CASE REPORTS

CONGENITAL MALARIA IN NEWBORN TWINS

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Conflict of Interest: *None*

SUMMARY
A 28-year-old woman (G2P1A), with 36 weeks gestation, reported to a health facility in Sunyani on 22nd February 2009 with history of labour pains, without fever. She was reported to have taken sulphadoxine-pyrimethamine for malaria prophylaxis during the pregnancy but did not use insecticide-treated net. She delivered twins on the same day. The mother and the twins developed fever on the same day. A laboratory investigation on the three of them was positive for malaria parasites. The three were successfully treated with quinine. Congenital malaria is real and it is therefore recommended that babies born to mothers with malaria should be screened for congenital malaria.

Keywords: congenital malaria, intermittent preventive treatment, apgar score.

INTRODUCTION
Congenital malaria, defined as the presence of malaria parasites in the erythrocytes of newborns aged less than 7 days, was considered rare in endemic areas until recent studies started reporting high prevalence rates.[1] Congenital malaria was first described in 1876.[2]

Congenital malaria can be acquired by transmission of parasites from mother to child during pregnancy or perinataly during labour.[3] Congenital malaria has been documented for many years but it was previously thought to be uncommon especially in indigenous populations.[4] More recent studies, however, suggest that incidence has increased and values between 0.3 to 33% have been observed from both endemic and non-endemic areas.[4] Some studies have attributed the higher incidence to an increased resistance and virulence of parasite resulting from altered antigenic determinants in addition to increased reporting.[5]

Symptoms usually occur 10 to 30 days postpartum.[6] However, the disease can be seen in a day-old baby or be delayed for weeks or months. The most common clinical features in 80% of cases are fever, anaemia and splenomegaly.[7]

Other signs and symptoms include hepatosplenomegaly, jaundice, regurgitation, loose stools, and poor feeding. Occasionally restlessness and cyanosis can also be seen.[7] Children with congenital malaria can present with fever, irritability, feeding problems, hepatosplenomegaly, anaemia and jaundice[8].Clinically, apparent congenital malaria is rare in areas in which malaria is endemic and levels of maternal antibody are high.

In Ghana, as a way of reducing malaria in pregnancy, with its consequent reduction in congenital malaria, all asymptomatic pregnant women receive regular doses of sulphadoxine pyrimethamine as an intermittent preventive treatment (IPT) during the second and third trimesters of pregnancy. The first dose (IPT1) is given after 16weeks gestation, the second dose (IPT2) is given at least one month after the first dose and the third dose (IPT3) is given at least one month after the second dose.[9]

Case presentation
A 28-year-old woman (G^2 P^{1A}), with 36 weeks gestation, reported to a Health Facility in Sunyani on 22nd February 2009 at 8.30pm with history of labour pains, without fever. Though the mother had no fever on admission, she developed fever of 38.5 ^{0} C with rigor during the course of her labour on the second day. According to the mother, even though she did not sleep in insecticide treated bed net during her pregnancy, she took all the recommended drugs of sulfadoxine pyrimethamine- intermittent preventive treatment for malaria (IPT1, IPT2 and IPT3).

She delivered identical normal healthy male twins on 23rd February 2009 at 1.45pm through spontaneous vaginal delivery. The first twin had a birth weight of 2.8kilograms and Apgar score of 8/10 and 10/10 in 1st and 5th minutes respectively. The head circumference was 32cms and body length of 49cms. The second twin had a birth weight of 2.5kilograms and Apgar score of 7/10 and 9/10 for the 1st and 5th minutes respectively. The head circumference was 31cms and body length was 48cms. The mother developed fever on the day of delivery.

A blood film for malaria parasites was indicative of malaria parasites (plasmodium falciparium). The mother had no history of having received blood transfusion.

On the day of delivery, the first twin also developed fever of 38^0 C. This fever was detected one hour after delivery. On examination, the first twin was febrile, and jaundiced but not pale. The liver and spleen were not palpable. The chest was clinically clear. The heart examination was normal. The abdomen was soft without any distension. A blood film, taken from a thumb prick, for malaria parasites was examined and it came out to be positive for malaria parasites (plasmodium falciparium). A diagnosis of congenital malaria was made. On the same day, 23rd February 2009, the second twin also developed fever of 38.1^0 C. This fever was detected one hour after delivery. On examination, the second twin was febrile and jaundiced but not pale. The spleen and liver were not palpable. The chest was clinically clear.

A blood film, taken from a thumb prick, for malaria parasites was positive (plasmodium falciparium) and a diagnosis of congenital malaria was made. Due to logistical constraints and lack of expertise at the laboratory, other laboratory investigations to determine other causes of the jaundice could not be done. Due to these same reasons, determining the serum bilirubin level of both twins and blood cultures to rule out bacterial infection could also not be done. The mother was put on quinine tablets and the twins on quinine syrup. They all responded well to treatment. The fever dropped to normal on the third day for all of them and they were all discharged on the third day. A review of the twins after a week did show that the jaundice had cleared and they had no fever and was not pale. The liver and the spleen were not palpable. The laboratory investigation for malaria parasite was negative. Similarly, the mother had no fever and the laboratory investigation was also negative for malaria

DISCUSSION

Congenital malaria is possible if there are leakages between the mother's blood circulation and the foetus. This might have contributed to the congenital malaria, since the mother had malaria parasites in her peripheral blood. Inferring from the period that the twins had the malaria, it is unlikely that they had the malaria from a mosquito bite on the hospital ward. In Ghana, falciparium malaria is the most common, and the incubation period is between 10 to 14days. Although logistical constraints, coupled with lack of expertise at the laboratory, did not make it possible to investigate for other causes of the jaundice in the babies, and do blood cultures. The laboratory staffs have considerable expertise in reading malaria slides, which they do daily.

The twins recovered with the antimalarial drugs without any antibiotics being given, which is suggestive of the fact that they may not have any bacterial infection. The only logical conclusion is that, the twins were infected with the malaria parasites from the mother which could, at this point in time be through the maternal blood in the uterus, hence congenital. It is worth noting that the twins also had normal birth weights. Other studies have documented conflicting birth weights.[10] However, some studies have reported low birth weights in association with parasitisation of the placenta. A similar association was observed in malaria endemic sub-Saharan Africa.[11,12] Differences in these weights could be linked up to many factors, such as intensity of the infection, important causes of low birth weight.[13]

The World Health Organization (WHO) 20TH Malaria Committee designated IPT as the preferred approach to reduce the adverse consequences of malaria during pregnancy. [9] The mother had received prophylaxis for malaria in the form of sulphadoxine pyrimethamine but had malaria so also the twins. The mother of the babies attended antenatal care at a health facility in the municipality, where sulphadoxine- pyrimethamine is given to mothers to swallow under direct observation by the midwives. The mother took three doses at the required and acceptable interval and it was recorded in her antenatal record card. In view of this, there is the need to investigate further the possibility of resistance of the parasite to the drug in Ghana. Furthermore, the need to research into the prevalence of congenital malaria in Ghana to inform policy can be discussed.

CONCLUSION

Although malaria continues to be a major public health importance in Ghana and pregnant women and children have been described as vulnerable groups, there have been few epidemiological studies to determine congenital malaria. Congenital malaria is real and it is therefore recommended that babies born to mothers with malaria should be screened for congenital malaria. Furthermore all neonates with unexplained fever should be evaluated for congenital malaria and treated with effective anti-malaria drugs.

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