

CASE REPORT

NEONATAL DENGUE

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Abstract

With the onset of dengue epidemic, increasing number of pregnant women are at the risk of Dengue infection. If she delivers at the height of viremia, there is a probability of severe post-partum haemorrhage from the raw wound in the uterus and the newborn is at risk of vertical transmission of dengue infection. A 23 years female with 37 weeks of pregnancy was admitted to our hospital with 3 days of fever. She was diagnosed to have dengue infection. She delivered on the third day of admission. Mother had a tormentous post partum period requiring intensive care support and multiple transfusions. Baby also developed dengue infection and severe thrombocytopenia. Awareness of this condition helps in proper management and prevention of maternal and neonatal death.

Introduction

With the emergence of dengue epidemic, more number of pregnant women are at risk of dengue infection. Though secondary infection is found to be more serious but if a pregnant woman gets the primary infection in late pregnancy and delivers at the height of viremia, both mother and newborn are at risk of life-threatening complications. We present such a mother-infant pair.

Case

Mother: A 23 years female with 37 weeks pregnancy was admitted with the complaints of high fever, headache and myalgia for three days. On investigation, her hemoglobin (Hb) was 9.5 gm/dl, white cell count (WBC) was 7170 cells/cu mm, and platelets were 50,000/cu mm. Dengue serology was sent and NS1 and IgM were both positive and IgG was negative. She delivered on the third day of admission and had severe post partum hemorrhage, subconjunctival hemorrhage, bilateral pleural effusion, hepatomegaly, raised alanine aminotransferase (400 U/L). Her bilirubin was 2.2 mg/dl, prothrombin time (PT) was 23.8 sec, INR was 2.35, activated partial thromboplastin time (APTT) was 42.2 sec. Renal function tests were normal. Platelet count reached a nadir of 8,000 /cu mm on third postnatal day (PND). Repeated blood transfusion, fresh frozen plasma (FFP) and platelet transfusions were needed. Platelet count started rising on the 4th post natal day (43,000/cu mm) after which she recovered.

Baby: A female baby was delivered vaginally on sixth day of maternal illness. Birth weight was 2.7 kg, and APGAR score was 7/10 and 9/10 at one and five minutes respectively. Vitals were stable and baby was put on formula feeds as mother's condition was critical. Investigations on Day 1 are shown in Table 1. Dengue serology was negative. On Day 3 baby was admitted to neonatal intensive care unit (NICU) with fever (39.5°C), and icterus up to thighs. Liver was 2 cm below the costal margin Suck was good and baby was tolerating feeds well. Intravenous antibiotics were started and repeat investigations were sent (table 1). Bilirubin was 15.9 mg/dl (direct 0.6 mg/dl), Blood group B+ (mother's blood group A+), Dengue NS1 was positive and IgM and IgG were negative. Baby was put on single surface phototherapy. S. Bilirubin was 13mg/dl on D5 and phototherapy was stopped. Baby had fever for the next three days after which fever settled. Blood culture did no show any growth, so antibiotics were stopped. She was put on full breast feeds on Day 8 of life.

On Day 10, mother noticed baby had refusal of feeds. Baby's temperature was 39°C, she has tachypnea, tachycardia, hepatomegaly, lethargy. Her blood sugar was 28mg/dl. Few petechial lesions were noted on the face and trunk on Day 11. Hemogram is depicted in Table 1. X-ray chest was normal. Platelet transfusions were given for three consecutive. Ultrasound cranium did not show any intracranial hemorrhage. Baby was put on gastric tube feeds and intravenous fluids. With the return of temperature to baseline, baby became more alert and started sucking at breast, liver size started regressing and platelet count started rising. Baby was discharged and went home on Day 20.

Discussion

Intrauterine transmission of dengue infection is greatest when a pregnant woman delivers at or near the peak of DENV viremia. There is an insufficient level of protective maternal anti DENV IgG to transfer to the fetus. The duration of viremia and the febrile phase lasts longer in newborns experiencing primary infection due to more gradual antibody or cellular response. Increasing number of cases of perinatal transmission of Dengue fever is being reported from various countries e.g Thailand (1), Malaysia (2), Puerto Rico (3), Sri Lanka (4), Port Sudan (5), Peru (6) and Brazil (7). In the review by Sirinavin et al (1), the onset of fever in

Table 1: Serial blood profile of baby

	Day 1	Day 3	Day 10	Day 11	Day 14	Day 15	Day 19
Hb (gm/dl)	14.6	17.6	13.8	13.2	10.6	9.0	10.7
PCV	43	51	44.1	43	33	28.6	34.6
Total leucocyte count (cells/cu mm)	17,400	4,400	4,000	4,900	14,700	16,800	11,780
Platelets (cells/cu mm)	2,36,000	1,56,000	1,35,000	10,000	8,300	29,000	1,13,000

the newborn varies from 1 to 11 days after birth with an average of 4 days and lasts 1-5 days. In our case baby developed fever and NS1 Ag was positive on the third day. Negative serology on Day1 may be due to low viremia at that time. Baby had a biphasic fever. In a case report of perinatal transmission of dengue virus from Puerto Rico (3), of the 33 cases reported, all developed fever and thrombocytopenia in the first two weeks after birth. Biphasic fever has not been previously reported in other case reports. Pediatricians caring for newborns with dengue fever should carefully observe the baby for a minimum period of two weeks before discharging them. Vigilant monitoring and proper hydration can lead to uneventful recovery from this potentially lethal condition.

References

1. Sirinavin S, Nuntnarumit P, Supapannachart S, Boonkasidecha S, Techasaensiri C, Yoksarn S. Vertical dengue infection: case reports and review. *Pediatr Infect Dis J.* 2004; 23: 1042-1047
2. Chye JK, Lim CT, Ng KB, Lim JM, George R, Lam SK. Vertical transmission of dengue. *Clin Infect Dis.* 1997; 25: 1374-1377.
3. Perez-Padilla J, Rosario-Casablanca R, Perez-Cruz L, Rivera-Dipini C, Tomashek K. Perinatal transmission of dengue virus in Puerto Rico: a case report. *Open Journal of Obstetrics and Gynecology* 2011;1: 90-93.
4. Kariyawasam S, Senanayake H. Dengue infections during pregnancy: case series from a tertiary care hospital in Sri Lanka. *J Infect Dev Ctries.* 2010; 4: 767-775.
5. Adam I, Jumaa AM, Elbashir HM, Karsany MS. Maternal and perinatal outcomes of dengue in PortSudan, Eastern Sudan. *Virology* 2010;7:153.
6. Silva Delgado H, Ruiz Rios JC, Vela Barbaran EL, Rengifo Del Aguila D, Garcia M M, Rodriguez Benavides L, Mendoza-Ticona A. [Neonatal dengue in Peru: a case report]. *Rev Peru Med Exp Salud Publica.* 2011; 28: 140-144.
7. Maroun SL, Marliere RC, Barcellus RC, Barbosa CN, Ramos JR, Moreira ME. Case report: vertical dengue infection. *J Pediatr (Rio J).* 2008; 84: 556-559.
8. Halstead SB. Dengue: dengue and dengue hemorrhagic fever. In: Feigin RD, Cherry JD, Demmler GJ, Kaplan SL, eds. *Text book of Pediatric Infectious Diseases.* 5th ed. Philadelphia. Saunders; 2004: 2200-2210.

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