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CASE REPORT OF MELIOIDOSIS AND UROSEPSIS DUE TO CANDIDA ALBICANS

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INTRODUCTION

This case report presents a 65-year-old male with poorly controlled diabetes mellitus who developed a rare co-infection involving Burkholderia pseudomallei and Candida albicans during hospitalization for unstable angina and hyperglycemic hyperosmolar nonketotic syndrome (HHNS)

CASE PRESENTATION

The patient with a 10-year history of type 2 diabetes and hypertension presented to the emergency department with 30-minute episode of left-sided chest pain radiating to the back, accompanied by diaphoresis and vomiting. The initial ECG was unremarkable to acute coronary syndrome nor STEMI. Blood pressure was 155/110 mmHg, and SpO2 was 98%. Initial Labs findings revealed hyperglycemia (643 mg/dL); HbA1c 13.7%), metabolic acidosis. leukocytosis (10,440/mm^3), and slightly elevated neutrophils (74%) and monocytes (13%). Urinalysis was positive for leukocytes (2-5/HPF), protein (+1), glucose (+2), and hematuria (50-60/HPF). Blood cultures were negative. Chest X-ray showed aortic sclerosis and cardiomegaly. He was diagnosed with unstable angina and suspected community acquired pneumonia. An empiric antibiotic ceftriaxone 2gr OD was initiated.

After four days hospitalization, the patient developed progressive pulmonary and urinary symptoms, and a brain MSCT revealed cerebellar infarction. Chest auscultation revealed diffuse wheezing and rales. Imaging showed early pulmonary edema and pneumonia with right-sided pleural effusion (Figure 1.B). Laboratory investigations revealed a normal renal and hepatic function profile. Blood tests demonstrated an albumin level of 2.65 g/dL, indicative of hypoalbuminemia commonly observed in systemic infections. Inflammatory markers were significantly elevated, as reflected by a positive qualitative C-reactive protein (CRP) and a procalcitonin level of 0.55 ng/mL, suggesting a bacterial infection.

The patient was subsequently admitted to the Intensive Care Unit (ICU) due to the need for ventilatory support. Cultures from the endotracheal aspirate and central venous catheter (CVC) revealed *Burkholderia pseudomallei*. Concurrent yeast cell and pseudo hyphae as observed on sputum direct gram stain and KOH wet mount. Yeast and pseudo hyphae were also detected in urine; *Candida albicans* was confirmed by VITEK® 2.0 Compact. Intravenous voriconazole (400 mg q12h) and meropenem (1 g q8h) were started.

Serial D-dimer measurements exhibited a progressive increase from 850 ng/mL to as high as 3440 ng/mL over the course of hospitalization. leukocyte count of 17,310/mm^3, decreasing to 11,240/mm^3 by the end of ICU treatment, with a notable shift in differential leukocyte counts: neutrophils initially at 81% dropped to 73%, while monocyte counts followed a similar decreasing trend from 13% to 10%, coupled with a reduction in lymphocyte count from 13% emulating an immune response alteration typical of severe stress or infection. On day 14, the patient showed marked clinical improvement with resolution of respiratory symptoms, blood glucose control improved, hemodynamic stabilization and was extubated. Final diagnosis included melioidosis and systemic candidiasis in the context of uncontrolled diabetes. The patient was hospitalized for 20 days. Targeted therapy with meropenem and voriconazole led to significant clinical improvement. Antimicrobial therapy was continued for a planned 6 weeks (eradication) also antifungal treatment with clinical follow-up arranged

