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CASE REPORT

A Rare Case of Acute Disseminated Melioidosis Following Lower Segment Caesarean Section

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Introduction

Melioidosis is caused by Burkholderia pseudomallei, a gram negative bacterium which is an oxidase positive, motile bacillus present in soil and water of tropical and subtropical areas. It can survive in extreme conditions for years and can infect both humans as well as animals. It is rarely transmitted from human to humans [1], however few cases of nosocomial infections have been reported. It is an emerging problem in India. The persons who are immune compromised or having diabetes mellitus, chronic liver disease, chronic alcoholism, chronic lung disease or occupational exposure are prone to develop it, though melioidosis can develop in persons without risk factors also. The spectrum of disease, severity and outcome varies depending upon the presence and absence of risk factors. The incubation period varies from 1 to 21 days with an average of 9 days. The acute infection can present as fatal septicaemia with septic shock, pneumonia, and acute respiratory distress syndrome, thrombosis of vessels, abscesses in the spleen, liver, lungs, kidneys, prostate, subcutaneous abscess, osteomyelitis and septic arthritis. The chronic infection may present with nonspecific symptoms to pyrexia of unknown origin, which makes the diagnosis difficult. Transmission of infection can occur via inhalation, aspiration and occasionally by percutaneous inoculation or ingestion. Cases of pneumonia following presumptive inoculating skin injuries are well documented, suggesting that the organism can reach the lungs via the haematogenous route [2]. Laboratory-acquired infections and iatrogenic infections from contaminated hospital or surgical equipment occasionally occur.

Melioidosis during postpartum period is very rare and to best of our knowledge only one case of melioidosis following lower segment caesarean section (LSCS) was found while reviewing the available literature [3]. Here we report a case of a young lady who developed acute disseminated melioidosis after LSCS surgery.

Case Report

A 27-years-old housewife presented at AIIMS Bhopal with high grade fever and swelling over both ankles with bluish black discoloration since 10 days. She had delivered a healthy female baby 28 days back by LSCS in a small town hospital and got discharged after 5 days of surgery. Two days after discharge she developed fever which was high grade, intermittent and without chills and rigour. For these complaints, she was hospitalised again and received intravenous ceftriaxone and metronidazole for 2 weeks for suspected puerperal sepsis. She got discharged after 2 weeks but continued to have intermittent fever & painful swelling over both the ankles which turned bluish black in colour later on along with the onset of purulent non-fowl smelling discharge. There was no history of cough, haemoptysis, chest pain, abnormal vaginal discharge and excess bleeding.

After admission in AIIMS Bhopal, she was found to be febrile, conscious, oriented, pulse 135/minute, BP 142/80 mmHg and Spo2 92% at 5–6 L/min oxygen support. She was pale, but icterus, cyanosis, clubbing and lymphadenopathy were absent. On examination there was cystic swellings over both ankles (R > L) with blackish discoloration and pus discharge. The fluctuant swellings of various sizes were found below both knees. (Fig. 1a, b). Bilateral coarse

