CASE REPORT

Congenital Malaria Due to Plasmodium Vivax Infection: A Case Study

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SUMMARY

Malaria is an endemic disease in Pakistan but congenital malaria is a rare entity. Congenital Malaria is acquired from mother either during pregnancy or perinatally at the time of birth. In endemic areas it can present in the newborn without obvious history of fever and parasitemia in mother. We report 2 months old infant who presented to us with c/o fever for 40 days and was misdiagnosed initially as a case of neonatal sepsis. This case signifies the importance that congenital malaria should be included in the differential diagnosis of neonatal sepsis even if the mother has no proven malarial episodes during the gestational period. Early diagnosis and treatment of congenital malaria can prevent infant morbidity and mortality

Keywords: Congenital malaria, plasmodium vivax infection, time of birth

INTRODUCTION

Malaria continues to remain the most severe and complex health challenge facing the vast majority of the countries in tropical and sub-tropical regions of the world. It is one of the most predominant infectious diseases associated with underdevelopment, poverty and ignorance[1]. Malaria is still a major contributor to high rate of the global infectious disease–related mortality and morbidity particularly in Africa, South-East Asia, Eastern Mediterranean Regions and parts of South America.[2]*Plasmodium falciparum* is considered as more dangerous than the other three species (*P. vivax, P. malariae*and *P. ovale*) of the human malaria parasites because it is responsible for virtually all the severe malaria cases and deaths[3,4].

Congenital malaria has been a substantial risk for infants causing significant burden on health statistics in developing countries .In endemic areas congenital malaria is an important cause of abortion, miscarriages, stillbirths and neonatal deaths[5]. It tends to present with fever, irritability, drowsiness, feeding difficulties, vomiting, hepatosplenomegaly, jaundice or pallor. Congenital malaria is usually caused by P.vivax and P. malariae species. Malaria is often severe during pregnancy and may result in IUGR and low birth weight[6].

CASE REPRESENTATION

A two month old male neonate presented with c/o fever for last 40 days, documented 100F , intermittent relieved by taking antipyretic but recurring after 2 days not associated with reluctance to feed , loose stools, vomiting, dysuria, fits and rash. At 24thDOL he was admitted with same c/o fever as suspicion of sepsis, septic work up was done which came back negative so he was discharged with instructions of routine care. According to mother child remain well for 2 days then again c/o fever documented to 100F on every alternate day and mother noticed pallor along with fever and abdominal distension.

On presentation in ER child was febrile, pale, and had hepatosplenomegaly, liver was palpable 4cm BCM soft, non-tender, non-pulsatile, firm in consistency, regular border, spleen was palpable 8cm BCM, soft, splenic notch was not palpable. Rest of the systemic examination was remarkable. Child was active, alert and tolerating feed well. Complete blood count at the time of admission revealed hemoglobin of 5.5gm/dl, total leucocyte cells was 8.7%, neutron was 26% and lymphos was 67%. Total platelets count was 161 and retic count was 1.8%. Peripheral smear shows no blast or atypical cells.Malarial parasite slide shows positive results with Plasmodium vivax. Other relevant results included a total number of bilirubin 2mg/dl with direct fraction 1.1, GGt was 92U/L, ALT was 22U/L and Alkaline phosphate was 22U/L. Abdominal ultrasonography shows hepatosplenomegaly with normal architecture and no focal lesion.

Diagnosis of congenital malaria was made and he was given anti-malarial Syp. Chloroquine with standard dose for 3 days, he became a febrile after 24 hrs but developed fever again on 3rd day of anti-malarial so he was started artemisinin based compound (Syp. Artemther / lumefantrine) and continued after 7 days. He became afebrile within 24 hours of starting (Syp: Artemether) and remained well during rest of the hospital stay. PCV transfusion was done twice, after which he maintained his hemoglobin and does not require further transfusion. After 4 days of anti-malarial his spleen size was regressed to 6cm and liver 3 cm which further reduced to 4 cm and 2 cm respectively at the time of discharge. He was discharged after 6 days of hospital stay and called for follow up after 4 days. Before discharge we found Laboratory investigation as no malarial parasite seen with negative ICT malarial antigen. CBC revealed to hemoglobin of 8.2gm/dl, Total leucocyte cells 8.8 with neutron 14% and lymphos 76 and PLT showed 146. On complete follow up we found malarial parasite -ve and CBC as Hb 9.1gm/dl MCV 77, TLC was 11.7 and neutros 15% and lymphos was 76% and PLT was 146. Retic count was 1.0%.

