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Influenza-Associated Pulmonary Aspergillosis – Case Report

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Abstract

Aspergillus is a fungus capable of causing a wide spectrum of diseases, ranging from allergic manifestations to potentially life-threatening invasive infections. Several studies have demonstrated an association between severe influenza and Aspergillus infection.

The case report refers to a 74-year-old man admitted with respiratory symptoms and severe hypoxemia requiring invasive mechanical ventilation in the context of influenza A infection. The patient was treated with oseltamivir followed by empirical antibiotic therapy due to suspected bacterial superinfection with persistent severe respiratory failure. Bronchofibroscopy revealed a positive galactomannan assay in bronchoalveolar lavage fluid rising the suspicion of pulmonary aspergillosis followed by positive cultures. Treatment with voriconazole was initiated with a slow but favorable clinical course.

This case highlights the diagnostic challenges of pulmonary aspergillosis in immunocompetent patients and the importance of maintaining a high index of suspicion in patients with severe influenza and persistent respiratory impairment. Early recognition of this complication and prompt initiation of antifungal therapy are essential to improve prognosis.

Keywords: *influenza, pulmonary aspergillosis*

Learning Points

- *Rare cause of persistent respiratory infection that should be considered when first-line treatment fails.*
- *Pulmonary aspergillosis is a rare cause of illness in immunocompetent patients.*
- *Revisiting the diagnosis is crucial when the clinical course deviates from expectations.*

1. Introduction

Aspergillus is a fungus that can cause a broad spectrum of diseases, ranging from allergic conditions to infectious disease. Infectious manifestations include chronic airway colonization as well as potentially fatal invasive disease. Invasive pulmonary aspergillosis is a well-recognized condition that predominantly affects immunocompromised individuals. However, it can also occur in immunocompetent patients [1].

It has long been recognized that patients with influenza are susceptible to bacterial superinfections but several studies and published case reports have established an association between aspergillosis and influenza, particularly in patients requiring treatment in Intensive Care Units [2,3]. Severe influenza appears to cause epithelial damage and immune dysregulation, thereby increasing susceptibility to Aspergillus infection [4].

2. Case Description

A 74-year-old man, former smoker (63 pack-year) with a medical history of obstructive sleep apnea, obesity (BMI of 38kg/m^2), hypertension and dyslipidemia, presented to the Emergency Department (ED) with fever, cough, and fatigue. On admission he was tachypneic and had severe hypoxemia. Pulmonary auscultation revealed bilateral diffuse wheezing. Chest computed tomography (CT) showed bilateral ground-glass opacities (Fig. 1). Laboratory evaluation showed elevated inflammatory markers.

During the stay in ED the patient's clinical condition deteriorated requiring invasive

mechanical ventilation. On further investigations, it was detected an influenza A infection for which he received a 10 day course of oseltamivir. He developed a bacterial superinfection without identification of the causative agent and was started on empirical antibiotic therapy with normalization of the inflammatory marks.

