

# Contact Investigation of a Neonatal Melioidosis Case in the Heart of Sabah, Malaysia

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## 1. Introduction:

- Paediatric melioidosis is not unheard of in the Malaysian state of Sabah (Fong et al. 2015. *Clin Infect Dis* **60**: 1802).
- This neonatal melioidosis however is the youngest case recorded since Sabah State health Department begin to implement administrative-notification of the disease in 2011.
- Contact investigation, which was not done for melioidosis cases prior to 2011, was conducted in order to determine the mode of transmission.

## 2. Case Descriptions & Findings:

Fig. 1: Case travel history to seek medical care.

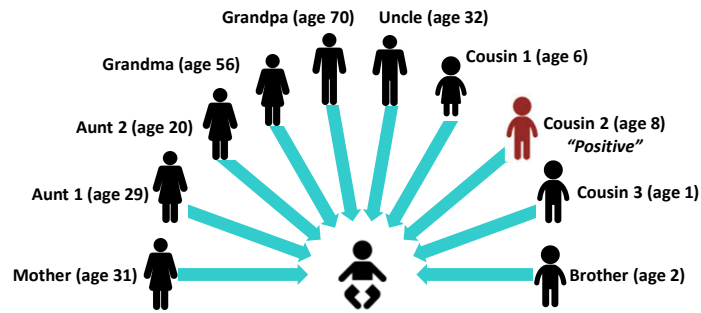


Fig. 2: Contacts Serology Investigation. IgM titre for melioidosis were determined using indirect fluorescent method. Titres <1:80 are negative for melioidosis and vice versa (Institute for Medical Research). Cousin 2 had positive titres as shown.

Table 2: Case Laboratory Findings – Culture and Sensitivity Test.

HOSPITAL	DATE	SAMPLES	RESULTS
Kinabatangan	31.01.15	Blood	No growth, 48 hours
	01.02.15	Urine	No growth
Duchess of Kent	@ Admission - 03.02.15	Peripheral blood	<i>B. pseudomallei</i>
	04.02.15	Tracheal aspiration	No pathogen isolated
	Post-mortem - 05.02.15	Cerebrospinal Fluid	<i>B. pseudomallei</i>

Fig. 3: Chest X-ray – worsening pneumonia.



14 Jan '15 (0 day old)	26 Jan '15 (12 day old)	30 Jan '15 (16 day old)	31 Jan '15 (17 day old)	03 Feb '15 (20 day old)	05 Feb '15 (22 day old)
<b>Case was born: Penangah Health Clinic @ 2.10 AM</b>	<b>Last postnatal home visit</b>	<b>Attended: Penangah Health Clinic Outpatient</b>	<b>Admitted: Kinabatangan Hospital @ 4.30 PM</b>	<b>Admitted: Duchess of Kent Hospital @ 11.45 PM</b>	<b>SUCCUMBED</b>
<ul style="list-style-type: none"> <li>Uneventful Spontaneous Vaginal Delivery</li> <li>Baby boy</li> <li>Birth weight 3.1 kg</li> <li>Length 48 cm</li> <li>Head circumference 32 cm</li> <li>No fetal abnormality</li> <li>BCG and 1<sup>st</sup> dose HepB vaccine at birth</li> <li>Discharged home well 6 hours post delivery</li> </ul>	<ul style="list-style-type: none"> <li>Mild jaundice up to face</li> <li>Exclusively breast feeding</li> <li>No other conditions detected</li> </ul>	<ul style="list-style-type: none"> <li>Cough, runny nose and fever for 3 days prior</li> <li>Slight tachypneic</li> <li>Crepitation heard over lungs</li> <li>Nebulizer salbutamol x1 dose</li> <li>Discharge with syrup paracetamol</li> <li>Mother advised to bring child to hospital if general conditions not improving</li> </ul>	<ul style="list-style-type: none"> <li>Lethargy</li> <li>Tachypneic, no recessions</li> <li>Bilateral crepitation heard over lungs</li> <li>CXR: bilateral pneumonic changes</li> <li><b>Treated as bronchopneumonia</b></li> <li>IV C-Penicillin 50,000 mg/kg QID</li> <li>Gentamicin 5 mg/kg OD</li> <li>Oxygen saturation above 95%</li> <li>Spiking fever at Day 3 of admission despite antibiotics</li> <li>Increasing oxygen requirements</li> <li>Transferred to Duchess of Kent Hospital, Sandakan</li> </ul>	<ul style="list-style-type: none"> <li>Afebrile on admission</li> <li>Tachypneic with recession</li> <li>Bilateral crepitation heard over lungs</li> <li>Conditions rapidly deteriorated</li> <li><b>6 hours post admission:</b> <ul style="list-style-type: none"> <li>Increasing tachypneic &amp; tachycardic with deep recessions</li> <li>IV Cefepime &amp; Cloxacilin</li> </ul> </li> <li><b>12 hours post admission:</b> <ul style="list-style-type: none"> <li>Unable to maintain oxygen saturation</li> <li>IV hydrocortisone &amp; immunoglobulin started for severe sepsis</li> </ul> </li> <li><b>26 hours post admission:</b> <ul style="list-style-type: none"> <li>Asystole @ 1.55 AM (05.02.15)</li> </ul> </li> </ul>	

