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Case Report on Severe COVID-19 Complicated by Mucormycosis in a 58-Year-Old Male

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Keywords: Covid-19; Mucor mycosis; RT-PCR.

Abstract

Background: The COVID-19 pandemic has led to an increase in secondary infections, including mucormycosis, particularly among immunocompromised patients.

Case presentation: A 58-year-old male with uncontrolled diabetes and a history of right-sided stroke presented with continuous fever and severe dyspnea. Initial antibiotic therapy failed to resolve symptoms. COVID-19 was confirmed by RT-PCR, with CRP levels at 185 mg/L. He developed severe ocular swelling and was diagnosed with mucormycosis.

Management: Initial treatment with amphotericin B was inadequate due to allergic reactions. He underwent surgical intervention for the removal of the right eye but succumbed postoperatively.

Conclusion: This case highlights the critical need for the management of secondary infections in COVID-19 patients, emphasizing the importance of multidisciplinary care and timely intervention.

Introduction

The COVID-19 pandemic has significantly impacted healthcare systems globally, leading to increased morbidity from secondary infections, notably mucormycosis. Mucormycosis, an opportunistic fungal infection, primarily affects individuals with underlying conditions such as diabetes, particularly in the context of immunosuppression due to COVID-19 [1-5]. Diabetes is a well-known risk factor for mucormycosis due to hyperglycemia, which promotes fungal growth [6-8]. The mortality associated with mucormycosis is substantial, necessitating prompt diagnosis and treatment [9,10]. This case report provids the clinical course of a 58-year-old male patient with severe COVID-19 and subsequent mucormycosis, illustrating the complexities of managing concurrent infections during a pandemic.

Case presentation

Patient background: A 58-year-old male with a history of poorly controlled diabetes and a right-sided cerebrovascular accident presented to the emergency department with a one-week history of continuous fever and severe dyspnea. Initial antibiotic therapy, including broad-spectrum agents, failed to resolve his symptoms.

Clinical findings

Vital signs at admission

Temperature: 108°F (38.9°C), Heart Rate: 110 bpm, Respiratory Rate: 24 breaths/min, Blood Pressure: 95/60 mmHg, Oxygen Saturation: 88% on room air, Laboratory tests revealed ele-

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vated inflammatory markers, including a CRP level of 185 mg/L.

Diagnosis

A COVID-19 RT-PCR test returned positive. He was transferred to a tertiary care facility for advanced management. After 30 days, he continued to test mildly positive for COVID-19. During this period, he experienced severe swelling of the left eye, leading to a diagnosis of mucormycosis.

Figure 1: Mucormycosis.

Treatment course

Initial treatment with amphotericin B was initiated, but an allergic reaction necessitated a switch to liposomal amphotericin B, which was also intolerable. The patient struggled with oral intake despite being placed on a soft diet, compounded by severe swelling and wound care issues due to hospital protocols restricting visitor access. Despite multidisciplinary efforts, his condition deteriorated, leading to the decision for surgical intervention to remove the severely infected right eye.

Surgical Outcome

Preoperative vital signs were compared with Postoperative Vital Signs:

Table 1: Comparison of Pre- and Postoperative Symptoms and Vitals.

Parameter	Preoperative	Postoperative
Symptoms	Continuous fever, dyspnea, severe ocular swelling (mucormycosis), difficulty with oral intake, fatigue	Worsened fever, increased respiratory distress, signs of systemic infection, post-operative complications
Temperature	108°F (38.3°C)	103°F (39.4°C)
Heart Rate	115 bpm	180 bpm
Respiratory Rate	Normal	32 breaths/min (elevated)
Blood Pressure	90/55 mmHg	185/100 and unresponsive
Oxygen Saturation	85% on supplemental oxygen	75% on high-flow oxygen

The patient suffered a sudden cardiac event and was pronounced dead shortly after surgery.

Discussion

This case highlights several critical issues in managing severe COVID-19 patients with concurrent infections. The rapid progression of mucormycosis in this patient may have been exacerbated by underlying diabetes and delayed initiation of appropriate antifungal therapy. Challenges included inadequate wound care and the psychological impact of restricted visitor access during hospitalization.

Key considerations

Delayed diagnosis: Timely identification of mucormycosis is vital for improving outcomes.

Antifungal therapy: Allergic reactions to antifungal agents highlight the need for careful monitoring and alternative treatment strategies.

Psychosocial impact: Visitor restrictions during COVID-19 can exacerbate stress and anxiety, potentially affecting patient recovery.

Conclusion

This case highlights the urgent need for improved management strategies for secondary infections in COVID-19 patients. Comprehensive care, including timely interventions and psychological support, is vital for optimizing patient outcomes. Future healthcare protocols must address the complexities of managing concurrent infections, particularly in pandemics.

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