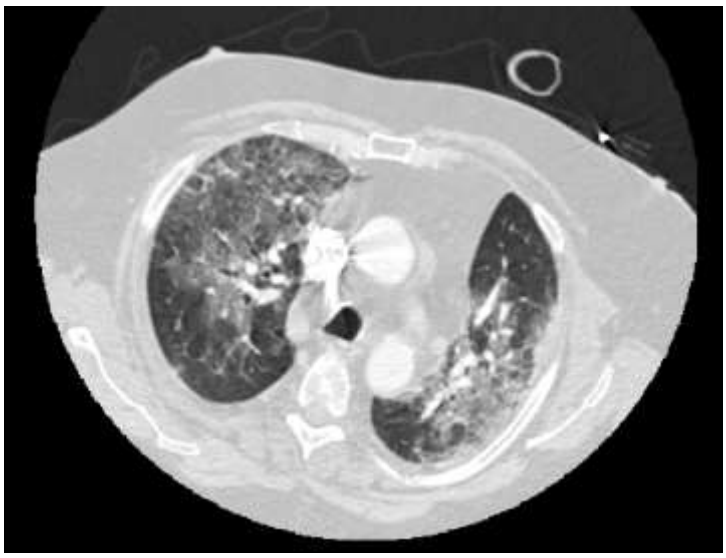

Figure 1

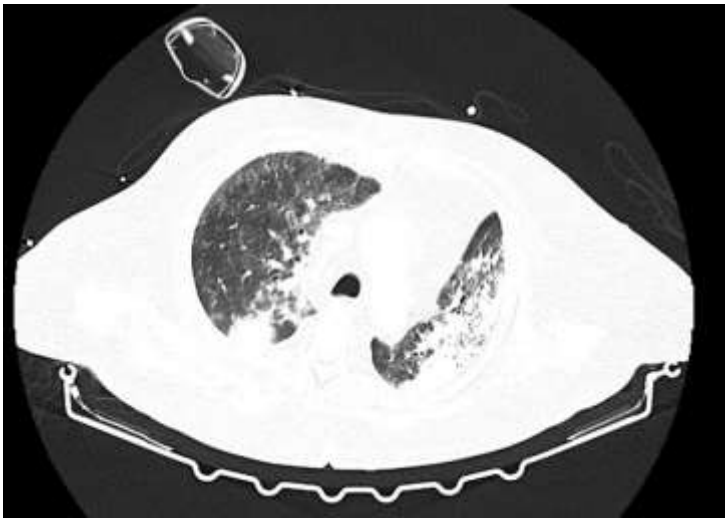

Figure 2

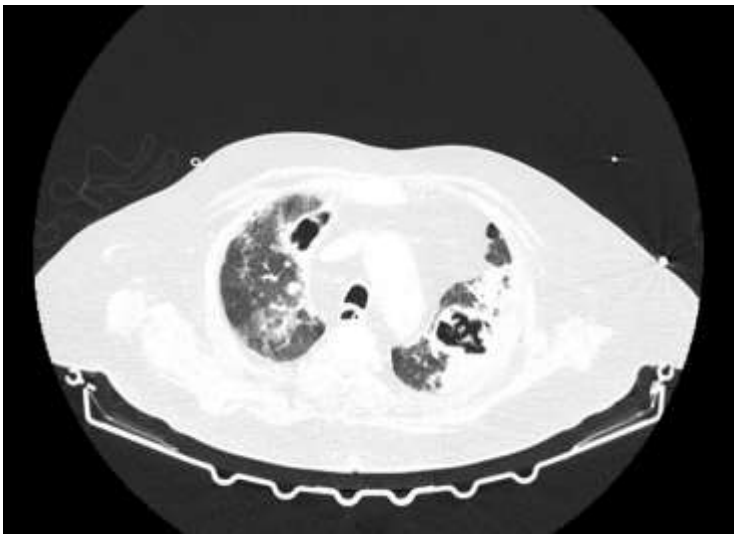

Figure 3

After completion of antibiotic treatment, weaning from mechanical ventilation proved difficult, prompting repeat microbiological cultures and a new chest CT scan (Fig. 2). This revealed persistent ground-glass opacities and consolidations with areas of tissue loss in the anterior segment of the right upper lobe. Bronchofibroscopy revealed a positive galactomannan assay with further isolation of *Aspergillus fumigatus*. No other pathogens were isolated from the bronchoalveolar lavage fluid. Treatment with voriconazole was initiated.

After 2 weeks of voriconazole, chest CT was repeated which demonstrated cavitation with evidence of an aspergilloma (Fig. 3). The patient showed a slow but favorable clinical evolution being discharged after 2 months of hospital stay.

3. Discussion

In patients with influenza who continue to exhibit severe respiratory impairment after treatment, a wide range of differential diagnoses may account for the clinical condition, including superinfection, pulmonary edema, and hemorrhage. The use of complementary diagnostic tools allows clarification of the underlying cause in many cases. Bronchofibroscopy enables microbiological cultures, galactomannan testing, and other diagnostic studies that facilitate identification of the causative agents [5].

In the present case, the initial bacterial superinfection may have contributed to a delay in the diagnosis of fungal infection. Only after completion of empirical antibiotic therapy was bronchofibroscopy performed, revealing a positive galactomannan assay and *Aspergillus fumigatus* isolation in bronchoalveolar lavage fluid and leading to the diagnosis of invasive aspergillosis. As the clinical and radiological manifestations of aspergillosis may be nonspecific, early recognition of this infection is crucial to allow prompt initiation of antifungal therapy [6].

Voriconazole is the first-line treatment for invasive pulmonary aspergillosis and was used in the present case, resulting in a favorable clinical outcome. However, in refractory cases, switching to antifungal agents from different classes may be considered [5,7].

This case was particularly challenging because fungal infection is not usually considered early in immunocompetent patients. Influenza-associated pulmonary aspergillosis is a severe complication with rapid progression and is associated with increased morbidity and mortality. Early recognition of influenza as a risk factor for invasive pulmonary aspergillosis is essential to guide treatment strategies, as early initiation of therapy improves outcomes.

References

[1] Kousha M, Tadi R, Soubani AO. Pulmonary aspergillosis: a clinical review. Eur Respir Rev. 2011; 20(121):156–174. doi:10.1183/09059180.00001011.

[2] Schauwvlieghe A, Rijnders BJA, Philips N, Verwijs R, Vanderbeke L, Van Tienen C, et al. Invasive aspergillosis in patients admitted to the intensive care unit with severe influenza: a retrospective cohort study. Lancet Respir Med. 2018; 6:782–792. Doi: 10.1016/S2213-2600(18)30274-1.

[3] Feys S, Carvalho A, Clancy CJ, et al. Influenza-associated and COVID-19-associated pulmonary aspergillosis in critically ill patients. Lancet Respir Med. 2024; 12:728–742. Doi: 10.1016/S2213-2600(24)00151-6.

[4] Robinson KM. Mechanistic basis of super-infection: influenza-associated invasive pulmonary aspergillosis. J Fungi (Basel). 2022; 8(5):428. doi:10.3390/jof8050428.

[5] Wichmann D, Hoenigl M, Koehler P, Koenig C, Lund F, Mang S, et al. Diagnosis and treatment of invasive pulmonary aspergillosis in critically ill intensive care patients: executive summary of the German national guideline (AWMF 113-005). Infection. 2025; 53(4):1299–1310. doi:10.1007/s15010-025-02572-2.

[6] Muñoz P, Guinea J, Bouza E. Update on invasive aspergillosis: clinical and diagnostic aspects. Clin Microbiol Infect. 2006; 12:24–39. doi:10.1111/j.1469-0691.2006.01603.x.

[7] Patterson TF, Thompson GR, Denning DW, et al. Practice guidelines for the diagnosis and management of aspergillosis: 2016 update by the Infectious Diseases Society of America. Clin Infect Dis. 2016; 63(4):e1–e60. doi:10.1093/cid/ciw326.

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