A Case of Burkholderia cepacia in a Newly Diagnosed Type 2 Diabetes Mellitus Individual

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***Abstract*—Background: Burkholderia cepacia is an aerobic, motile, opportunistic Gram-negative bacillus, notorious for its multidrug resistance and association with nosocomial infections, especially in immunocompromised individuals.**
Case Presentation: We report a 28-year-old male with newly diagnosed type 2 diabetes mellitus (HbA1c: 13.4%) who presented with a thigh abscess and high-grade fever. Culture of aspirated pus grew Burkholderia cepacia, susceptible to meropenem, cotrimoxazole, and ceftazidime. The patient responded well to meropenem and cotrimoxazole, with significant clinical improvement, and was discharged on oral cotrimoxazole.
Conclusion: B. cepacia infection, although rare outside cystic fibrosis or chronic granulomatous disease, can complicate diabetes mellitus. Awareness and prompt antimicrobial therapy are essential to reduce morbidity and prevent recurrence.

***Index Terms*—Burkholderia cepacia, diabetes mellitus, nosocomial infection, multidrug resistance, case report**

I. INTRODUCTION

Burkholderia cepacia complex (Bcc) represents a group of closely related Gram-negative bacilli that are intrinsically resistant to many antibiotics and disinfectants. Initially recognized as plant pathogens, they have emerged as important opportunistic human pathogens, particularly in patients with cystic fibrosis, lung transplantation, and chronic granulomatous disease.
Infections caused by B. cepacia are difficult to treat due to multidrug resistance and the potential for Cepacia syndrome a fatal necrotizing pneumonia with bacteremia in cystic fibrosis patients. Reports of infections in individuals without pre-existing lung disease are increasing, especially in those with compromised immunity such as uncontrolled diabetes. We present a rare case of B. cepacia infection in a newly diagnosed type 2 diabetic patient who developed a soft tissue abscess

II. CASE REPORT

A 28-year-old male presented with a wound over the right thigh of 15 days duration and high-grade fever for 10 days. He denied prior chronic illnesses. Examination revealed an abscess with surrounding inflammation. Pus aspirated from the wound was sent for microbiological evaluation.

III. INVESTIGATIONS:

Total leukocyte count: 8,270/µL HbA1c: 13.4% Pus culture: Burkholderia cepacia isolated antimicrobial susceptibility: Sensitive to meropenem, cotrimoxazole, and ceftazidime

Treatment:
The patient was initiated on intravenous meropenem and oral cotrimoxazole. He showed marked clinical improvement with reduction in fever and local inflammation. He was discharged in stable condition on oral cotrimoxazole (1600/320 mg twice daily for 14 days).

IV. DISCUSSION

Infections with B. cepacia are relatively rare but increasingly recognized in hospitalized patients, particularly those with underlying comorbidities. Its intrinsic resistance to multiple classes of antibiotics complicates management.

This case highlights two key points:

1. Uncontrolled diabetes mellitus may predispose to unusual infections, including those caused by B. cepacia.
2. Early identification and susceptibility-guided therapy are crucial for favorable outcomes.

Similar reports in literature have described B. cepacia infections in patients with diabetes, malignancy, and prolonged ICU stays. Cotrimoxazole, meropenem, and ceftazidime remain the most consistently effective agents. However, recurrence is common, and long-term follow-up is warranted.

V. CONCLUSION

Burkholderia cepacia is an emerging opportunistic pathogen beyond its classical association with cystic fibrosis. In diabetic patients presenting with soft tissue infections, high clinical suspicion and timely microbiological confirmation are critical. Given its multidrug resistance, susceptibility testing should guide therapy. Physicians must remain vigilant, as delays in recognition and treatment can lead to adverse outcomes.

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