



A RARE CASE OF INVASIVE CANDIDIASIS: CANDIDA PNEUMONIA IN A COPD PATIENT

Dhinesh. P*	Postgraduate Resident JR III, Department of Respiratory Medicine, Jawaharlal Nehru Medical College, Belagavi *Corresponding Author
Jyothi Hattiholi	Associate Professor, Department of Respiratory Medicine, Jawaharlal Nehru Medical College, Belagavi
Bhagyashri Patil	Professor and Head, Department of Respiratory Medicine, Jawaharlal Nehru Medical College, Belagavi
Gajanan S. Gaude	Professor, Department of Respiratory Medicine, Jawaharlal Nehru Medical College, Belagavi
Gautam S.	Associate Professor, Department of Respiratory Medicine, Jawaharlal Nehru Medical College, Belagavi
Kirankumar Pujar	Assisatant Professor, Department of Respiratory Medicine, Jawaharlal Nehru Medical College, Belagavi
Ningappa Karalingannavar	Senior Resident, Department of Respiratory Medicine, Jawaharlal Nehru Medical College, Belagavi

ABSTRACT

Background: Invasive candidiasis is a life-threatening fungal infection affecting immunocompromised and critically ill patients. Candida pneumonia is an extremely rare manifestation, as the respiratory tract is typically resistant to Candida invasion. Patients with chronic lung disease, prolonged hospitalization, broad-spectrum antibiotic use, and corticosteroid therapy are at increased risk. However, due to the high prevalence of Candida colonization in the respiratory tract, differentiating colonization from true infection is a diagnostic challenge. The rising resistance of Candida species to antifungal agents, particularly fluconazole, further complicates management. **Case Presentation:** We report a case of a 74-year-old male with COPD and hypertension who presented with persistent cough, worsening dyspnea, and fever. Despite broad-spectrum antibiotics, his respiratory status deteriorated. Radiological findings suggested pneumonia, but bacterial cultures were negative. Sputum fungal culture confirmed azoles-resistant *Candida albicans*. The patient was started on intravenous anidulafungin, leading to clinical improvement. A follow-up chest X-ray showed resolution of pulmonary infiltrates, and he was discharged with oral voriconazole therapy. **Conclusion:** This case highlights the diagnostic dilemma of Candida pneumonia and the importance of early fungal diagnostics in non-resolving pneumonia. It also underscores the need for antifungal stewardship, given the emergence of azole-resistant *Candida* species. Clinicians should consider *Candida* pneumonia in patients with worsening pulmonary infiltrates despite appropriate antibiotic therapy.

KEYWORDS :**INTRODUCTION**

Invasive candidiasis is among the most common fungal infections in critically ill patients, with high morbidity and mortality rates [1]. While *Candida* bloodstream infections (candidemia) and deep-seated infections such as hepatosplenic candidiasis are well documented, *Candida* pneumonia remains exceedingly rare [2]. The respiratory tract is typically resistant to *Candida* invasion due to mucociliary clearance and immune defenses, making true *Candida* pneumonia difficult to diagnose [3].

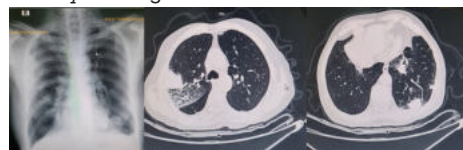
The incidence of invasive candidiasis has increased due to the rising number of immunocompromised individuals, the frequent use of broad-spectrum antibiotics, and prolonged ICU stays [4]. Patients with chronic lung diseases, such as COPD, are particularly vulnerable due to impaired mucociliary clearance and frequent corticosteroid use [5]. *Candida* pneumonia should be suspected in patients who deteriorate despite appropriate antibacterial therapy, particularly when radiological worsening is observed.

This report presents a rare case of azole-resistant *Candida albicans* pneumonia in a COPD patient, emphasizing the challenges in diagnosis and treatment. It also highlights the importance of antifungal stewardship in improving clinical outcomes.

Case Presentation

A 74-year-old male, a known case of COPD and hypertension, presented with a two-week history of worsening cough, expectoration with black specks, breathlessness, and low-grade fever. The patient denied hemoptysis, chest pain, or weight loss but reported increased fatigue and night sweats. He had been on long-term inhaled corticosteroids and bronchodilators.

On examination, the patient appeared moderately built, was afebrile, hemodynamically stable, and had an oxygen saturation of 96% on room air. Auscultation revealed bilateral bronchospasm and features suggestive of consolidation. Initial investigations revealed an HbA1c of 7.2%, mild leukocytosis, and a procalcitonin level of 0.92 ng/mL. Chest X-ray and HRCT thorax showed multifocal segmental consolidations bilaterally, predominantly in the right lower lobes.



The patient was started on empirical intravenous piperacillin-tazobactam and clarithromycin. However, after three days, he showed no clinical improvement, and his oxygen requirement increased. A repeat chest X-ray demonstrated worsening infiltrates, prompting further investigation. Sputum fungal cultures were obtained, which isolated *Candida albicans*.

resistant to fluconazole and other azoles. Blood cultures remained negative for fungal growth.



Given the confirmed fungal pneumonia, intravenous anidulafungin was initiated. Over the following week, the patient showed marked clinical improvement, with reduced dyspnea and normalization of inflammatory markers. A repeat chest X-ray after two weeks showed near-complete resolution of infiltrates. He was discharged on a 14 day course of oral voriconazole and was advised to follow up after one month.



DISCUSSION

Candida pneumonia is an underrecognized entity, often misdiagnosed due to the difficulty in distinguishing colonization from infection. True *Candida* pneumonia is rare, and diagnosis requires microbiological and radiological correlation, often supported by histopathological evidence [6]. This case highlights the need for heightened clinical suspicion in high-risk patients, particularly those with COPD and prolonged corticosteroid use.

Echinocandins, including anidulafungin, are the preferred treatment for invasive candidiasis due to their fungicidal activity and broad spectrum against *Candida* species [7]. Fluconazole resistance is increasingly reported, necessitating susceptibility testing before selecting antifungal therapy [8]. The Infectious Diseases Society of America (IDSA) and European guidelines emphasize early initiation of echinocandins in suspected invasive candidiasis cases [9].

The role of rapid fungal diagnostics has grown in importance, with PCR-based assays and β -D-glucan testing facilitating early diagnosis [10]. Delays in appropriate antifungal treatment contribute to increased mortality, underscoring the need for rapid and targeted therapy. Future research should explore combination antifungal strategies and novel antifungal agents to combat emerging resistance.

CONCLUSION

This report describes a rare case of azole-resistant *Candida* pneumonia in a COPD patient, illustrating the diagnostic and therapeutic challenges. Echinocandins remain the cornerstone of therapy for invasive candidiasis, and early fungal diagnostics are crucial in patients with unexplained pneumonia. Clinicians should maintain a high index of suspicion for fungal infections in non-resolving pneumonia cases.

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