

## AN INTERESTING CASE OF MELIOIDOSIS

**Running Title:** AN INTERESTING CASE OF MELIOIDOSIS

### 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

### 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 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 meliodosis 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 meliodosis[6].

## 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 (Figure 1, Figure 2, Figure 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 phosphate*,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 (Figure 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 soughed out planned for incision and drainage over abscess procedure was uneventful. Patient was discharged after 2 weeks coarse of iv antibiotics with *sulfamethazole/trimethoprim* (800/180 mg) for 1 month and advised to review.Patient was reviewed after 1 month symptoms resolved completely (Figure 5,Figure 6).

## 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[11].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 melioidosis is bone and joint, with elevated erythrocyte sedimentation rate and C-reactive protein [9].The disease rapidly progresses to septic shock, multiorgan failure and death.

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 melioidosis 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 antibiotic given for 2 weeks. Most of the antibiotic are resistant to burkholderia pseudomallei sensitive only to fewer antibiotics like amoxicillin with potassium clavulunate, cefotazidime, and carbapenems. Treatment with carbapenam has good outcome[10].In eradication phase oral antibiotics is given of 20 weeks recent study in Thailand suggested that preferred drug is Cotrimaxazole ( sulfamethaxazole and trimethoprim)[10].

## CONCLUSION

Due to increase in number of cases in India it is necessary to consider melioidosis 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 .

## COMPETING INTERESTS DISCLAIMER:

Authors have declared that no competing interests exist. 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.

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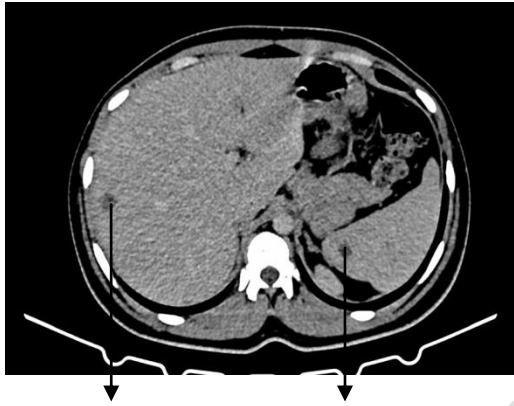
**Figure 1 Abscess over bilateral knee joint**



**Figure 2 Abscess over Left Hand**



**Figure 3** Abscess over Right Leg



**Figure 4** Abscess over liver and spleen



**Figure 5** Resolution of abscess in hand



**Figure 6 Resolution of abscess in leg**

UNDER PEER REVIEW