Case Report

Neonatal Malaria Confusing as Sepsis: Case Report, Afar, Ethiopia

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Abstract

Introduction: Malaria is an acute and chronic vector born protozoa disease with high mortality and morbidity in low- and middle-income countries. It is uncommon to see malaria by neonatal age for some physiologic protective reasons.

Case presentation: A case 9 days old female neonate presented with high grade fever, decreased suckling and limb activity. For which neonatal sepsis was considered and started initially with intravenous antibiotics and referred for no improvement later detected to have malaria. We report this case for its diagnostic challenge and its rarity.

Conclusion: We recommend taking blood smear as part of initial work up in patients with high-grade fever not responding to initial management in areas of high malaria burden. Newborns with unexplained fever and refusal to feed in malaria endemic areas should be tested for malaria.

Key Words: Neonate, Malaria, Sepsis, Afar

Background

An estimated 219 million cases and 435 000 related deaths occurred worldwide due to malaria in 2017 (1). Approximately 81 % of malaria cases and 91 % of malaria deaths occurred in the African region. Malaria is less likely to appear in infants less than 3 months because of the fetal hemoglobin and maternal antibodies. But that is not universal protective mechanism and can be over-whelmed by very high transmission intensities (1, 2).

In 2017approximately 81%of malaria cases and 91 % of malaria deaths occurred in the African region, with more than 75 % of the t otal area of Ethiopia becoming a major publi c health issue (2, 3). Neonatal malaria is a life-threatening condition that is transmitted after the birth with an infectious mosquito bite. The incidence is considered to be infrequent due to the protective effect of maternal immunity after birth. Maternal immunoglobulin G (Ig G) antibodies and fetal hemoglobin (Hb F) present at a high concentration at birth are thought to be protective (4-6).

Case Report

A 9 days female neonate presented after she had high grade intermittent fever for one day. In addition, she also has decreased suckling and activity than before. Along with this the neonate had significant weight loss. Consequently, the mother took her to hospital and was admitted.

The child was born to 24-year-old para III mother whose last normal menstrual period was unknown but the mother claims 9-month amenorrhea. She had antenatal care follow up in health center once with HIV, HBV and VDRL non-reactive and rechecked in our hospital. The mother was supplemented with iron-folate but did not take it well. Otherwise her pregnancy was uneventful with no maternal fever, chills, rigor, rash, and bleeding even within the past 14 days. Mode of delivery was spontaneous vaginal delivery at the hospital after duration of labor 15 hours with rupture of membrane unnoticed. She cried immediately with birth weight of 3.5 kg. Otherwise the neonate had no abdominal distension, and yellowish discoloration of the body.

For the above complaint she was admitted and treated with ampicillin and gentamycin for 3 days but she had no improvement and started with vancomycin and ceftriaxone.

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Though stayed for five days in the district hospital she had no improvement. She was not improving and referred to our hospital by the age of 15 days.

The patient's physical assessment revealed that she was acutely ill looking with heart rate of 160 / min; respiratory rate- 60 / minute, and temperature-38.6. She was mildly pale, anicteric, acyanotic, and not dehydrated. The anterior fontanel was patent and smooth 3 by 2 cm; there was no palpable liver and spleen on abdominal examination. The muscle tone was fine and there was depression in the primitive reflexes.

Available laboratory results showed CBC result with hemoglobin- 13.4 mg/dl, hematocrit -32 %, platelet count – 258000, white cell count- 16,000 with granulocyte 56% and lymphocyte 35%. Chest X-ray and abdominal ultrasound was normal. CSF analysis did not reveal anything. *P. falci-parum* malaria parasites were detected on peripheral blood film.

Following peripheral smear diagnosis, the baby was commenced on artesunate daily for 3 days. The fever subsided after the first dose and the baby demonstrated improved tolerance of feeds. The baby recovered completely and was discharged 10 days after admission to be seen at the outpatient clinic for a follow-up appointment.

Discussion

The neonate presented with fever, failure to suck and decreased limb activity which is resistant to first line and second line antibiotic management. Neonatal malaria presents as fever, refusal to feed, difficult breathing and irritability which is similar to the presentation sepsis on these age group. She had also neutrophilia and normal abdominal ultrasound, and also parasites at the blood film.

Neonatal malaria may be difficult to distinguish from neonatal sepsis in the prevalent areas of malaria.The signs and symptoms of malarial infection in neonates closely mimic neonatal sepsis. Medical criteria (clinical diagnosis) and identification of parasites in the blood (parasitological or confirmatory diagnosis) were used to make the diagnosis. There is a very poor accuracy for clinical diagnosis alone. Detection of parasites in Giemsa-stained peripheral blood smears is the gold standard for the detection of neonatal malaria (4, 7, 8).

The management of neonatal malaria relies on the mode of acquisition, since both the

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erythrocytic and exo-erythrocytic stages of vector-borne or acquired infections require treatment (7, 9, 10). Reports of neonatal malaria resistant to chloroquine have been on the rise in the last decade. In 25% cases of congenital malaria from Nigeria were found resistant to chloroquine (4,10, 11).

Because of the World Health Organization (WHO) recommendation that intravenous artesunate should be used in lieu of quinine for the treatment of serious P. falciparum malaria in infants, parenteral artesunate was recommended over parenteral quinine(9-12).

Conclusion

Neonatal malaria may be presented with similar features of neonatal sepsis. Intravenous artesunate was found safe and effective in the treatment of severe malaria in neonate. It is recommended to take a blood smear as part of the initial work up in patients with high grade fever as part of the investigation in high malaria burden areas if it fails to respond to antibiotic management.

Availability of data and material

The original card of the patient can be retrievedfrom the card store of the hospital at any time.

Competing interests

The authors declare that they have no competing interests.

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