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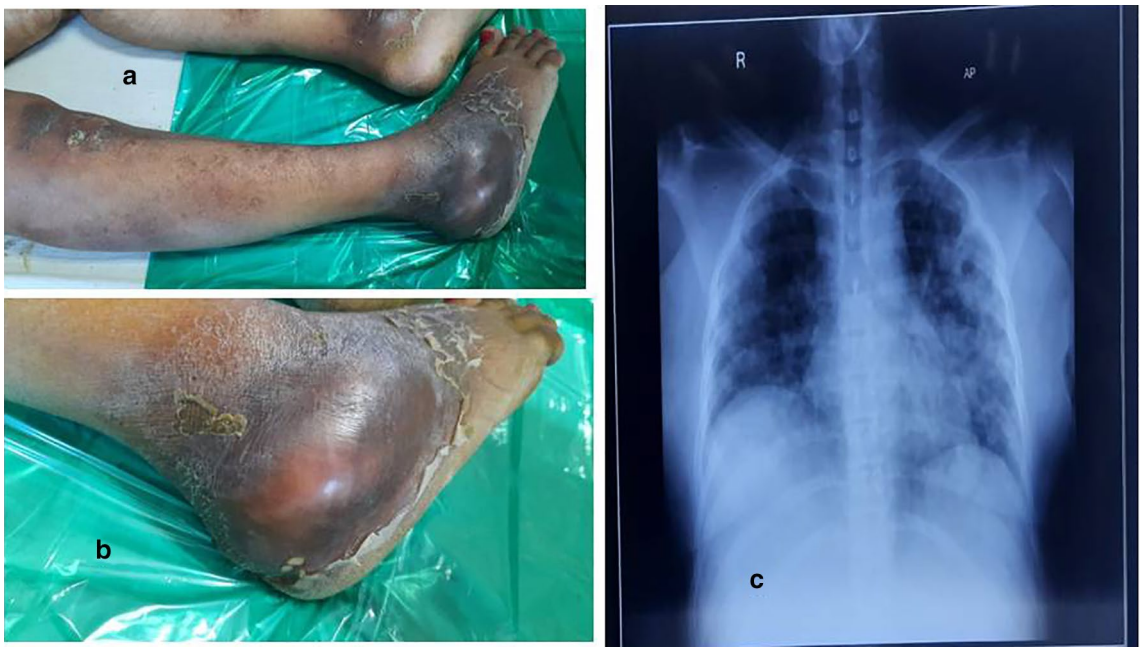

Fig. 1 Before treatment. **a** Blackish discoloration, swelling and pus discharge below both knees. **b** Close view of right ankle joint. **c** X-Ray Chest exhibiting bilateral nodular fluffy opacities

crepitations were present on chest auscultation. LSCS scar was found to be Healthy.

Investigations revealed Hb 6.1 gm/dl, TLC 15,220/mm^3 with neutrophil 90% microcytic hypochromic peripheral smear, Platelet 194,000/mm+, ESR 75 mm/Hr, serum total bilirubin 2.33 mg/dl, unconjugated bilirubin 1.24 mg/dl, ALT 271 IU/L, AST 151, ALP 1079 IU/L, total protein 5.35 gm/dl, albumin 2.38 gm/dl, creatinine 1 mg/dl, urea 32 mg/dl, RBS 102 mg/dl, HIV nonreactive, HBs Ag negative, HCV negative, D-dimer 6400 ng/ml and serum ferritin was 925 ng/mL. Urine examination was normal. Chest X-ray was suggestive of bilateral nodular fluffy opacities (Fig. 1c). Her blood culture grew Burkholderia pseudomallei sensitive to minocycline, ceftazidime, meropenem & cotrimoxazole.

She was started on injection meropenem and tablet cotrimoxazole. Abscesses were drained, and pus culture was sent which was suggestive of growth of Burkholderia pseudomallei. CECT abdomen and thorax showed multiple splenic infarcts, splenic vein thrombosis, bulky pancreas, mild ascites & hepatomegaly. Multiple variable size and shape nodules were noted scattered in bilateral lung field, predominantly in sub pleural peripheral and septal region. She was off oxygen on day 5 of admission and afebrile on day 16 of the antibiotics. Her repeat Chest X-ray was suggestive of decrease in bilateral opacities (Fig. 2a). Her lower limb swelling and pus discharge also subsided (Fig. 2b). After 28 days of antibiotics, her repeat blood culture was sterile, and she was discharged in stable condition with oral cotrimoxazole for 3 months.

Discussion

Melioidosis can involve any system in the body. Pneumonia, liver, kidney, splenic & soft tissue abscesses, and acute pyelonephritis are commonly seen while prostatic abscess, septic arthritis, myositis, osteomyelitis & brain abscess are less commonly found. Early diagnosis and initiation of antibiotics are crucial for melioidosis treatment in view of high mortality rate. The treatment requires intensive I/V therapy followed by eradication therapy along with surgical drainage of abscess if present. The recrudescence and recurrence of melioidosis are quite high.

