Melioidosis: A report of two cases

DIMPLE M. JAMKHANDI, REGINALD ALEX, KURYAN GEORGE

ABSTRACT
Melioidosis is increasingly being reported from India in the past few years. Since it can mimic tuberculosis during the initial presentation, treatment with antituberculosis drugs is common. It should be considered in the differential diagnosis of any pyrexia of unknown origin. We report two cases of melioidosis that presented with pyrexia of unknown origin and a localized cutaneous abscess over the chest wall.


INTRODUCTION
Melioidosis is a zoonotic disease caused by Burkholderia pseudomallei (B. pseudomallei), a Gram-negative aerobic bacillus, prevalent in Thailand and Australia. Although rare in India, the disease is increasingly being reported from the country. Exposure of non-intact skin to contaminated soil or surface water is the mode of infection. The clinical presentation of the disease is varied and includes chronic suppurrative lesions, sepsis and pneumonia. We describe two patients of melioidosis who presented with pyrexia of unknown origin and localized cutaneous abscess over the chest wall.

THE CASES
Case 1
A 35-year-old man with diabetes presented to us in August 2013 with a history of fatigue, low-grade fever, evening rise of temperature and loss of appetite for 1 month. There was no history of significant weight loss, close contact with a patient with pyrexia of unknown origin. On examination, his pulse rate was 102 per minute and blood pressure was 130/80 mmHg with normal systemic examination. Laboratory investigations revealed: white cell count 6400/cmm, platelet count 92 000/cmm, and ESR of 84 mm at 1 hour. A chest X-ray and ultrasound of the abdomen were normal. Serum creatinine and urinalysis were normal and liver function tests were not deranged. The patient was initially treated with doxycycline for a presumptive diagnosis of scrub fever. As the fever failed to resolve, antitubercular treatment was started empirically. Subsequently, the patient developed a small cutaneous abscess over the anterior chest wall on the left lower side. Blood cultures and pus culture from the abscess revealed B. pseudomallei susceptible to ceftazidime.

Case 2
A 44-year-old man with diabetes presented to us in September 2013 with 2 weeks’ history of fatigue, low-grade fever, evening rise of temperature and loss of appetite with no significant weight loss. On examination, his pulse was 88 per minute and blood pressure was 130/80 mmHg. Systemic examination was unremarkable. Laboratory investigations revealed: white cell count 8000/cmm, ESR 102 mm in first hour and a chest X-ray showed patchy opacities in the right upper zone. CT scan of the thorax revealed consolidation of the right upper posterior segment. Since his fever persisted despite treatment with antibiotics, the patient was given antitubercular treatment. Subsequently, the patient developed a small cutaneous abscess over the sternum. While the blood culture was sterile, pus culture from the abscess grew B. pseudomallei susceptible to ceftazidime.

Both patients recovered and were asymptomatic 30 days after completion of treatment.

DISCUSSION
Melioidosis is reported mainly from Thailand and Australia. Its reported incidence is low in India. Rainfall contributes to an increase in the incidence of melioidosis. Low temperatures induce the formation of more biofilm. The incubation period is influenced by the load of inoculum, mode of transmission and host risk factors but varies widely from 1 to 21 days from the date of injury.

Diabetes, excess alcohol intake, chronic renal disease and chronic lung disease are considered independent risk factors for melioidosis. Melioidosis can present as an acute (88%) or chronic (22%) infection (symptoms present for >2 months) and is notorious for relapsing after treatment. Clinical features include fever (80%), pneumonia and/or pleural effusion (48%), hepatomegaly (56%), joint involvement and/or osteomyelitis (48%), splenomegaly (40%), splenic abscess (24%) and sepsis (28%). Occasionally, melioidosis has presented as a mediastinal mass. The clinical presentation and acute outcome are reported to be similar in HIV-positive and HIV-negative patients.

Both our patients had diabetes. The first patient was initially treated for rickettsial fever owing to thrombocytopenia while the second patient was treated for chest infection. With the clinical picture being similar to tuberculosis, the patients subsequently received antitubercular treatment. Incidentally, while on antitubercular treatment, both patients developed suppurrative skin lesions over the anterior chest wall. The definitive diagnosis could be made only after cultures (pus culture in both patients and blood culture in one) grew B. pseudomallei.

Patients with melioidosis may erroneously get treated with antitubercular treatment. In a report from southern India, 22 patients with culture-proven melioidosis were initially given empirical antitubercular treatment. Melioidosis should therefore be considered in the differential diagnosis of any febrile illness especially when there is a radiological pattern suggestive of tuberculosis but tubercle bacilli cannot be demonstrated. Rare instances of co-existence of both infections have been reported. The gold standard in diagnosing melioidosis is isolation of B. pseudomallei by culture from clinical specimens. Treatment of melioidosis requires a course of initiation therapy followed by eradication therapy.
imipenem or meropenem are an appropriate choice in the acute phase, and the selected antibiotic should be administered for 14 days. Eradication therapy includes high-dose oral trimethoprim–sulphamethoxazole (8 mg of trimethoprim per kg of body weight per day and 40 mg of sulphamethoxazole per kg per day) and doxycycline (4 mg per kg per day; maximum dose 100 mg twice daily) for at least 20 weeks. B. pseudomallei can cause disease in apparently healthy individuals. The possible factors that provoke reactivation of the latent pathogen are environmental variables, stress and immunity status.19

Tuberculosis has been endemic in India while the country has lately achieved the dubious distinction of being the ‘diabetes capital’.20 Diagnosing a rare disease such as melioidosis in this milieu can be challenging. It can mimic tuberculosis during the initial presentation, often revealing itself in a patient with alcohol dependence or in a patient with diabetes who is otherwise healthy.2,21 Antitubercular treatment should preferably be commenced only in patients with documented tubercular infection since empirical but misdirected treatment adds to the financial burden of developing economies. Treatment of presumed tuberculosis with antituberculosis drugs is common. Previous use of antituberculosis drugs is a risk factor for development of multidrug-resistant tuberculosis.21

CONCLUSION

Melioidosis is a rare disease with varied clinical presentation. With its changing epidemiology and increasing occurrence in India, a high degree of clinical suspicion and a systematic approach is necessary for making a diagnosis. Melioidosis is diagnosed by the isolation of B. pseudomallei by culture from clinical specimens. Early initiation of treatment is necessary to prevent complications and morbidity and to achieve a good clinical response.

REFERENCES

6 Mu JJ, Cheng PY, Chen YS, Chen PS, Chen YL. The occurrence of melioidosis is related to different climatic conditions in distinct topographical areas of Taiwan. Epidemiol Infect 2014;142:215–23.
20 World Health Organization. Diabetes Fact Sheet No. 312; 2009.