Melioidosis Presenting as Fever and Jaundice: A Rare Presentation

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Melioidosis caused by the environmental Gram-negative bacillus *Burkholderia pseudomallei* is endemic in northern Australia and Southeast Asia and is being described increasingly from south and west coastal regions of India. Melioidosis is known to have high mortality (14–50%) and the risk factors associated with it are diabetes mellitus and heavy alcohol abuse. Melioidosis primarily presents as pneumonia, genitourinary infection and bacteremia. We present a case of Melioidosis from North India, a 56-year-old diabetic male, presenting with fever and jaundice. His blood culture was positive for the *B. pseudomallei*. The hepatic involvement was in the form of jaundice with serum bilirubin value of more than 12 mg/dL, hepatic enzymes more than ten times high and without hepatic abscess. He improved with intravenous antibiotics with complete normalization of liver function tests. (J CLIN EXP HEPATOL 2014;4:172–174)

Melioidosis, also called Whitmore's disease, is an infectious disease that can infect humans or animals.¹ The disease is caused by the bacterium *Burkholderia pseudomallei*. It is predominately a disease of tropical climates, especially in Southeast Asia and northern Australia where it is widespread. The bacteria causing melioidosis are found in contaminated water and soil. It commonly occurs in rainy season. It is spread to humans and animals through direct contact with the contaminated source.¹ It is being described increasingly from south and west coastal regions of India.^{2–5} Melioidosis is known to have high mortality (14–50%) and the risk factors associated with it are diabetes, heavy alcohol use, chronic pulmonary disease, chronic renal disease, thalassemia, glucocorticoid therapy, and cancer. Melioidosis primarily presents as pneumonia, genitourinary infection and bacteremia. We here present a case of melioidosis from North India presenting with jaundice.

CASE REPORT

A fifty-six-year old gentleman, known diabetic, goldsmith by occupation, belonging to Madhya Pradesh in India, pre-

sented with a history of fever for two week and jaundice and generalized weakness for one week. There was no history of rash, joint pains, cough or sputum, seizure, cola colored urine or decreased urine output. The clinical diagnosis of febrile illness with jaundice was kept with a differential diagnosis of complicated malaria, dengue fever, enteric fever, and leptospirosis.

The investigations done at our hospital revealed hemoglobin (Hb) 11.0 g/dL; white blood count (WBC) 14.1×10^3 ; differential leukocyte count (DLC): polymorphs 70%, lymphocytes 30%; erythrocyte sedimentation rate (ESR) 42 mm at 1 h, serum bilirubin 10.9 mg/dL, aspartate aminotransferase (AST) 109 IU/L, alanine aminotransferase (ALT) 73 IU/L, alkaline phosphatase (ALP) 487 IU/L, total serum proteins 7.0 g/dL, serum albumin 1.9 g/dL, and serum creatinine 3.9 mg/dL (Table 1). Malarial antigen and peripheral smear for malarial parasite were negative; dengue serology and NS1 antigen of dengue were negative; serology for leptospirosis was negative; and Widal test was also negative. Urine examination and urine culture were normal. IgM Anti-HAV, IgM Anti-HEV, HBsAg and Anti-HCV were negative. Ultrasonography of the abdomen showed hepatomegaly. There was no dilation of intrahepatic biliary radicals; free fluid; or any intra-abdominal lymphadenopathy.

Empirical antibiotic therapy and supportive management with intravenous fluids were started. His serum creatinine started improving but the fever persisted. We received the report of his blood culture which was positive for the *B. pseudomallei*. Injection Ceftriaxone 2 g BID was started after the blood culture report. After two days fever started showing a declining trend. Biochemical investigations also showed improvement (Table 1). The patient improved and was discharged after the ten days of intravenous

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Abbreviations: ALP: alkaline phosphatase; ALT: alanine aminotransferase; AST: aspartate aminotransferase; DLC: differential leukocyte count; ESR: erythrocyte sedimentation rate; Hb: hemoglobin; WBC: white blood count

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Table 1 Biochemical Parameters of the Patient.

