A rare cause of anemia and thrombocytopenia in a newborn: congenital malaria

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A newborn with fever and jaundice was referred to our hospital with anemia and thrombocytopenia of unknown origin. The patient's mother suffered from malaria infection during the third trimester of her pregnancy, but she did not accept medical therapy. On physical examination the newborn showed mild splenomegaly and jaundice. Laboratory tests revealed marked anemia with a hemoglobin value of 7.7 g/L and thrombocytopenia with platelet numbers of 17,000/mm³. Plasmodium vivax was detected in blood smear. Oral therapy with chloroquine and primaquine was started. This patient is the second case of congenital malaria reported from Turkey, and shows that the diagnosis of congenital malaria should be considered in infants with suspected congenital infection who are born to mothers with a history of malarial disease. We emphasize the importance of adequate antenatal medical therapy during pregnancy.

Key words: congenital malaria, newborn thrombocytopenia, newborn anemia.

Congenital malaria has been considered to be very rare, even in malaria-endemic areas. Placental barrier and maternal antibodies may protect the fetus. It can result in significant neonatal mortality and morbidity. Children with congenital malaria can manifest with fever, irritability, feeding problems, hepatosplenomegaly, anemia, and jaundice[1-3]. The diagnosis can be confirmed by a blood smear investigation. We report a 22-day-old female infant who was referred to our hospital with neonatal thrombocytopenia and anemia. She was diagnosed as congenital malaria.

Case Report

A 22-day-old female infant was referred to our hospital with anemia and marked thrombocytopenia of unknown origin. She had a history of fever and jaundice for three days before admission. Her delivery had been normal at term after a first pregnancy with a birth weight of 3050 g, length of 47 cm, and head circumference of 35 cm. Her Apgar scores were nine at one and five minutes. She was clinically normal, nourished and well developed.

On physical examination she showed mild jaundice, splenomegaly with spleen three cm below costal margin, and tachycardia. Her heart rate was 165/min, respiratory rate 50/min, temperature 37°C, and blood pressure 60/40 mmHg. She looked pale but was normoactive. Although the patient's mother suffered from malaria infection during pregnancy in the last three days of the third trimester of gestation, she had refused necessary anti-malarial therapy. Because of maternal history, Plasmodium was searched, but no parasites were seen on Giemsa stain at thin and thick blood films. A provisional diagnosis of sepsis was made; empiric antibiotic therapy was started and congenital infections were investigated. Laboratory tests revealed marked anemia with a hemoglobin value of 7.7 g/L, thrombocytopenia with platelet numbers of 17,000/mm³ and mild hyperbilirubinemia with indirect bilirubin of 4.6 mg/dl. Other serum biochemistry parameters, metabolic values, blood cultures, acute phase reactants, and viral and bacterial serological studies were within normal limits.

On the third day of admission, microscopic examination of repeat thin blood film showed infection by Plasmodium vivax in our patient (Fig. 1). The patient received red cell and platelet transfusion. Initially, she was treated with chloroquine at 10 mg/kg, followed by 5 mg/kg at 6, 24, and 48 hours after first dose, and primaquine at 0.3 mg/kg daily for 14 days. Thrombocytopenia resolved in the third day of the treatment. She was discharged and followed up for six months and there were no symptoms.

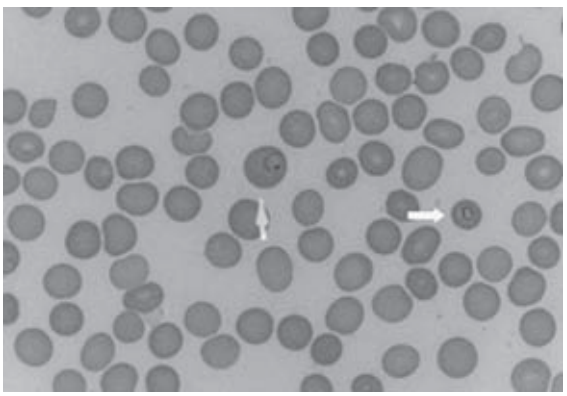

Fig. 1. A photograph of typical gametocytes of Plasmodium vivax from a peripheral blood smear (arrows) of Turkish infant (Giemsa stain, x 1,000).

Discussion

Malaria is estimated to cause up to 300 million clinical cases and more than one million deaths each year[1]. It is a major problem in tropical and subtropical countries and can also be transmitted transplacentally from a pregnant woman to her fetus. But even in hyperendemic areas, newborns rarely become ill with malaria, because of passive maternal antibody and high levels of fetal hemoglobin[3,4]. This is the second case of congenital malaria reported in Turkey[5]. The non-immune, primigravida are usually the most affected, like in our case[6].

Malaria in children differs from that in adults in terms of varied manifestation and higher mortality, especially under the age of five years. The newborn child can manifest with fever, irritability, feeding problems, hepatosplenomegaly, anemia, and jaundice[1,3]. Although fever is a cardinal symptom of malaria, it may be absent in congenital malaria. In our patient the pattern of fever was not typically periodic and she had only one high fever attack.

We considered different viral and bacterial infections and some of the metabolic disorders[7], and conducted diagnostic work-ups appropriately.

Thrombocytopenia is a complication of malaria infection with Plasmodium vivax and might be due to hypersplenism or bone marrow suppression. Although significant bleeding is uncommon, platelet counts can diminish to 10,000-20,000/mm^3. The patient showed intractable and severe thrombocytopenia which required repeated platelet transfusions.

The diagnosis of malaria is established by identification of organisms on Giemsa-stained smears of peripheral thick or thin blood smears. Stauffer et al.[8] reported that a single smear without parasites is not sufficient to rule out malaria. We also were able to find parasites only in repeat blood smears.

Pregnant women with malaria should receive prompt and adequate treatment, since both the pregnant women and their babies are at high risk of fatal outcome[3]. Therefore, antimalarial drug treatments should be started immediately. Chloroquine is the main drug of choice. Primaquine should be given to eradicate the parasites surviving in the liver. We started the treatment with chloroquine and primaquine in our patient and her mother.

This case shows that the diagnosis of congenital malaria should be considered in infants with suspected congenital infection who are born to mothers with a history of malarial diseases. This patient is the second case reported from Turkey. We emphasize the importance of adequate antenatal medical therapy for mothers infected with Plasmodium.

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