

# Localized Melioidosis

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## Introduction

Melioidosis, a tropical and sub tropical infectious disease that strikes slowly, is hard to diagnose and eventually fatal and remains an emerging infectious disease with serious environmental and health problems. Melioidosis remains under-recognized in many regions of the world because of its limited understanding among clinicians and microbiologists that leads to misidentification and mismanagement. Also due to lack of modern equipped laboratories for its identification and shortage of funds for research it remains largely untreatable.<sup>1</sup> Facing increasing cases all over the world, clinicians and microbiologists in Pakistan should be more alert and aware of this clinical entity. We report the case of a localized infection in a patient with culture proven melioidosis admitted to the University of Malaya Medical Center, Kuala Lumpur, Malaysia.

## Case Report

An obese boy (aged 11 years) was referred from Klang General Hospital as a case of non-healing ulcer (measuring 4x2 cm) over the right inguinal region. He had been admitted there for 2 weeks for the management of the ulcer that had resulted from the collection of pus. He was diagnosed as type 2 Diabetes mellitus. He also had a history of multiple abscesses over the buttocks for one and half years but that resolved without any medication.

Blood chemistry showed the following results: Sugar level 378 mg/dl, total cholesterol 222 mg/dl, white blood cells 12.8, and ESR 22 mm/hour. Pus swab from the ulcer gave rise to *Burkholderia pseudomallei* that was sensitive to Cotrimoxazole, Augmentin, Ceftazidime, Cefoperazone, Ciprofloxacin, chloramphenicol, and imipenem while resistant to aminoglycosides. *Burkholderia pseudomallei* were isolated by conventional methods and API 20 NE [manufactured by Bio Merieux France], on the other hand sensitivity was done by disc diffusion method. Melioidosis serology showed result 1:80 was diagnostic. His total glycosylated hemoglobin was high. After initiation of Ceftazidime and Augmentin and control of sugar level by insulin, the ulcer started healing. He was referred back to Klang General Hospital for follow up.

## Discussion

Melioidosis is caused by *Burkholderia pseudomallei*, a free-living gram-negative aerobic motile bacillus which is a natural inhabitant of soil and water in an area between 20° north and 20° south of Equator such as Southeast Asia and North Australia.<sup>2</sup> In the past many cases have been reported from other parts of the world like China, Taiwan, Middle East especially Tehran (where 50% of the population are serologically positive)<sup>3</sup>, America, India and Pakistan.<sup>4</sup> The possible routes of transmission of melioidosis are thought to be direct penetration of organism through minor skin or soft tissue abrasions during working in paddy fields, inhalation, contaminated water supply and ingestion.<sup>5</sup> In our case, mode of transmission of *Burkholderia pseudomallei* was direct introduction of organism through the wound. It affects all ages. In a cohort study, Kanaphun et al observed that 80% of children infected are more in Thailand and East Malaysia as

compared to Singapore.<sup>6</sup> In one study 62.5% Malaysian children presenting with lymphadenopathy had an abscess in the liver and spleen.<sup>7</sup> Apparently majority of known melioidosis cases have other underlying diseases as diabetes mellitus, renal failure, occupational exposure or trauma.<sup>8</sup> In culture proven melioidosis of patients with a history of diabetes mellitus, 60% had high levels of glycosylated hemoglobin.<sup>9</sup> The clinical manifestations of melioidosis disease range from local infections to fulminant septicemia. Localized melioidosis occurs in the form of acute suppurative lesions, superficial and deep seated abscess like psoas major muscle, parotid gland, cellulites, chronic otitis media, sepsis following burns, trauma etc. Infections of the skin, subcutaneous tissue and lymph nodes were common in childhood melioidosis.<sup>10</sup> Laboratory investigations are similar to those of most other bacterial infections. Important method is isolation and identification of *Burkholderia pseudomallei* from clinical specimens. Nevertheless serological tests like haemagglutination test, ELISA for IgM and IgG, immunofluorescent antibody test are also useful in the diagnosis of melioidosis.

Tetracycline, chloramphenicol, cotrimoxazole, ceftazidime, Amoxicillin-clavulanate and ciprofloxacin have been the mainstay of treatment over the years. Localized infections in the absence of septicaemia respond well to ceftazidime as seen in our case. Relapse of infection is also frequently seen after apparently successful antibiotic treatment.<sup>11</sup> Patients require long term maintenance therapy and follow up, since *Burkholderia pseudomallei* remains latent. It stays for 26 years in the body.<sup>12</sup> Co-trimoxazole amoxicillin-clavulanate and tetracycline are most widely used for maintenance therapy for at least 20 weeks.<sup>13</sup>

## References

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