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CORRESPONDENCE

Perinatal transmission of acute dengue: First case reported in Turks and Caicos Islands

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ABSTRACT

We report a newborn baby boy readmitted to the hospital at 7 days of life with acute dengue due to vertical transmission. A 32-year-old primigravida at 38+ weeks of gestation, with no antenatal care and with severe pre-eclampsia, delivered a normal term baby boy by spontaneous vaginal delivery and recovered uneventfully during her postpartum period. The normal term baby boy was admitted to the Neonatal Intensive Care Unit (NICU) for five days due to low birth weight for gestational age, and was asymptomatic except for the transient initial mild thrombocytopenia, from which he recovered uneventfully during the following 48 h. He developed a high-grade fever on day 7 of post-natal life (48 h after being discharged). The baby was treated with appropriate fluid management of antibiotics and paracetamol administered intravenously. Blood cultures were negative and other laboratory findings were unremarkable. He did not have a fever during his admission and was discharged uneventfully after seven days. Clinical diagnosis of acute dengue virus infection was confirmed by laboratory tests of IgG and IgM antibodies in both the baby (on the readmission day) and mother (from the first blood sample on the day of delivery, seven days prior to readmission). The mother acknowledged having fever and bone pain four days prior to delivery; however, the information was not relayed when she was admitted during labor due to language barriers.

Keywords*: Neonatal dengue; vertical transmission; perinatal dengue; maternal dengue*

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Introduction

A 32-year-old primigravida at about 38 weeks gestation according to the patient, with no previous antenatal care and with a history of lower abdominal pain for 12 h, was admitted to the Turks and Caicos Islands Hospital. Language barriers presented communication difficulties in spite of the availability of translation services. During examination, the mother was in obvious distress; mucus membranes were pink and moist, and bilateral pedal edema was noted. Her fundal height was 34 weeks. At admission, she was afebrile (axillary temperature of 36.2°C), pulse was 84/min, respiratory rate was 20/min, and BP was 185/101 mmHg. Urine tested positive for protein (specimen taken via catheter). She was diagnosed with severe pre-eclampsia and treated on admission. The cervix was fully dilated with bulging membranes, which ruptured spontaneously 20 min after admission. Cardiotocography (CTG) showed a reactive fetal heart rate with a baseline of 138 bpm. The complete blood count (CBC) revealed hemoglobin (7.8 g/dL), hematocrit (25.8%), platelet count (263 × 10^9/L), WBC (13.44 × 10^9/L) and absolute neutrophils (9.59 × 10^9/L; 71.4%). Coagulation, liver and renal function profiles revealed normal results.

A live term male infant was delivered with the aid of an episiotomy. His birth weight was 2060 g with Apgar scores of 9 and 10 at 1 and 5 min, respectively. Vitamin K (1 mg) was given intramuscularly via injection as per routine protocol. No abnormalities were detected during neonatal examination. The postpartum period was uneventful. The mother was discharged on the second day and was prescribed antihypertensives. No fever, pain or abnormal

bleeding was noted during the two-day inpatient stay.

The baby was admitted to the Neonatal Intensive Care Unit (NICU) due to low birth weight for gestational age. Enteral feeds were restricted for 24 h. Appropriate IV fluids were administered. His initial CBC showed hemoglobin (18.1 g/dL), hematocrit (53.7%), WBC (10.19×10^9/L) and platelet count (125×10^9/L, which increased to 138×10^9/L after 48 h). Bilirubin was maintained below phototherapy level with a maximum of 254 mmol/L. Maternal Group B Streptococcal (GBS) status was unknown but the baby was asymptomatic at term; therefore, antibiotics were not prescribed. Blood cultures were negative after 48 h. No fever or distress was noted during admission. Enteral feeds were started and increased as tolerated until the baby was fully fed by mouth. The baby was discharged at five-days old, bottle-fed and breastfed ad lib on demand, with a weight of 2000 g and normal physical exam results.

After 48 h of being discharged, at 7 days of life, the baby was brought to the Emergency Department with pyrexia (axillary temperature of 39.7°C). Examination results were normal except for persistent grunting respiration without oxygen requirements. Normal CBC with platelet count increased to 145×10^9/L. Blood and urine cultures were negative. Other laboratory findings were unremarkable. Ascites and pleural effusion were excluded by abdominal ultrasound and chest X-ray. There were no rashes, bleeding or petechiae. The diagnosis for dengue was confirmed with IgM and IgG antibodies specific to dengue virus. Maternal serology for dengue was requested from the maternal blood sample sent seven days previously during admission for labor. The IgM and IgG were dengue-positive. The mother acknowledged having fever and bone pain four days prior to delivery, information which was not provided during admission one week earlier.

During hospitalization, the baby was treated with appropriate fluid management of antibiotics and paracetamol via IV. There was no recurrent pyrexia during his stay and he was discharged uneventfully after seven days. He was followed-up at our outpatient department with normal growth and development at three months of age.

Discussion

Tropical islands in the Caribbean

An infrequent number of cases of vertical transmission of acute dengue in neonates were reported in literature[1,2]. Some reviews included confirmed transmissions but in asymptomatic newborns[3]. The rate of vertical transmission varies from 1.6% to 10.5% as reported in some publications, with a seroconversion of the fetus on average at day 6 of *in utero* infection[4–7]. Low birth weight, preterm delivery, abortion, premature rupture of membranes, pre-eclampsia, maternal or fetal death, and maternal or neonatal thrombocytopenia were fetal-maternal compli-cations reported with dengue infections during pregnancy, especially hemorrhagic dengue[8–14].

When working in endemic areas, higher levels of awareness and early diagnosis are crucial to reduce morbidities and mortalities associated with dengue fever[3,15–19]. Clinical management of dengue in newborns may vary depending on the severity of illness. Symptomatic and supportive care remain the mainstay of treatment[20–23].

This is the first case of perinatal trans-mission of dengue in a term baby reported in Turks and Caicos Islands (Caribbean). Retro-spectively, the limited history provided due to the language barrier, lack of antenatal care, combined with the severity of the maternal medical condition at admission, contributed to the delayed diagnosis of neonatal dengue in this case.

Conclusion

Maternal dengue serology should be considered near delivery if signs of perinatal infection are suspected, even if the newborn is asymptomatic. It is recommended that evidence-based clinical guidelines are developed to facilitate identification of those mothers and babies at risk in areas where dengue fever is endemic.

Conflict of interest

The authors declared no potential conflict of interest with respect to the research, authorship, and/or publication of this article.

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