

## SEPTICAEMIC MELIOIDOSIS IN A DIABETIC PATIENT FROM A TERTIARY CARE CENTRE IN KERALA

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### PRESENTATION OF CASE

A 62-year-old male presented to the Medicine Department with altered sensorium with a history of fever of unknown origin of 6 weeks duration. Initially, it was low-grade, on and off fever, which later got converted into high-grade fever with chills and rigors. No h/o cough, dysuria, loose stools, vomiting or headache. No h/o any surgeries in the past, bathing in open water bodies or wound which came in contact with soil (as the patient remembers of). He was a known case of diabetes and was on oral hypoglycaemics. He consulted a doctor in a local hospital and was started on oral amoxicillin and later referred to our hospital as he was not improving.

On examination, vitals were stable. He was febrile and pale. Abdominal examination revealed mild abdominal tenderness. The examinations of other systems were unremarkable.

### CLINICAL DIAGNOSIS

Fever of Unknown Origin

### DIFFERENTIAL DIAGNOSES

- Infective endocarditis.
- HIV infection.
- Brucellosis.

### PATHOLOGICAL DISCUSSION

Laboratory examination revealed a total count of 12,000, which later elevated to 14,000. Blood sugar was 255 mg/dL with normal renal function. Peripheral smear reported as neutrophilic leucocytosis with toxic granules. CSF study was done and was normal. Later, an USG abdomen was done which revealed ill-defined hypoechoic lesion involving splenic parenchyma, largest measuring 2.1x1.3 cm. As the patient's condition was bad, abscesses were not drained. Blood sample was sent to microbiology laboratory for culture and sensitivity. Blood culture revealed *B. pseudomallei*.



**Figure 1. Colonies of *B. pseudomallei* on Ashdown's Medium**

*Burkholderia pseudomallei*, the causative agent of melioidosis, is a gram-negative bacterium with rounded ends and bipolar staining, seen in tropical and subtropical soils and waters. It has got a high degree of virulence and strong antibiotic resistance.<sup>1,2</sup> A number of risk factors for developing melioidosis such as diabetes, thalassaemia, renal disease and occupational exposure to surface water have been defined. Patients with diabetes mellitus, in particular, have a high incidence.<sup>3,4</sup> A male preponderance is evident in all melioidosis case reports published. This likely reflects the outdoor work and occupational exposure to soil and water. The incidence is high during rainy seasons, as the bacteria move to the surface with rising water table and multiply in the surface water and wet soil.<sup>4</sup> Pneumonia is the most frequent presentation of melioidosis and is involved in approximately half of all cases.<sup>1</sup> But when presenting as acute septicaemic melioidosis, the mortality is high, at least 34% despite treatment with ceftazidime, the current treatment of choice.<sup>5</sup> Isolation of *B. pseudomallei* from the body fluids of patients still remains the gold standard in the diagnosis.<sup>1</sup>

### DISCUSSION OF MANAGEMENT

*B. pseudomallei* is frequently resistant to many antibiotics including aminoglycosides and first- or second-generation cephalosporins.<sup>6</sup> Since other third-generation cephalosporins such as ceftriaxone are less active, ceftazidime is the treatment of choice.<sup>7,8</sup> Current interventions are early intravenous administration of antibiotics, ceftazidime or

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carbapenems for 10 to 14 days followed by oral administration of cotrimoxazole or cotrimoxazole-doxycycline for 12 to 20 weeks.<sup>2</sup>

In this case, the patient might have been infected as a result of occupational exposure, a minor trauma which went unnoticed or it could be an earlier exposure as the disease is notorious for latency and reactivation. The presence of diabetes mellitus as a risk factor is accountable for the development of septic shock. Early treatment is also essential in case of melioidosis. If the patient is in sepsis with abscesses in spleen or liver, if you have ruled out routine causes like infective endocarditis or HIV related abscesses, patient should be started on Ceftazidime (50 mg/kg, upto 2 g) every 6 hours or Meropenem (25 mg/kg, upto 1 g) every 8 hours even before the isolation of organism in cultures.

Initially, patient was started on Inj. Ceftriaxone 2 g IV BD and Inj. Acyclovir 500 mg IV Q8H. Blood culture sent to microbiology laboratory yielded *Burkholderia pseudomallei* sensitive to Ceftazidime, Meropenem, Doxycycline and Cotrimoxazole and resistant to Ciprofloxacin, Chloramphenicol and Amoxyclav. Based on antibiotic sensitivity, the antibiotic was changed to Inj. Meropenem 1 g IV Q8H. Patient responded well to intravenous Meropenem therapy and after 2 weeks of intravenous therapy, he was sent home on oral Doxycycline.

#### FINAL DIAGNOSIS

Septicaemic Melioidosis.

Septicaemic melioidosis is often a fatal disease despite treatment with antibiotics such as ceftazidime to which *Burkholderia pseudomallei* is sensitive *in vitro*. We report a case of *B. pseudomallei* causing sepsis in a diabetic patient. A

62-year-old diabetic farmer referred from a peripheral hospital with high-grade fever and altered sensorium. The patient was treated with meropenem and responded well to the treatment.

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