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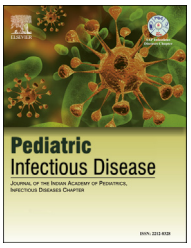

Case Report

A new threat to children: Melioidosis

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ARTICLE INFO

Article history:
Received 5 December 2013
Accepted 6 January 2015
Available online 27 January 2015

Keywords:
Burkholderia pseudomallei
Neonatal melioidosis
Paediatric melioidosis
Sepsis

ABSTRACT

Melioidosis is an infectious disease caused by *Burkholderia pseudomallei*, usually seen in tropical countries of South East Asia and Northern Australia. Though many cases are reported in adults from western coast of India, the same is not true for children. We report here four cases of Melioidosis; a preterm neonate, two 2 year olds and 9 year old child. While three cases had bacteremic melioidosis with presentation as Respiratory distress syndrome, pneumonia and fever respectively, fourth case presented as bilateral lymphadenitis. All were treated successfully with intensive therapy of Meropenem or ceftazidime followed with eradication therapy of co-trimoxazole. At the end of treatment, all were completely cured. An understanding of the local epidemiology & geographical factors along with awareness and high suspicion of index among microbiologists and paediatricians with laboratory strengthening will aid in early diagnosis and prompt treatment thereby reducing the disease mortality.

1. Introduction

Burkholderia pseudomallei is an environmental saprophyte found in soil and water. It is known for causing melioidosis, a disease of public health importance in both south east Asia and northern Australia, where it is endemic and associated with high mortality rates.[1] Considered to be an exotic infection once in our country, there has been an increase surge of reports from India especially in adults, but it still remains an underreported entity in children. We report here a series of paediatric melioidosis cases.

2. Case 1

A preterm 32 weeks, small for gestational age female baby was born to G_2P_1 mother by emergency caesarian section. Mother had history of severe pregnancy induced hypertension and oligohydraminos and no other infections. Baby cried immediately after birth and her Apgar scores were 6 & 8 at 1 and 5 min respectively. Baby developed respiratory distress on day 2 (mild RDS by X-ray) and treated with Inj. Cefipime 50 mg/kg body weight IV 12 hourly. She was also given surfactant and fresh frozen plasma due to mild thrombocytopenia. On day 9, baby had feed intolerance with abdominal distension and

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http://dx.doi.org/10.1016/j.pid.2015.01.001

poor activity. Blood counts showed thrombocytopenia and CRP was raised (124.6 mg/L). She was kept nil per orally and antibiotic was empirically changed to Inj Meropenem 15 mg/kg body weight IV 8 hourly. *B. pseudomallei* was isolated from blood culture. Treatment with Meropenem was continued for 14 days as she was responding well. Repeat blood culture after 7 days of treatment yielded no growth. Baby showed clinical improvement and she was discharged on day 33 with her vitals stable. She was advised to take Co-trimoxazole 8/40 mg/kg BD for 1 week and asked to come for follow up.

To rule out source of infection, NICU, Environmental samples, mother's blood, breast milk & vaginal swab were cultured which were negative for the bacteria.

3. Case 2

A 2 year old male child hailing from mangalore presented with history of intermittent fever, cough & breathlessness since 1 week during the August month of monsoon. His developmental and immunisation history were satisfactory. Laboratory findings revealed hypochromic microcytic anaemia (Hb 5.9 gm%) and raised CRP (214.1 mg/L). Neutrophil count (70%) and ESR (20 mm/h) were raised. Chest X-ray showed bilateral lower lobe pneumonia. He was started on IV antibiotics (Vancomycin, ceftriaxone and amikacin). On day 3, as the condition deteriorated and child had persistent respiratory distress he was put in oxygen supplementation with salbutamol and ipratropium bromide nebulisation. On suspicion the Throat swab was sent for H1N1 influenza which came negative. On day 5, Blood culture grew *B. pseudomallei* after 14 h incubation. Patient was started on inj Ceftazidime (50 mg/kg) TID for 14 days. On day 8, the child improved symptomatically. Repeat chest X-ray showed improvement.

