



## **An Interesting Case of Melioidosis**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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**Case Study**

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## **ABSTRACT**

Melioidosis also termed as Whitmore's disease is an infectious disease which is caused by bacterium *Burkholderia pseudomallei*. Southeast Asia and northern Australia are endemic to this diseases which is predominantly transmitted in tropical climates. The course of disease involves multiple system involvement most common being lungs and it is mistaken as *tuberculosis* in many times. The other system involved are musculoskeletal and abscess over internal organs in spleen, liver. This is a case report of 20 year old male presented with history of fever, swelling over multiple sites of the body, reddish discharge from the swelling, with history of planting trees in the past. Routine investigation showed *leucocytosis* and multiple abscess in liver and spleen. Blood culture showed positive for *Burkholderia pseudomallei*. Started treatment with *meropenam* and *linezolid* for 2 weeks and patient resolved from symptoms completely and discharged. Here we discuss about an clinical course and treatment response to bacteria *Burkholderia pseudomallei*.

**Keywords:** *Burkholderia pseudomallei*; melioidosis; abscess.

## **1. INTRODUCTION**

Melioidosis is endemic in South East Asia, Asia and northern Australia. Infection usually follows

percutaneous inoculation or inhalation of the causative bacterium, *Burkholderia pseudomallei*, which is present in soil and surface water in the endemic region [1]. While 20–36% of melioidosis

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cases have no evident predisposing risk factor, the vast majority of fatal cases have an identified risk factor, the most important of which are diabetes, alcoholism and chronic renal disease (Currie, 2003). Melioidosis primarily affects persons who have regular exposure to soil and water, whereby the bacteria enters the human body via a penetrating injury or open wound, inhalation, or ingestion of contaminated food and water. Common clinical presentations include pneumonia [2], hence it is mistaken as tuberculosis and many patient land up in septic shock due to delay in start of appropriate antibiotic. superficial and deep organ abscesses, bacteremia, and genitourinary and musculoskeletal infections [3]. A prospective study which was conducted in australia showed 50% of case fatality in patients prested with septic shock and only 4% in patient presented without septic shock [3]. The distribution of melioidosis is referred as "tips of iceberg" as the cases are infrequently reported [4]. In 2004 in nepal the first case was reported [5] after travel history to Thailand which is a country endemic to melioidosis [6].

## 2. CASE PRESENTATION

20 year old boy doing graduation in *botany* in Bangalore came with history of fever on and off for 7 days, intermittent type, low grade fever. History of multiple swelling all over the body with reddish discharge from the swelling (Fig. 1, Fig. 2, Fig. 3), discharge aggravated while walking and relieved by rest. History of pain over the swelling, not a known case of *diabetic*, chronic kidney disease, no history of any drug intake in the past, no history of sexual contact. On examination patient was conscious oriented febrile, no signs of lymphadenopathy. Vitals were stable on admission. Routine investigation showed *leucocytois*, raised *ESR* and *CRP*, raised serum *alkaline phosphatase*, negative viral serology, USG abdomen showed multiple *hypoechoic* lesions with central hyperechoic pattern in the spleen. CT abdomen showed multiple small well defined, non enhancing *hypodense* lesions seen within liver and spleen (Fig. 4). Blood culture and sensitivity showed gram negative organism within typical bipolar staining in the grams stain and sensitive only to *ceftazidime*, *meropenam* and resistant to most of the antibiotic. Hence patient was started on injection *meropenem* 1g iv 8th hourly and Tablet *linezolid* 600 mg twice a day for 2 weeks. Surgery opinion sougthed out planned for incision and drainage over abscess procedure was uneventful. Patient was

discharged after 2 weeks coarse of iv antibiotics with *sulfamethaxazole/trimethoprim* (800/180 mg) for 1 month and advised to review. Patient was reviewed after 1 month symptoms resolved completely (Fig. 5, Fig. 6).



Fig. 1. Abscess over bilateral knee joint



Fig. 2. Abscess over Left Hand



Fig. 3. Abscess over Right Leg

## 3. DISCUSSION

Melioidosis is an infection caused by gram negative bacteria *burkholderia pseudomallei* affect men mostly who had contact with soil [7]. The organism most commonly affects immunosuppressive patients like diabetes

mellitus, chronic kidney disease, post organ transplant, patient on steroids .Among these the most common predisposing factor is diabetes mellitus [8]. The incubation period range from 1 to 21 days [9]. The common presentation swelling over multiple sites resembling abscess over subcutaneous region, multiple joints involving knee, ankle, wrist. A recent study from Australia suggested that the most common involvement in meliosis is bone and joint, with elevated erythrocyte sedimentation rate and C-reactive protein [10]. The disease rapidly progresses to septic shock, multiorgan failure and death.



