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Meliodosis in Cirrhosis of Liver- A Case Series

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Case Report

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Introduction

Melioidosis is caused by Burkholderia pseudomallei, a gram negative saprophyte, endemic in Southeast Asia and Australia. The risk factors are diabetes and alcohol. We report three "difficult to treat" cases of melioidosis in cirrhotic patients.

Case Report

The mean age of our patients was 39.33 years (34-45 years) and all were males. The etiology of cirrhosis was alcohol in two cases and hepatitis B virus related cirrhosis in one patient. One of the patients was diabetic. All patients had culture positive meliodosis.

The first patient presented with high grade fever, vomiting and right upper quadrant abdominal pain for 2 weeks. He had undergone drainage of splenic abscess elsewhere. Computed tomography revealed hypodense, cavitatory lesions with honeycomb pattern in liver and spleen suggestive of multiple abscesses (Figure 1). The liver abscess was drained. After an initial response to intravenous meropenem, he developed pain and swelling over the left knee joint. Synovial fluid aspiration showed 3500 cells with predominant neutrophils. Moreover, he developed simple focal seizures involving the right upper limb. CT brain showed multiple brain abscesses probably due to septic embolization. Despite aggressive supportive care and adequate antibiotic therapy treatment, he succumbed to disseminated meliodosis involving liver, spleen, brain, joints and lungs.

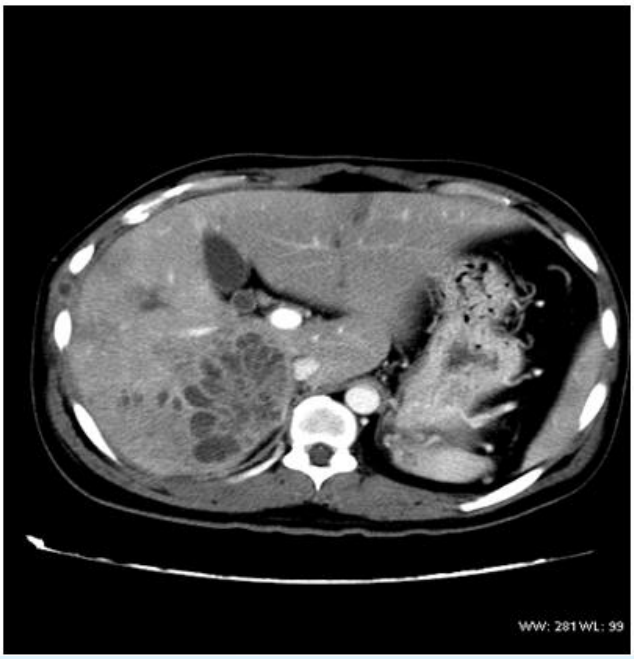

Figure 1: A representative computed tomography of Case 1.

The second patient presented with fever, respiratory distress and hypotension. On evaluation, he was found to have lobar pneumonia. For persistent respiratory distress, he required mechanical ventilation, inotropic support and antibiotics (meropenem and targocid). During the course of recovery, he developed septic arthritis involving the left ankle joint. His general condition gradually improved with three weeks of

intravenous antibiotics. He was discharged on oral ciprofloxacin and doxycycline for a period of eight weeks. He has been doing well on follow up.

The third patient presented with high grade fever and ultrasound scan of the abdomen showed a 3x 3 cm splenic abscess. After initial response to ceftazidime, he developed pain and swelling over the right ankle. He was started on meropenem which was continued for four weeks. He was discharged on oral cotrimoxazole and is asymptomatic on follow up.

The clinical features, laboratory parameters and radiological findings are summarised in (Table 1).

	Case 1	Case 2	Case 3
Etiology of cirrhosis	Alcohol,	alcohol	Hepatitis B
Comorbidities present	Diabetes mellitus	-	-
Symptoms at presentation	Fever Vomiting Right upper quadrant pain	Fever Respiratory distress	fever
Other site of infection during course of treatment	Septic arthritis Brain abscess	Septic arthritis	Septic arthritis, Prostatic abscess
Hemoglobin (gm/dl)	7.9	11.2	10.7
WBC (per cu.mm)	19090	14300	21000
Differential count	Leucocytosis with neutrophilia	Leucocytosis with neutrophilia	Leucocytosis with neutrophilia
Liver function tests			
Serum bilirbin(mg/dl)	1.82	8	3.4
Direct bilirubin (mg/dl)	1.3	4	2.6
Serum albumin(gm/dl)	2.9	2.3	2.6
Serum globulin(gm/dl)	3.9	3.6	3.8
AST (U/L)	58	60	73
ALT(U/L)	50	69	53
INR	1.6	1.31	1.4
Initial antibiotics (dose)	Meropenem 1 gm 8th hourly	Meropenem 1 gram 8th hourly Targocid 400 mg on first day, followed by 200 mg/day	Ceftazidime 2 gm 6 th hourly
Maintenance antibiotics	-	Ciprofloxacin, doxycycline	cotrimoxazole
Outcome	expired	improved	improved

Table1: Clinical, laboratory and radiological parameters and outcome of treatment.

Discussion

Melioidosis is caused by gram-negative bipolar, safety pin-shaped bacillus, *B. pseudomallei*. It is seen in tropical climates, especially in Southeast Asia (Malaysia, Thailand and Singapore), China, Taiwan and northern Australia [1,2]. In the Indian subcontinent, the disease is endemic and has been reported from several regions within the country [3-5]. It is transmitted by inhalation of contaminated dust or water droplets, percutaneous inoculation or ingestion of contaminated water. It is common during rainy season and epidemics occur during monsoons, cyclones, hurricanes and typhoons [6].

Host factors predisposing to melioidosis are diabetes mellitus, chronic renal failure, alcohol abuse, thalassemia, chronic lung or liver disease, malignancy and immunosuppression. About two-thirds (60.9%) of infected individuals are diabetic [7]. Latent infection is common; reactivation occurs in about 4% [8].

Though most Burkholderia pseudomallei infections are subclinical, the disease not uncommonly presents as an acute febrile illness ranging from septicaemic shock to localized abscess of virtually affecting any organ of the body. Localized skin infection and pneumonia are common. Focal encephalitis, encephalomyelitis, abscess and primary meningitis in brain have also been reported [3]. Treatment involves an initial intensive phase with parenteral antibiotics like ceftazidime (2 Gm, 6 hourly) and meropenem (1 Gm, 8 hourly) during the acute phase, followed by an eradication or maintenance phase with co-trimoxazole. The duration of treatment depends on local versus severe systemic infection. In local or mild disease, intensive phase of 2–4 weeks is followed by 3 months of maintenance therapy. In severe infection, including neurological disease, initial intensive therapy is extended for 6–8 weeks, followed by an eradication phase with oral cotrimoxazole or doxycycline for the next 6 months [9,10].

In our patients with underlying cirrhosis, we noted fever to be the predominant presenting symptom. Two had abscesses in liver and spleen while one presented with pneumonia. All patients developed septic arthritis during the course of illness. Despite adequate antibiotic treatment, one patient expired while the other two required prolonged hospitalisation and had slow recovery.

Conclusion

Melioidosis is a tropical infection that presents with fever, abscesses and septic arthritis in cirrhotic patients. Despite early diagnosis and adequate antibiotic treatment, patients may have significant morbidity and mortality.

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