Date	5-Oct-2012	8-Oct-2012	10-Oct-2012	12-Oct-2012	15-Oct-2012	17-Oct-2012	19-Oct-2012
Hemoglobin, g/dL	11.0	8.3	8.3	7.2	6.9	7.3	7.5
WBC, $\times 10^3$ /cumm	14.1	11.7	10.7	9.3	7.1	7.1	7.4
Platelets, $\times 10^3$ /cumm	167	122	177	237	428	518	620
Serum creatinine, mg/dL	3.9	2.9	2.4	2.0	1.8	1.8	1.8
Serum bilirubin, mg/dL	10.9	13.4	9.2	4.1	2.5	2.2	1.8
Aspartate aminotransferase, IU/L	109	108	100	58	51	54	41
Alanine aminotransferase, IU/L	73	75	83	63	54	51	45
ALP, IU/L	487	589	538	419	352	332	287
Serum proteins, g/dL	7.0	5.9	6.8	7.0	7.4	7.2	7.8
Serum albumin, g/dL	1.9	1.4	1.4	1.7	1.8	1.8	1.8
International normalized ratio	1.1		1.1		1.0	1.0	1.0

antibiotic therapy. At the time of the discharge the patient was afebrile; his serum creatinine had normalized; and serum bilirubin had decreased to 2.0 mg/dL.

DISCUSSION

Our patient, a middle aged man, native of central India, is an unusual case of Melioidosis who presented with jaundice. Although melioidosis is endemic in northern Australia and Southeast Asia, it is increasingly been described from south and west coastal regions of India.²⁻⁴ It affects those with contact with soil or water. Melioidosis mainly occurs in the rainy season.⁶ The bacteria reach the body by inhalation or ingestion of contaminated water or food. Peak incidence occurs in the 4 and 5 decade and studies from different parts of world have shown a distinct male predominance, that is 69%, 75%, and 62% of patients, respectively from Australia,⁶ Malaysia,⁷ and Thailand.⁸

Although healthy people may get melioidosis, the major risk factors include diabetes (present in 23–60% of patients), heavy alcohol use (in 12–39%), chronic pulmonary disease (in 12–27%), chronic renal disease (in 10–27%), thalassemia (in 7%), glucocorticoid therapy (in <5%), and cancer (in <5%).⁹ In an Indian series by Vidyalakshmi et al¹⁰ predisposing factors were present in all the patients, of which the commonest was diabetes mellitus, which was present in 76% of the patients. The other predisposing conditions in this series included renal disease, steroid therapy and malnutrition, alcohol abuse, and chronic lung disease. Our patient was a male patient with known diabetes and alcohol abuse but without the risk factor of occupational exposure to soil or water and developed infection in rainy season.

The time between an exposure to the bacteria that causes the disease and the emergence of symptoms is not clearly defined, but may range from one day to many years; generally symptoms appear two to four weeks after expo-

sure.¹ There are several presentations of melioidosis infection: localized infection (presenting with localized pain or swelling, fever, ulceration, abscess); pulmonary infection (with cough, chest pain, high fever, respiratory distress); bloodstream infection (with fever, headache, abdominal discomfort, joint pain, muscle tenderness, disorientation); and disseminated infection (with fever, weight loss, stomach or chest pain, muscle or joint pain, headache, seizures).¹¹ In the largest series of 540 patients from Australia¹² the principal presentation was pneumonia in 51%, genitourinary infection in 14%, skin infection in 13%, bacteremia without evident focus in 11%, septic arthritis/osteomyelitis in 4% and neurological melioidosis in 3%. Similarly, in a study from India pneumonia was the most common clinical presentation (32.6%), followed by musculoskeletal disease (20%), melioidotic lymphadenopathy (7.4%), and dental abscess (6.3%).⁴ Pneumonia as clinical presentation is most common presentation as shown in the Darwin prospective study from northern Australia (51%).¹² Pulmonary melioidosis often mimics pulmonary tuberculosis,¹³ both clinically and radiologically, and can be differentiated reliably only on isolation of *B. pseudomallei* in culture. Thus melioidosis is also known as the 'remarkable imitator'¹⁴ and the 'mimicker of maladies' as disease may mimic starting from pyogenic bacterial infection to tuberculosis and no one feature is pathognomonic of melioidosis. Our patient had predominantly hepatic presentation with jaundice.

Hepatic involvement in melioidosis is usually in the form of hepatic abscess. In the study by Maude et al¹⁵ out of 230 adult patients with culture-confirmed melioidosis who underwent abdominal ultrasound one or more abscesses were detected in the liver and/or spleen in 33% cases. These were often multiple and clinically silent. Our patient presented with fever and jaundice with serum bilirubin value of 12 mg/dL, hepatic enzymes more than ten times high and without hepatic abscess.

Thus we present a case of melioidosis from north India with presentation as jaundice without hepatic abscesses. We conclude that in an endemic region any patient presenting with atypical features of febrile illness and jaundice a diagnosis of melioidosis should be kept in mind so that early diagnosis and prompt treatment can be done to avoid significant mortality.

CONFLICTS OF INTEREST

All authors have none to declare.

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