

Therapeutic Challenges: A Case of Cryptococcal Pneumonia in an Immunocompetent Host

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Introduction

Cryptococcus neoformans is an opportunistic fungal pathogen that primarily affecting immunocompromised host such as those with HIV, or on immunosuppressive therapy. While its pulmonary manifestations are rarely seen in immunocompetent host diagnosis is often delayed due to its non-specific symptomatology, which closely mimics tuberculosis or malignancy. Infection occurs via inhalation of spores, with pulmonary involvement ranging from localized nodules to diffuse infiltrates depending on immune status. We describe a case of isolated pulmonary cryptococcal infection in a elderly gentleman who successfully treated with combination of oral fluconazole and flucytosine with complete resolution.

Case Description

A 62-year-old gentleman known diabetes mellitus and myasthenia gravis, on low dose prednisolone (5mg/day); he presented with a two-week history of fever, productive cough, and a significant 10 kg weight loss over three months. There was history of exposure to pigeon droppings. There was no contact with tuberculosis or a family history of malignancy. On admission, he was tachypnoeic, hypoxic, and required ventrimask oxygen. Initial laboratory findings revealed leucocytosis (WBC $12.6 \times 10^9/L$) with elevated inflammatory markers (CRP 13.3 mg/L and ESR 82 mm/hr). Contrast-enhanced CT thorax (fig 2a) demonstrated extensive bilateral nodular consolidations and air-bronchograms. Bronchoscopy revealed no endobronchial lesions. An exhaustive diagnostic workup ruled out tuberculosis and bacterial pathogens. The diagnosis of cryptococcal pneumonia was established by the isolation of *Cryptococcus neoformans* from bronchoalveolar lavage (BAL) culture and a positive serum cryptococcal antigen, with a titre of 1:640. Viral screening including HIV, Hepatitis screening were non reactive.

Initial management with intravenous amphotericin B deoxycholate was complicated by the development of acute kidney injury and fluid overload after one week of therapy, highlighting therapeutic challenge. Consequently, therapy was switched to combination therapy of high dose fluconazole 1200mg once daily and flucytosine. Three months after discharge, patient showed significant clinical and radiological resolution (fig 1b & 2b).