4. Case 3

A 9 year old male child hailing from mangalore presented with high grade fever with chills & rigors since 4 days during the July month of monsoon. His developmental history was appropriate for age and immunization was up to date. On examination she had mild icterus and splenomegaly. On suspicion of Malaria, patient was started on Tab Chloroquine. Father had malaria and was being treated for Plasmodium vivax, so blood investigations were done for same but blood for malarial parasite was negative. Liver function test showed conjugated hyperbilirubinemia (Serum total bilirubin 1.9 mg/dl; serum conjugated 0.5 mg/dl). RBCs were noromocytic normochromic with numerous microspherocytes giving impression of Herediatry spherocytosis which must have resulted in splenomegaly. G6PD done was normal (Father G6PD deficiency was positive). On day 4, Blood culture grew *B. pseudomallei* after 18 h incubation. Child was started on inj Ceftazidime (50 mg/kg) IV TID for 14 days.

5. Case 4

A 2 year old child hailing from Karwar, a coastal town in northern Karnataka presented with history of fever and bilateral neck swelling since 5 days during the June month of Monsoon. Fever was high grade, intermittent with evening rise of temperature. Patient also gave past history of fever with cough 1 month back. Total WBC counts (24,800/cubic mm), ESR (38 mm/h) and CRP (132.8 mg/L) were raised. On day 2, with suspicion of tuberculosis FNAC was carried from both the swellings (upper deep cervical lymph nodes) and sent for AFB and cytology. Incision and drainage was done and collected pus along with blood was sent for culture and sensitivity. The AFB report was negative. On day 3, the blood agar plate grew wrinkled colonies with metallic sheen arising suspicion of *B. pseudomallei*. The initial treatment from IV ceftriaxone was changed to IV ceftazidime (50 mg/kg TID). The FNAC from the lymph nodes showed granulomatous reaction mimicking tuberculous lymphadenitis. On day 4, the culture report was confirmed. By day 6, symptoms subsided drastically and blood culture was negative, IV antibiotics were continued for 14 days as other foci for infection could not be completely ruled out.

In second, third & fourth case, the children hailed from village and presented during monsoon season. Blood cultures done for second and third case after completion of initiation therapy were negative for the organism. However in all 3 cases, the children were treated with co-trimoxazole (8/40 mg/kg BD) after discharge for minimum 12 weeks. Their follow up was uneventful.

6. Microbiological workup

In all 4 cases, after the blood culture showed positive growth it was inoculated in Blood and MacConkey's agar. After 24 h of incubation greyish white wrinkled colonies with metallic sheen were grown on blood agar (Fig. 1). On MacConkey agar, initially non-lactose fermenting colonies were grown which turned pink on prolonged incubation with typical metallic sheen. Gram stain of the colonies showed gram negative bipolar staining bacilli with characteristic "Safety pin appearance". The organism was oxidase positive, utilized glucose, lactose and starch, dihydrolysed arginine, liquefied gelatin, reduced nitrate to nitrite with gas production and grew well at

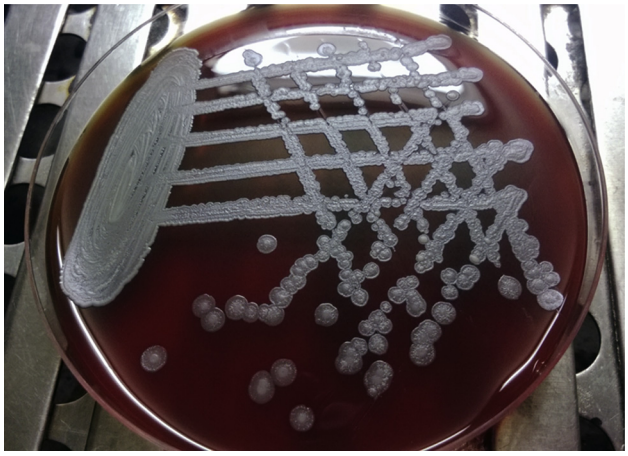

Fig. 1 – *Burkholderia pseudomallei* colonies on blood agar plate. Wrinkled colonies with metallic sheen after 24 h incubation at 37 °C.