**Fig. 4. Abscess over liver and spleen**



**Fig. 5. Resolution of abscess in hand**



**Fig. 6. Resolution of abscess in leg**

The diagnosis is mainly any patient presents you with fever, joint pain, multiple swelling, and symptoms of pneumonia like cough, cold and breathlessness with history of soil contact meliodosis should be ruled out. Sample should be sent for routine investigation and 2 samples for blood culture and sensitivity and pus culture and sensitivity before the start of antibiotics.

Treatment consists of two phases, acute phase and eradication phase. In acute phase parental anti biotic given for 2 weeks. Most of the antibiotic are resistant to burkholderia pseudomallei sensitive only to fewer antibiotics like amoxicillin with potassium clavulnate, cefotazidime, and carbapenems. Treatment with carbapenam has good outcome [11]. In eradication phase oral antibiotics is given of 20 weeks recent study in Thailand suggested that preferred drug is Co-trimoxazole (sulfamethaxazole and trimethoprim) [11].

#### **4. CONCLUSION**

Due to increase in number of cases in India it is necessary to consider meliodosis when patient presents with bone and joint infection. Early diagnosis is mandatory as the virulence of the organism is high which cause septic shock and death. Melioidosis not only affects immunosuppressed individual it also affects immunocompetant individuals hence preventive measures to be taken whenever we have contact with the soil.

#### **DISCLAIMER**

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

#### **CONSENT AND ETHICAL APPROVAL**

As per international standard or university standard guideline Patient's consent and ethical approval has been collected and preserved by the authors.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## REFERENCES

1. Melioidosis: epidemiology, pathophysiology, and management. Cheng AC, Currie BJ. Clin Microbiol Rev. 2005;18:383–416. [PMC free article] [PubMed] [Google Scholar]
2. Splenic abscess due to chronic melioidosis in a patient previously misdiagnosed as tuberculosis. Kunnathuparambil SG, Sathar SA, Tank DC, Sreesh S, Mukunda M, Narayanan P, Vinayakumar KR. Available: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3959514/> Ann Gastroenterol. 2013;26:77–79. [PMC free article] [PubMed] [Google Scholar]
3. The epidemiology and clinical spectrum of melioidosis: 540 cases from the 20 year darwin prospective study. Currie BJ, Ward L, Cheng AC. PLoS Negl Trop Dis. 2010;4:0. [PMC free article] [PubMed] [Google Scholar]
4. Melioidosis as an emerging global problem. Dance DA. Acta Trop. 2000;74:115–119. [PubMed] [Google Scholar]
5. Melioidosis imported into Nepal. Shrestha N, Sharma S, Khanal B, Bhatta N, Dhakal S. Scand J Infect Dis. 2005;37:64–66. [PubMed] [Google Scholar].
6. Melioidosis: a major cause of community-acquired septicemia in northeastern Thailand. Chaowagul W, White NJ, Dance DA, et al. J Infect Dis. 1989;159:890–899. [PubMed] [Google Scholar]
7. Hassan MR, Pani SP, Peng NP, Voralu K, Vijayalakshmi N, Mehanderkar R, et al. Incidence, risk factors and clinical epidemiology of melioidosis: A complex socio-ecological emerging infectious disease in the Alor Setar region of Kedah, Malaysia. BMC Infect Dis. 2010;10:302.
8. Gopalakrishnan R, Sureshkumar D, Thirunarayan MA, Ramasubramanian V. Melioidosis: An emerging infection in India. J Assoc Physicians India. 2013;61:612–4.
9. Melioidosis: a major cause of community-acquired septicemia in northeastern Thailand. Chaowagul W, White NJ, Dance DA, et al. J Infect Dis. 1989;159:890–899. [PubMed] [Google Scholar]
10. Shetty RP, Mathew M, Smith J, Morse LP, Mehta JA, Currie BJ. Management of melioidosis osteomyelitis and septic arthritis. Bone Joint J. 2015;97-B:277–82.
11. Dance D. Treatment and prophylaxis of melioidosis. Int J Antimicrob Agents. 2014; 43:310–8.

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