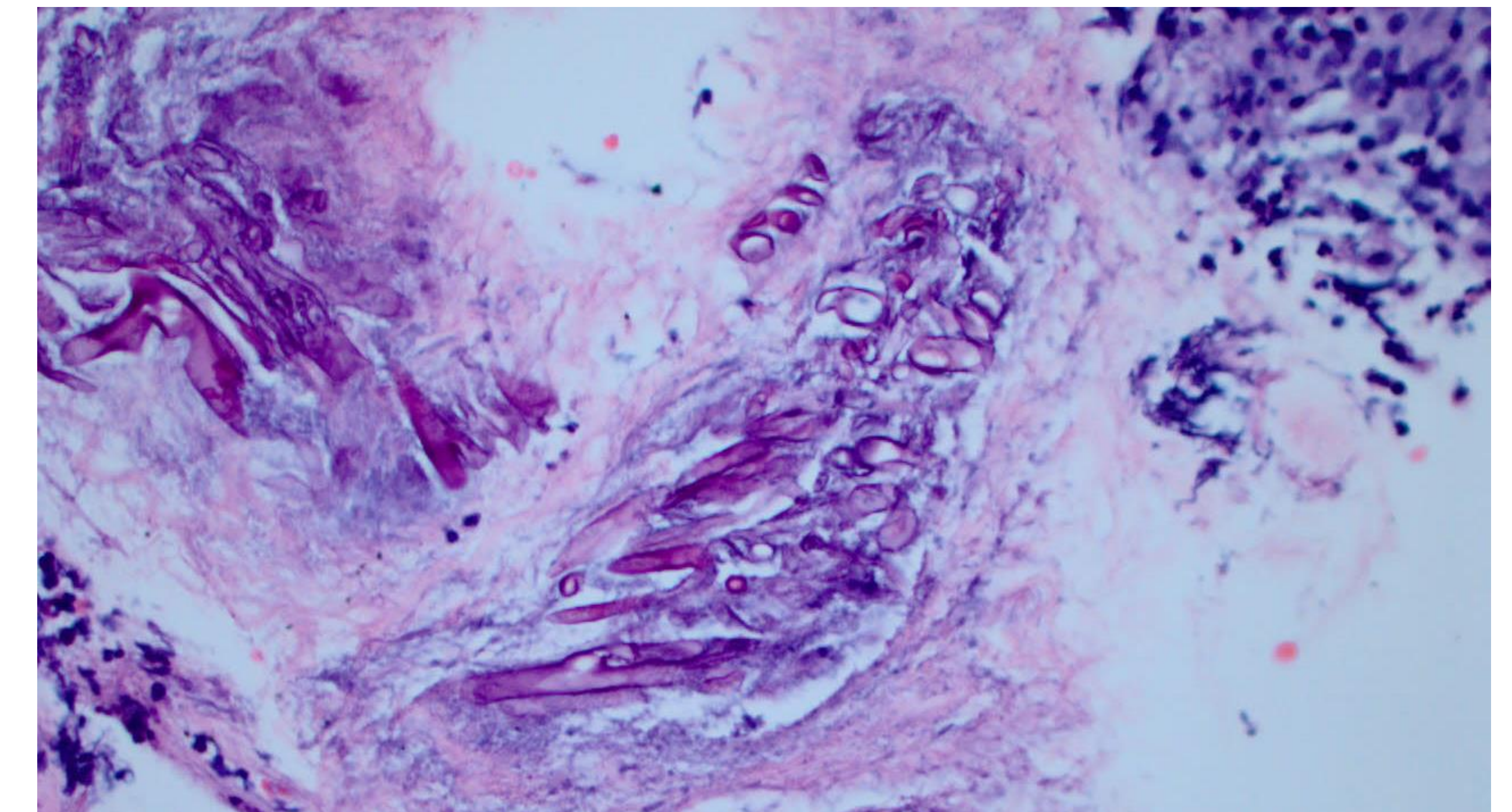
Chest x-ray showing mass-like opacification in the right perihilar region.

### Figure 2:



CT of chest showing central ground-glass opacity surrounded by dense consolidation of ring shape – reversed halo (red arrow) and cavitary lesions (blue arrow).

### Figure 3:



Transbronchial biopsy showing non-septate hyphae consistent with mucormycosis (H&E stain).

## Discussion:

Mucormycosis is caused by infectious fungi of the order *Mucorales*, most commonly the *Mucor*, *Rhizopus*, and *Lichtheimia* species<sup>4</sup>. The diagnosis of pulmonary mucormycosis is difficult since the presentation is similar to pneumonia. Radiographic findings may demonstrate focal consolidation, masses, pleural effusions, or multiple nodules. A reversed halo sign – ground glass attenuation surrounded by dense, concentric ring – seen on high resolution CT, is characteristic of angio-invasive fungi. Amphotericin B and a few azole agents were the mainstay anti-fungal therapy, but newer potent triazoles, like posaconazole, are now recommended.

The duration of therapy is determined by clinical response, normalization of radiological findings, and negativity of cultures. Early diagnosis is the key to improving the likelihood of survival. This case highlights the importance of distinguishing pulmonary mucormycosis from pneumonia.

## Teaching Points:

1. Mucormycosis carries a high mortality rate.
2. Physicians should consider mucormycosis as a possibility in evaluation of unresolved pneumonia in diabetic patients.
3. Posaconazole is an effective therapy for managing pulmonary mucormycosis in diabetic patients.