Septicemic Melioidosis and Multiple Splenic Abscesses in a Patient Who Lives in Bangkok

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ABSTRACT

We report a case of a diabetic woman who presented with *Burkholderia pseudomallei* septicemia and multiple splenic abscesses. The patient had a fever for a month and subsequently developed left flank pain. Two specimens of blood culture grew *B. pseudomallei*. Abdominal ultrasonography revealed multiple small abscesses of the spleen. She denied history of traveling to the endemic area. The most likely plausible route of infection was contact with the dirt from the garbage. Ceftazidime, 6 grams daily, was prescribed without splenectomy. She had clinically improved and the medication was switched to oral trimethoprim/sulfamethoxazole and doxycycline. Melioidosis should be suspected in any patient who has risk factor(s) and presents with fever and multiple small abscesses of the spleen. ([*J Infect Dis Antimicrob Agents* 2011;28:125-28.])

Note: This case had been presented and discussed in the Interhospital Case Conference on Infectious Diseases (ICCID), 7 October 2010, Phetchaburi, Thailand.

INTRODUCTION

*Burkholderia pseudomallei* infection, melioidosis, is a disease of humans and animals that is geographically endemic in southeastern Asia and northern Australia, approximately to the tropical latitudes between 20°N and 20°S. Case report and series are likely to present only “the tip of the iceberg” as culture facilities are not available in most of the rural tropics where the infection is likely to be prevalent. Most of case reports and data are from Thailand and Australia. Whereas the distribution of the disease is also in Laos, Vietnam, Malaysia, Indonesia, Singapore and a small number of cases from China, Hong Kong and Taiwan. However, the number of cases is some kind of difference even in parts of the same country. Most reported cases in Thailand were from Khon Kaen and Ubon Ratchathani, which the highest case reports of the world come from. In Malasia, most of the cases were from Kedah, Sabah and Kelantan state. *B. pseudomallei* was also isolated from soil in the province of Siem Reap. Melioidosis is an uncommon disease in Bangkok, Thailand. Most of the cases come from other provinces or have a history of traveling to endemic area. Bhumibol Adulyadej Hospital is the tertiary care center in the North of
Bangkok, Thailand. Only a few documented cases of melioidosis have been found. In the past 2 years, we had cases of septicemic melioidosis from Kamphaengphet, Burirum and Ayutthaya provinces. We herein report a case of septicemic melioidosis with multiple splenic abscesses in a diabetic woman who did not travel to endemic area. Another risk factor of infection is possibly from contaminated dirt in the garbage. A 49-year-old woman who buys and sells waste things for a living presented with fever for a month. She also had shaking chills, headache and myalgia. She denied other symptoms such as cough, running nose, sore throat, or abdominal pain. Her urination and defecation were normal. She visited a private clinic where she was diagnosed as urinary tract infection and had taken norfloxacin 400 mg twice daily for five days. One week later, she went to a hospital because of persistent fever. She was diagnosed as upper respiratory tract infection and oral amoxicillin 1,000 mg twice daily were prescribed for a week. The fever persisted and she began to have left flank pain especially when coughing or taking a deep breath.

Ten days before this admission, the patient went to Nakhon-nayok province. She had shaking chills and was admitted to the hospital. Blood tests were collected and she was empirically treated with ceftriaxone 2 grams/day intravenously. The fever persisted and she began to have left flank pain especially when coughing or taking a deep breath.

Complete blood count revealed a hemoglobin level of 9.5 g/dL, white blood cell 9,900 cell/mm³ (78% neutrophils, 15% lymphocyte, 7% monocyte) and platelet count 225,000/mm³. Her blood sugar was 326 mg%. Blood urea nitrogen and creatinine were 5 and 0.4 mg/dL, respectively. Her serum sodium was 128 mmol/L, potassium 4.4 mmol/L, chloride 97 mmol/L, and CO₂ 28 mmol/L. Her liver function tests were within normal range except for elevation of alkaline phosphatase (261 U/L). Her chest X-ray was normal.

The patient had been diagnosed as diabetes mellitus for 18 years. Her current medications were insulin subcutaneously 22 unit/day and metformin 500 mg twice a day. Her fasting blood sugar testings were around 200-300 mg%. She denied any history of traveling outside Bangkok for a year.

At the time the patient presented at our hospital, she had low grade fever, her body temperature was 37.9°C, pulse rate 92/minute, respiratory rate 20/minute, and blood pressure was 136/80 mmHg. She was fully alert. Other abnormal physical findings included mildly pale conjunctivae, systolic ejection murmur grade II/VI at right upper parasternal border which was radiated to right neck. Her abdomen was not distended, normoactive bowel sound, liver was not palpable, spleen was palpated 2 finger breadths below the left costal margin with tenderness. Other physical findings were unremarkable.

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The abdominal ultrasonography was re-evaluated, which revealed normal liver size with heterogeneously bright echo texture without liver mass. The spleen was moderately enlarged and showed multiple small hypoechoic lesions in the upper and lower splenic pole (Figure 1), measuring ranged from 0.4-0.8 cm. Others were unremarkable.

The antimicrobial was then changed to ceftazidime 6 grams/day intravenously. Repeated blood cultures had no growth. The patient was admitted for 14 days,
she was doing well and discharged with single strength trimethoprim/sulfamethoxazole 3 tablets twice daily combined with doxycycline 100 mg twice daily as home medication.

DISCUSSION

Melioidosis is an infection caused by \textit{B. pseudomallei}. The endemic area of the disease are southeast Asia, northern Australia and some parts of Africa and south America.\textsuperscript{1,2,4,6} In Thailand, the disease is commonly found in the northeast. Melioidosis is the most common cause of community-acquired septicemia in northeast of Thailand.\textsuperscript{4} Most of the patients have underlying diseases such as diabetes, chronic renal failure, chronic lung disease, thalassemia, and alcoholism.\textsuperscript{7,9} The mortality rate is rather high especially in immunocompromised patients. The clinical manifestations of melioidosis are variable. The most common site of infection is lung which is usually the primary site of infection. Bacteremia is found in 50 percent of cases. The second most common organs involved are liver and spleen, while data from Australia shows that the second common site is genitourinary tract.\textsuperscript{9-10}

Visceral abscess is one of the most common presentation in melioidosis.\textsuperscript{11} Wibulpolprasert et al. reported that abdominal ultrasonographic findings in patients with melioidosis mostly had organ involvement.\textsuperscript{11} Spleen was the most common organ involved, both isolated or combined with liver abscess. The common findings were multiple small abscesses (less than 3 cm), and were somewhat different from other causative organisms such as \textit{Klebsiella} spp., \textit{Citrobactor} spp. and \textit{E. coli}, which are often larger.\textsuperscript{8}

Our patient had a risk factor for melioidosis as she had rather poor-controlled diabetes. Despite her absence of traveling history to the endemic area recently, and \textit{B. pseudomallei} infection can be latent for as long as 62 years\textsuperscript{12}, she possibly acquired \textit{B. pseudomallei} infection from contaminated dirt in the garbage as an occupational exposure other than the more common agricultural route. Vuddhakul V, et al. performed the countrywide surveillance and reported that \textit{B. pseudomallei} could be isolated in soil from every part of Thailand which was prominent in the northeast (50.1\%).\textsuperscript{13} One who has risk
factor(s) possibly got infection from anywhere. We suggest that melioidosis should be aware in any patient who has risk factor and presents with clinical features characteristic to the disease.

References