There is scare literature about presence of melioidosis during pregnancy or postpartum period. The only reported case from Sri Lanka presented with fever & breathlessness on day 6 following an elective caesarean section. Shortly after admission, she developed type one respiratory failure needing invasive mechanical ventilation, while in our case also patient presented with fever a week after discharge following LSCS, she remained

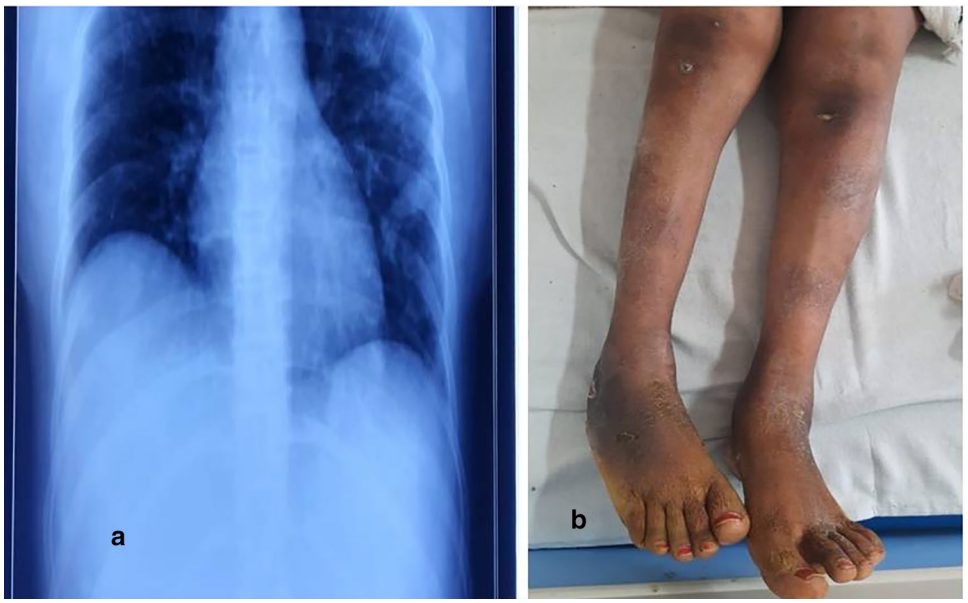

Fig. 2 After treatment. **a** Chest X-ray showing significant decrease in bilateral opacities. **b** Lower limb discoloration, swelling and pus discharge subsided

undiagnosed for two weeks in some other hospital and came in critical condition with septicaemia and multiple skin lesions and systemic spread including lung. She was not diabetic or immuno compromised and was not having any occupational exposure also. Melioidosis is uncommon without risk factors but in our case this was not so. Presence of Melioidosis in a normal healthy female following LSCS is extremely rare. Although Melioidosis is prevalent in many parts of India but still it is an under diagnosed and under reported disease, mainly owing to a lack of diagnostic microbiological laboratories serving the low income rural populations who are at greatest risk of infection and a lack of awareness of the disease amongst physicians and laboratory staff.

Intravenous ceftazidime or meropenem is the preferred choice of treatment. The duration of initial intensive intravenous therapy should last a minimum of 10–14 days, with longer intensive therapy for critically ill patients, including those with extensive pulmonary disease, deep-seated collections or organ abscesses, osteomyelitis, septic arthritis or neurological melioidosis [4]. In our case too, we continued injectable antibiotics for 28 days till the blood culture became negative. We also started trimethoprim–sulfamethoxazole along with meropenem from the first day of treatment. After the initial intensive therapy, subsequent eradication therapy with oral antibiotics is recommended to prevent recrudescence of the disease or relapse of the patient. Trimethoprim–sulfamethoxazole is the preferred agent for eradication therapy, and co-amoxiclav or doxycycline is the second choice. The eradication therapy should last for ≥ 3 months after the end of the initial intensive therapy that we too have followed the same treatment protocol in our case.

Conclusion

Melioidosis during pregnancy & post partum period is extremely rare. With limited microbiological resources to isolate the organism, coupled with lack of awareness contribute to delay in diagnosis with increased mortality. High index of suspicion, early diagnosis on the basis of clinical features, laboratory and radiological findings and proper treatment can prevent morbidity and mortality.

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Declarations

Conflict of interest The authors declare that there is no conflict of interest.

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