

Plasmodium falciparum Infection In Six Months Old Baby

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About The Case

Malaria infection is caused by plasmodium species carried by female anopheles mosquito. There are five plasmodium species are known to cause malaria in human (*P. falciparum*, *P. vivax*, *P. ovale*, *P. malariae* and *P. knowlesi*) [1,2]. The estimated deaths from malaria in 2018 is 405000 worldwide of which the most affected age group is children aged under 5 years representing more than two third of the total deaths (67%, 2,72,000 deaths) of all malaria deaths worldwide [3]. *Plasmodium falciparum* known to cause severe disease with high mortality [4].

A six-month-old boy, not known to have any medical illness before presented to the emergency department with a history of persistent fever, poor appetite, decreased activity, and a history of one episode of generalized tonic-clonic convulsion for few minutes that aborted spontaneously. On examination, he was pale, mildly icteric, and irritated without neurological deficit. Chest and CVS were unremarkable. The abdomen was soft, lax but mildly distended with Hepatosplenomegaly (liver is 3 cm-4 cm, and spleen 6 cm below left costal margin). Investigations show Hb 7.5g/dl, WBC 17×10^3 /ul, Platelet 61×10^3 /ul, reticulocyte 3%, and LDH 380IU/L. ESR 105 mm/H, ALT 538IU/L, AST 862IU/L, bilirubin 400 μ mol/L and direct bilirubin 198 μ mol/L. Lumbar puncture shows clear fluid, WBC nil, RBC nil, glucose 3.4 mmol/l, and protein 0.13 g/l.

- The COVID-19 swab was negative.

Blood, urine, stool, gram stain, and CSF cultures were negative. Urine analysis was normal. Other infection screening, including Hepatitis, HIV, CMV, EBV, dengue, HSV, and parvovirus, were negative. Hb electrophoresis is normal for age. G6PD and coagulation profile were within an acceptable range [5].

CT brain was unremarkable.

- The malaria rapid test was positive.

Malaria screening (thick smear, A) Figure 1 shows plasmodium ring forms and rare Banana-shaped gametocytes.

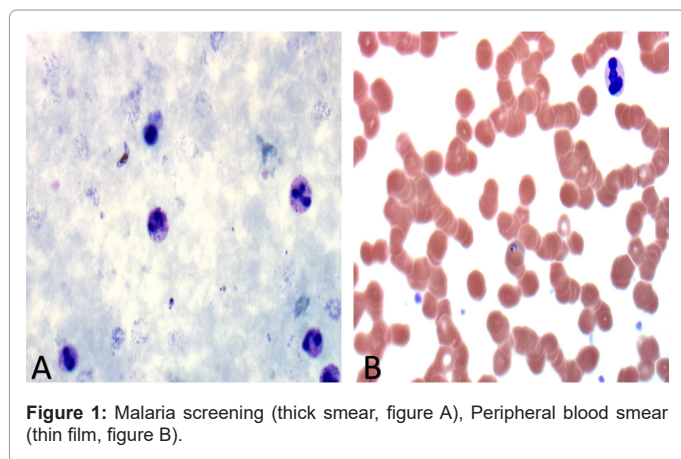


Figure 1: Malaria screening (thick smear, figure A), Peripheral blood smear (thin film, figure B).

Peripheral blood smear (thin film, B) confirmed thrombocytopenia with rare large and giant platelets. Normocytic anaemia with mild anisopoikilocytosis, few crenated red cells, occasional fragmented red cells (<1%), mild polychromasia, and rare NRBCs. Neutrophils are slightly increased with mild reactive changes. Few atypical reactive looking lymphocytes are seen. Few RBCs with *Plasmodium falciparum* rings inclusion with rare Banana shaped gametocytes are identified. Parasitaemia level is 2.1%. This child was admitted to the intensive care unit and given IV fluids. He received two packed RBCs and broad-spectrum antibiotics for a few days. The patient was successfully treated with artesunate and fansidar, and he dramatically improved within a few days with slight regression in organomegaly. Repeated peripheral blood smear revealed no parasite. The patient was discharged in good condition with no residual complication. Malarial infection is more frequently seen in adult, and it is not commonly seen in this age group. However, in endemic areas, it is one of the differential diagnoses of children presented with such clinical symptoms.

Conclusion

Plasmodium infection, especially *P.Falciparum* infection, Can lead to severe disease and can be fatal if left untreated, especially in high-risk populations; therefore, early diagnosis and starting antimalarial drugs can be of significant impact on the patient condition.

References

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Received date: November 25, 2020; Accepted date: December 09, 2020; Published date: December 16, 2020

Citation: Alneami Q (2020) Plasmodium Falciparum Infection In Six Months Old Baby J Infect Dis Ther 8:442.

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