Table 1: Disease Course.

## References:

1. Minutes of Sabah State Infectious Diseases Mortality Meeting No. 10/2015.

## Acknowledgements:

◆ Pinangah Health Clinic ◆ Tongod Health Clinic ◆ Kinabatangan Hospital ◆ Kinabatangan District Health Office ◆ Duchess of Kent Hospital ◆ Communicable Disease Control Unit ◆ Kota Kinabalu Public Health Laboratory ◆ Institute for Medical Research

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## Contact investigation of a neonatal melioidosis case in the heart of Sabah, Malaysia

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**Background:** Paediatric melioidosis is not unheard of in the Malaysian state of Sabah. This neonatal melioidosis however is the youngest case recorded since Sabah State health Department took the initiative to implement administrative-notification of the disease in 2011. Contact investigation, which was not done for melioidosis cases prior to 2011, was conducted in order to determine the mode of transmission.

**Methods:** Tracing epidemiological investigations were performed on 8 contacts. Blood samples were collected and tested for *Burkholderia pseudomallei* seropositivity. Environmental investigations were also performed around and nearby the case house. Two soil samples were collected for culture and isolation of *B. pseudomallei*.

**Results:** The case was a 22 day old male baby, born at full term at the nearest government health clinic in the central District of Tongod. Birth weight was 3.1 Kg and fetal abnormality was not detected. Baby was exclusively breastfeeding. At 14 days old, patient had fever, cough and fast breathing and treated as outpatient at the nearest government health clinic. He was given nebulizer and syrup paracetamol. The symptoms became worst and patient was brought to the nearest district hospital, where he was diagnosed with bronchopneumonia. Treatments given included intravenous drip at 13.3 cc/hour, nebulizer V:N 0.5:3.5 at 4 hourly, intravenous C. Penicillin 50,000mg/kg QID, intravenous Gentamicin 5mg/kg OD and chest physiotherapy. The conditions of the patient however did not improve. Subsequently, patient was referred to the nearest tertiary hospital and managed at the Intensive Care Unit on ventilator. Two days later, the patient succumbed to his ailment. Laboratory investigation showed that blood and cerebrospinal fluid were culture-positive for *B. pseudomallei*. The cause of death was due to *B. pseudomallei* infection. Contacts investigation revealed that an 8 year old cousin was seropositive for *B. pseudomallei* but asymptomatic for the disease. Soil samples however were culture-negative for *B. pseudomallei*.

**Conclusions:** Direct transmission of *B. pseudomallei* to the case from the cousin is compelling but not conclusive. It is also likely that the case was exposed to contaminated dust and soil that were brought into the house by visitors that include the seropositive cousin. Prevention and control measures taken include health education on melioidosis for residents nearby the case house.

Keywords: melioidosis, neonatal, Sabah State, Malaysia