DISCUSSION

Congenital malaria is a serious problem in tropical areas and in endemic areas it can even lead to neonatal deaths. Usually occurs in babies born to non-immune mothers with P-vivax and P-malariae infection[7].

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Each year, MiPis responsible for 20% of stillbirths in sub-Saharan Africa, 11% of all newborn death in Sub-Saharan Africa and 10,000 maternal deaths globally[8]. WHO recommends delivery and use of insecticide treated nets and effective management of cases by providing prompt diagnosis and effective treatment of malaria infections. In areas with moderate to high risk, WHO recommends the administration of IPTP-Sp. This continued to show benefits in both mother and the baby. Further it was found that two or more doses of ITPp-SP also protected from Sexually Transmitted infection / reproductive tract infections additional to preventing malaria[9].

P. vivax traditionally viewed as benign form of disease can be a major cause of morbidity and mortality in this age group[10]. There should be prompt parasitological confirmation of diagnosis before start of treatment artemisinin-based combination (ACT) is the recommended treatment.Congenital malaria usually present with fever, irritability, drowsiness, feeding difficulties, vomiting, hepatosplenomegaly, jaundice or pallor, but the study conducted Children Hospital Lahore, "congenital malaria, a rare entity " has reported an unusual case with decreased feeding, pallor, jaundice and hepatosplenomegaly but absence of fever. Absence of fever can be explained by transplacentally acquired maternal antibodies which confer transient protection to the infant.

Very few cases has been reported to be caused by mixed malarial infection vivax and falciparum as reported in the study conducted in Ayub Medical College, Abottabad[11]. The case report presented by AKU had congenital malaria caused by P. vivax which responded to chloroquine but our 6 weeks infant didn't responded with chloroquine so we have to use artemether according to WHO protocol[12].

Congenital malaria can be due to possibility of transmission of parasite from mother to fetal blood if there is fetomaternal leakage. Case report of congenital malaria in twins suggested such transmission where both twins got infected within 1 day after delivery. Malaria usually presents with hepatosplenomegaly but this report presented in Ghanna had both twins of congenital malaria with fever and jaundice but no hepatosplenomegalay. Moreover, negating our case these both twins responded with quinine. The mother had taken the prophylaxis of sulphadoxine/pyramethamine suggested by WHO but the still congenital malaria developedin twins which suggest need to carry further researches on this prevention prophylaxis[13].

The study conducted by Bioline international congenital malaria. An overview recommended that the increasing burden of congenital malaria should not be ignored but a prompt diagnosis can be based on high index of suspicion and good physical examination, putting congenital malaria in a list of diagnosis in neonate presented with fever. With increasing trends of chloroquine resistance, artesunate is a preferred and first drug of choice for treatment of congenital malaria[14].

Prevalence of Congenital malaria is high in endemic areas like Pakistan and India, but it's rarely chosen as a topic of studies and research in these areas lacking the pediatrician to consider it as a differential in neonate and infant with sepsis. The age of symptoms of Congenital Malaria can be delayed from 3 days to 12 weeks after birth and may be up to 15 months due to maternal IgG antibodies transmitted from mother to baby conferring some immunity. Primaquine should be avoided in the treatment of congenital malaria as the exoerythrocytric stage is lacking in patients with congenital malaria[15-16].

CONCLUSION

Our case was accidentally picked up on peripheral blood film examination. This stresses the importance of a good peripheral blood film as a part of all suspected cases of neonatal sepsis. To conclude, congenital malaria is not rare as it was thought to be; in endemic zones malaria should be suspected in all neonates who present with fever and splenomegaly. Early diagnosis could prevent unnecessary antibiotics usage and could prevent neonatal mortality.

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