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Congenital Malaria in a Neonate - An Unusual Case Report

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Abstract: ***Congenital malaria is extremely rare condition which occurs due to direct infection of an infant with malaria parasites from their mother prior to or during birth. We here in report a case of 21 - day neonate who had intermittent high - grade fever & vomiting with Hb 7.2 g/dl, WBC 9, 000 /cmm, platelet count 1, 12, 000/cmm and CRP 136 mg/dl. Examination of peripheral blood smear revealed micocytic hypochromic anemia along with ring & trophozoites of P. Vivax grade +3. History of mother was re - evaluated. She was positive for P. Vivax during delivery. Hence diagnosis of congenital malaria was suggested.***

Keywords: Neonate, Congenital, Malaria, P. Vivax, Hb

1. Introduction

Congenital malaria is a rare disease even in malaria - endemic areas & occurs due to vertical transmission of parasites from mother to child perinatally during pregnancy and not from bite of an infected mosquito or through blood transfusion. (1) Protective immunity through transplacentally acquired maternal antibody may delay onset of symptoms up to 10 to 30 days after birth. (2) Past history & relevant investigations of mother may help in diagnosis due to absence of exoerythrocytic cycle. (3)

2. Case Report

A 21 - day female neonate was admitted for intermittent high - grade fever & vomiting of 1 - week duration. Mother was primigravida who had a normal vaginal delivery. Birth weight of the newborn was 1.9 kg. Infant was on exclusive breast feeding; vital signs were normal and no physiological jaundice was detected. On admission, physical examination revealed pallor, poor feeding & weight was 1 kg. Mild tachypnea & tachycardia was also present. CBC showed Hb 7.2 g/dl, PCV 21.2 %, RBC count 3.72 mill/cmm, WBC 9, 000 /cmm & platelet count 1, 12, 000/cmm. Other laboratory findings - C reactive protein was elevated (136 mg/dl), serum electrolytes & billirubin were within normal range. No ABO or Rh incompatibility was detected. Provisional diagnosis of neonatal pneumonia or sepsis was considered & antibiotics were started. The neonate was also transfused with packed red cells (10 ml/kg body weight) for 3 h to raise the Hb content, but no improvement was seen. Later, examination of peripheral blood smear revealed micocytic hypochromic anemia and thrombocytopenia along with ring and trophozoites of Plasmodium vivax with grade +3. Rapid malaria test for malaria antigen was also positive. G6PD level was within normal range. Antimalarial therapy with intravenous artesunate was initiated.3 days after treatment peripheral parasitemia was completely cleared. History of mother was re - evaluated. She had a history of moderate grade pyrexia with chills and anemia for 1 weeks in the last trimester. Her peripheral blood examination was positive for P. vivax during delivery and given full course of antimalarial treatment. Hence diagnosis of congenital malaria was suggested.

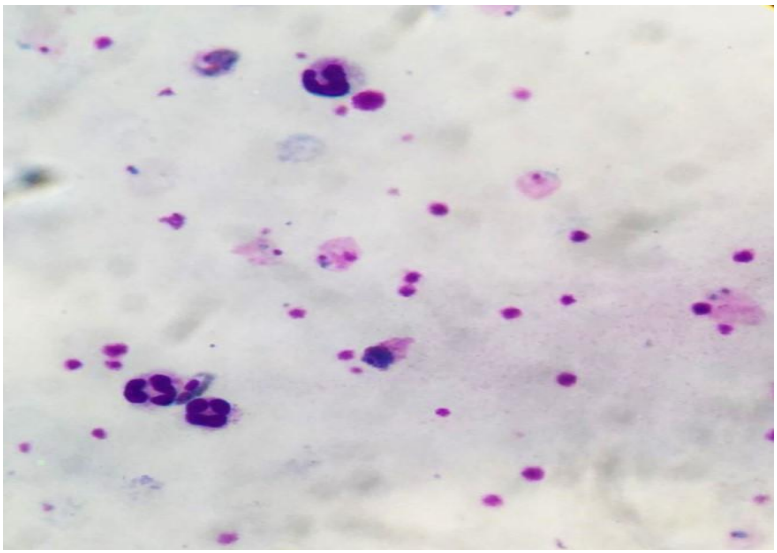

Figure 1: Thick smear of Giemsa stain shows ring & trophozoites of P. Vivex (100X View)

Figure 2: Rapid malaria test for P. vivex antigen

3. Discussion

Malaria is a major problem in tropical and subtropical countries. (3) But even in hyperendemic areas, newborns rarely become ill with malaria, because of.

1) Transplacental acquired maternal antibody (IgG)
2) Unfavourable environment offered by foetal erythrocytes like low free - oxygen tension, high levels of fetal hemoglobin & abnormal haemoglobin that are resistant to malarial infection,
3) Secretion of lymphocytes or macrophage - derived toxic substances across the placenta to foetal circulation
4) Malaria chemotherapy during pregnancy.

Postulated mechanisms for congenital malaria include HIV co - infected pregnant women, increased resistance and virulence of parasite resulting from altered antigenic determinants & impairment of antibody responses, direct penetration through chorionic villi, premature separation of placenta, physiologic transfusion of maternal red blood cells to fetal circulation in utero or at the time of delivery, absence of immunity especially pregnant women travelling to endemic areas. Most common findings are fever, anemia, vomiting and splenomegaly. Respiratory distress, loose stools, headache and hepatomegaly can be seen as well. Artemisinin - based combination therapy (ACT) is the recommended treatment for malaria in infants. (3, 4)

4. Conclusion

As clinical features of congenital malaria resemble with neonatal sepsis and delay onset of symptoms up to 10 to 30 days after birth, malarial screening of febrile neonates especially in endemic zone is suggested. Awareness and timely intervention are necessary for prevention of neonatal morbidity and mortality.

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