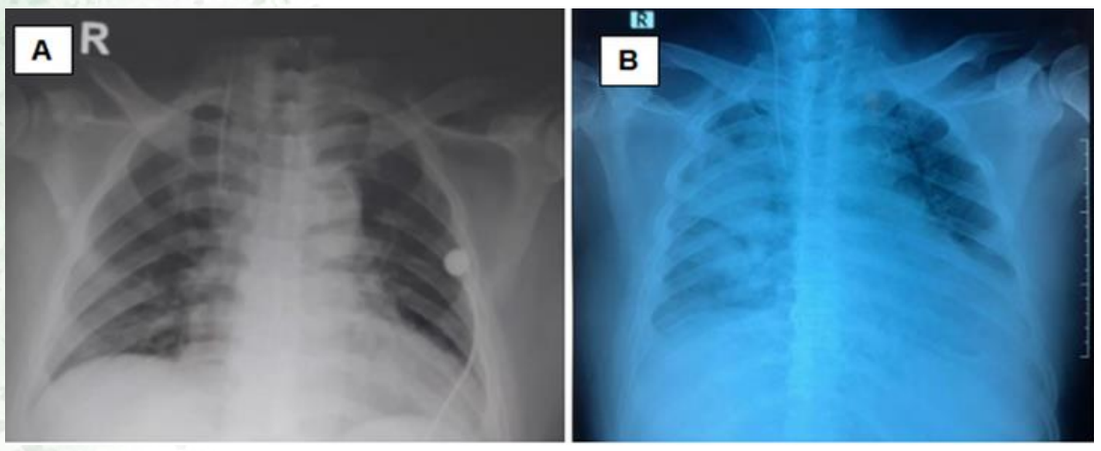

Figure 1. A. CXR on admission. Empiric antibiotic with Ceftriaxone were administered
Figure 2. B. CXR 4 days hospitalization showing early pulmonary edema and worsening pneumonia

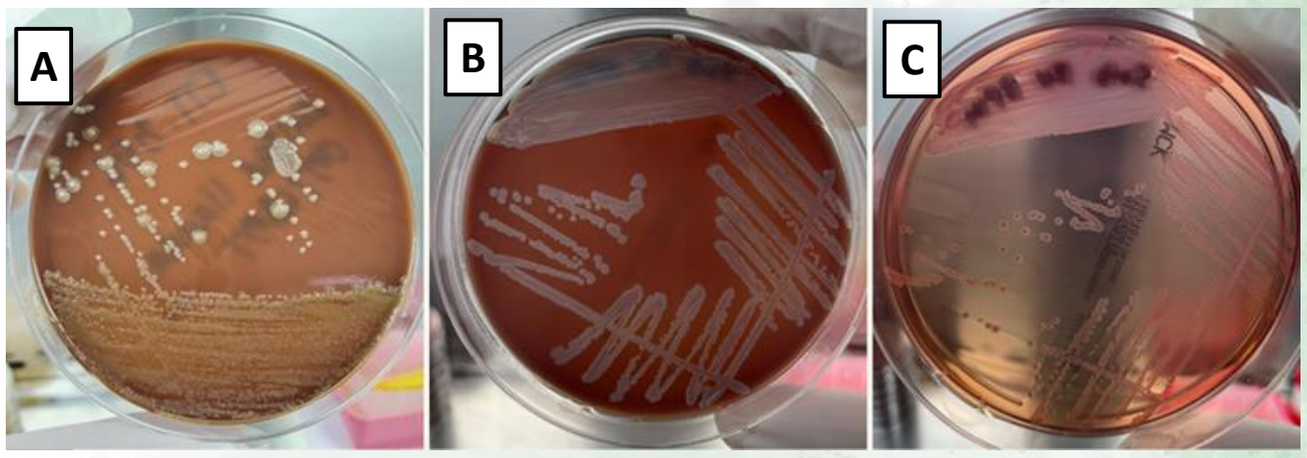

Figure 2. A. Direct ETT specimen inoculated on Chocolate Blood Agar after incubated for 72 hours incubation with CO2 5%
Figure 2. B. Direct ETT specimen inoculated on Sheep Blood Agar after incubated for 72 hours incubation without CO2 5%
Figure 2. C. Direct ETT specimen inoculated on MacConkey Agar after incubated for 72 hours incubation without CO2 5%

CONCLUSION AND DISCUSSION

Melioidosis and candidiasis rarely occur together, especially in hospital settings. Diabetes mellitus is a known risk factor for both infections. Both organisms pose a significant risk to individuals with compromised immune systems[1,2]. This report highlights the complexity of managing opportunistic infections in diabetic patients. It underscores the need for clinicians to consider opportunistic infections in ICU patients especially those with uncontrolled diabetes; emphasizes the role of microbiological diagnostics in guiding targeted therapy. Prompt diagnosis using microbial cultures and targeted therapy can lead to favorable outcomes even in critically ill patients. The recommended standard treatment includes at least two weeks of intravenous antibiotics—commonly ceftazidime or meropenem—followed by a course of oral antibiotics for additional weeks (trimethoprim-sulfamethoxazole)[3,4].

ALL AUTHORS DECLARE THAT THEY HAVE NO CONFLICT OF INTEREST.

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