A Rare Indolent Course of Pulmonary Mucormycosis

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INTRODUCTION

Mucormycosis is caused by a fungus found in decaying vegetation and soil which can be transmitted via ingestion, cutaneous inoculation, or inhalation of spores We present a case of an immunocompromised patient who presented with an indolent course of pulmonary murcomycosis.

CASE REPORT

A 77-year-old male with a medical history of myelodysplastic syndrome (MDS) on 5-azacytidine and prednisone, transfusion-associated iron overload presents with shortness of breath (SOB).

For evaluation, he underwent an outpatient Chest X-ray which showed a cavitary lesion in the right middle lobe (RML), which was also seen on CT chest along with patchy opacities and more focal consolidation in the posterior RML. He was referred to pulmonology. Sputum cultures, including fungal and acid-fast bacillus smears, were negative.

He developed new chest pain, worsening SOB, and was referred to the emergency room (ER) to rule out pulmonary embolus (PE). He denied fever, chills, night sweats, sick contacts, hemoptysis, or recent travel.

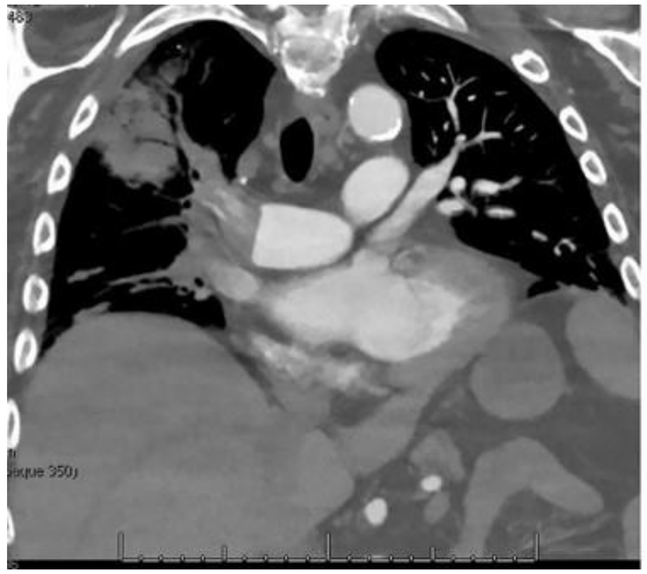
Physical exam was significant for a pale and ill-appearing male. Heart rate was tachycardiac and irregular. Lung auscultation revealed scattered rhonchi bilaterally. CTA chest pulmonary angiography showed a large masslike embolus within the right main pulmonary artery extending through the upper, middle, and lower branches. The RML cavitation was present along with other cavitations.

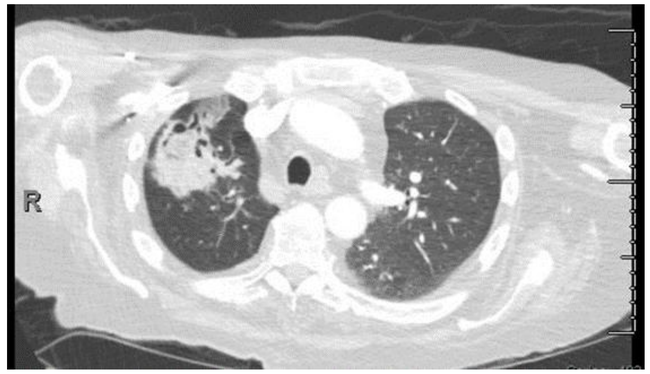
Differential diagnosis at this time: Pulmonary embolism, malignancy, lung abscess, aspergilloma/invasive aspergillosis, vasculitis.

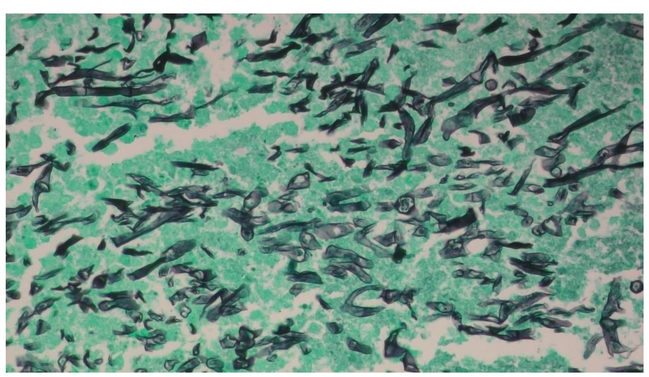
Heparin drip was initiated, and more cultures and studies were sent. He underwent an endobronchial ultrasound (EBUS) bronchoscopy with lymph node fine needle aspiration (FNA) and bronchoalveolar lavage (BAL). Rapid on-site evaluation (ROSE) revealed no malignancy and possible aspergillus eroding the right main pulmonary vessel. He was empirically started on IV voriconazole.

Specimens from the BAL were reviewed by the infectious disease specialist and pathologist who concluded that the organism was consistent with mucormycosis. IV voriconazole was stopped and the plan was to initiate liposomal amphotericin B. However, the patient decompensated further and was upgraded to the ICU for vasopressor support. Family decided upon comfort-directed care and he passed away shortly after.

FIGURES







1-2. Coronal and axial contrast enhanced chest computed tomography and angiography demonstrating multiple areas of lung cavitations.

3. Laboratory slide. Fungus, 400x, Grocott Silver Stain showing fungal hyphae

DISCUSSION

Mucormycosis is caused by a filamentous fungus. Some of the risk factors include immunosuppression (chronic high-dose steroids, solid organ transplant, hematopoietic stem cell transplant, hematological malignancy), diabetes mellitus or prolonged hyperglycemia (fasting serum glucose >200mg/dL), iron overload, malnutrition, and intravenous drug use. Our patient was immunocompromised as he had myelodysplastic syndrome and was on 5-azacytidine and chronic prednisone.

Clinical manifestations can involve multiple organ systems. Some symptoms of pulmonary mucormycosis include fever, cough, dyspnea, and hemoptysis. Hemoptysis indicates a poor prognosis because it usually occurs due to vascular invasion and intra-alveolar hemorrhage. It is associated with an in-hospital mortality of up to 65%. Diagnosing pulmonary mucormycosis is challenging. The gold standard for diagnosing it is finding of the characteristic hyphae in a biopsy specimen.

Liposomal amphotericin B is the first-line drug of choice in treating mucormycosis, usually started at 5mg/kg/dose. If a patient has a refractory disease or is intolerant to amphotericin therapy, posaconazole can be used. The difficulty associated with diagnosing mucormycosis and the indolent course of his presentation resulted in a delay in treatment and his demise. Due to the high mortality associated with mucormycosis, amphotericin therapy should be started empirically when suspected. Surgical intervention has been shown to provide additional benefits when compared to antifungals alone in patients with disease confined to one lung. Lobectomy is often required but pneumonectomy may be performed for extensive disease.

This case highlights the importance of prompt initiation of treatment when mucormycosis is suspected.

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