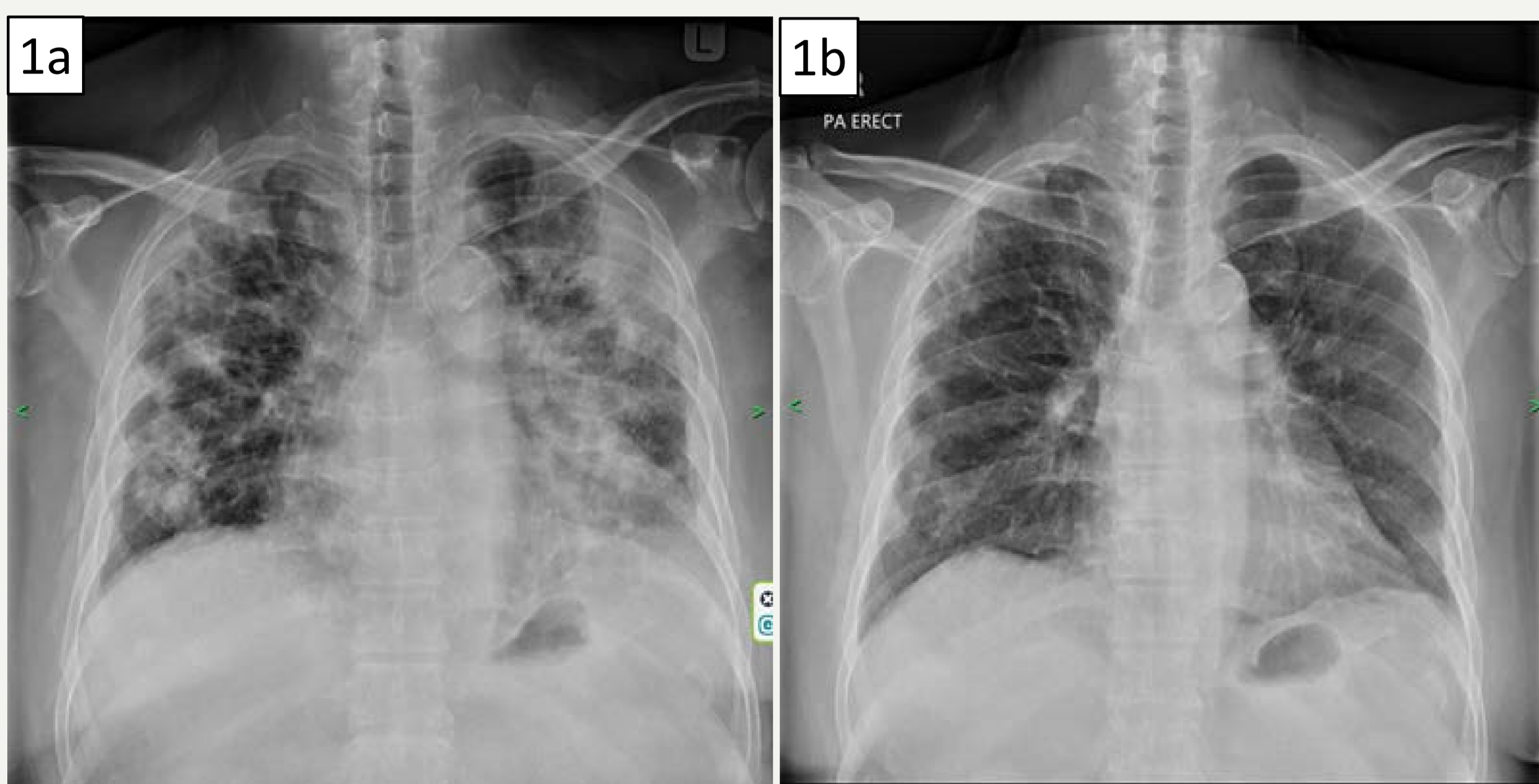


Fig 1a: Chest X-ray pre treatment showed multiple pulmonary nodular opacities and pleural thickening both lungs.

Fig 1b: Chest X-ray post 3 months antifungal showed significant resolution on lung lesions

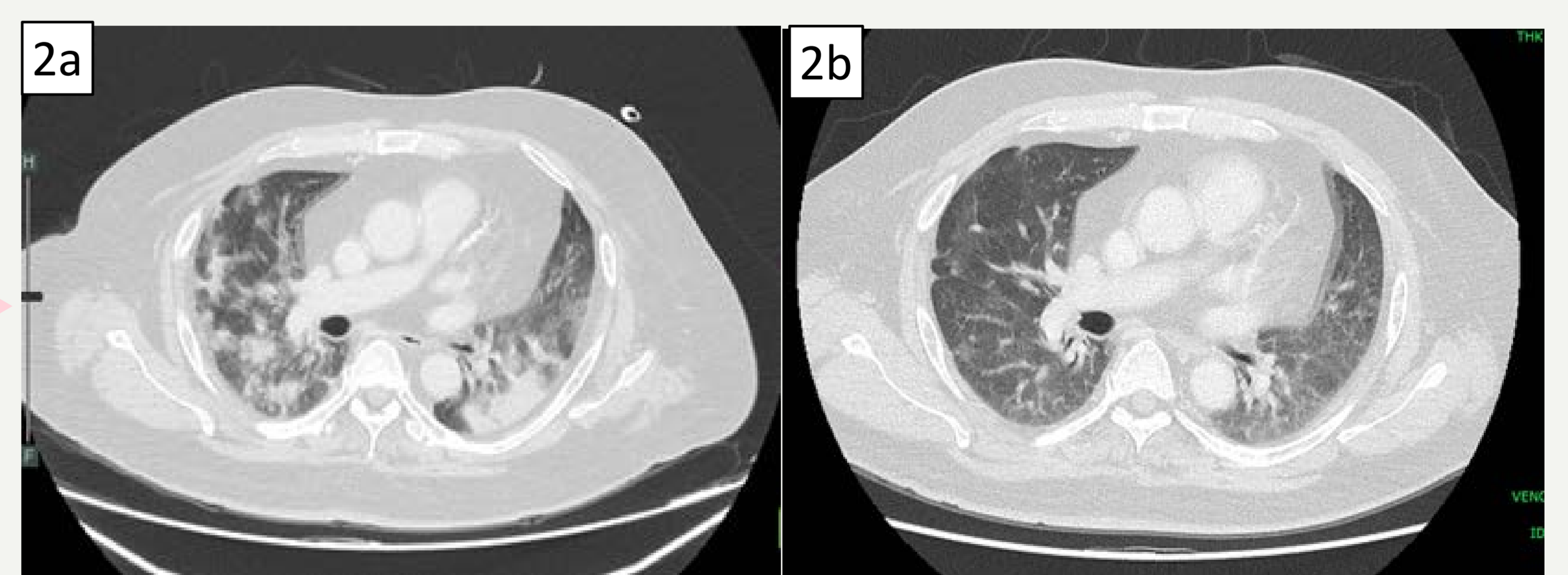


Fig 2a: Contrast CT thorax pretreatment showed bilateral patchy consolidation in peribronchiolar and subpleural distribution

Fig 2b: Contrast CT thorax post 3 months antifungal showed improvement of consolidation with residual consolidation in both lungs

Discussion & Conclusion

This case underscores the diagnostic pitfalls of cryptococcal pneumonia and the imperative for a high clinical suspicion, particularly with a history of pigeon exposure. Non-HIV patients can develop severe cryptococcal pneumonia, particularly with underlying DM and steroid or steroid-sparing agent use. It also exemplifies a core management dilemma, where amphotericin deoxycholate related toxicity necessitated an individualized approach. This case highlighted that a combination of oral fluconazole and flucytosine is an alternative choice for pulmonary cryptococcosis in non-HIV infected individuals with promising clinical outcome. balancing antifungal efficacy against potential drug toxicities in a patient with significant comorbidities.

References:

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