



REVERSIBLE THROMBOCYTOPENIA: A DIAGNOSTIC DILEMMA

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ABSTRACT Vivax malaria causes a wide spectrum of clinical manifestations .It is usually associated with benign symptoms and responds promptly to anti malarial .But, sometimes it may present with some serious complications causing morbidity and mortality. The case presented here depicts a severe presentation of vivax malaria in a 35 year old female who presented with fever and chills associated with thrombocytopenia ,but responded promptly with injectable Artesunate with reversal of thrombocytopenia ,after exclusion of other causes of thrombocytopenia. The importance of the case lies in the fact ,that thrombocytopenia may be a manifestation of malaria and reversible thrombocytopenia due to malaria may cause diagnostic difficulty with unnecessary investigations and treatment.

KEYWORDS : Plasmodium vivax, severe malaria, thrombocytopenia

CASE REPORT

A 35 years non diabetic ,non hypertensive,non addict female presented with fever for 4 days with chills and rigor, relieved with sweating and associated with headache and body ache .There was no history of any bladder bowel complaint, rashes ,sore throat ,joint pain ,nausea ,vomiting or retro orbital pain .There was no history of bleeding from any site and menstrual history was normal .There was no history of any medications, nor any history of exposure to chemicals.

On examination ,the patient was alert ,conscious and co operative with temperature of 101.0 degree F .There was mild pallor without any icterus or pedal oedema .The patient was hemodynamically stable.

On examination of the Gastrointestinal system ,there was mild, non tender splenomegaly with mild hepatomegaly .Examination of the respiratory, cardiovascular, neurological and other systems were unremarkable.

A provisional diagnosis of malaria was made with differentials of dengue and Enteric fever .Blood was sent for CBC ,random blood sugar ,urea ,creatinine ,liver function tests(LFT),electrolytes ,Malaria parasite (MP) slide and dual antigen(MPDA),Typhi Dot M,NS1 antigen ,IgG and IgM Dengue antibody, blood for CS aerobic single hand ,urine for RE and CS .Chest X ray PA view ,USG whole abdomen, ECG were done.

Patient was put on intravenous fluid with injectable PPI, ondansetron, Ceftriaxone with oral paracetamol with monitoring of temperature, SPO2 and vital parameters.

Reports of fever profile revealed a diagnosis of vivax malaria with positivity of MP slide and MPDA .Plasmodium falciparum was not detected .Other reports of fever profile were negative .Complete blood count(CBC) revealed thrombocytopenia with haemoglobin of 10 gm/dl .LFT revealed mild elevation of SGOT and SGPT and electrolytes revealed mild hyponatremia .RBS was normal .Other investigations revealed no abnormality.

A diagnosis of Plasmodium vivax malaria was made and patient was put on injectable Artesunate and patient responded to therapy .Fever decreased in intensity within 4-5 days .Primaquine was stated as G-6-PD enzyme levels were normal. Platelet count was initially 70,000/mm³ and so intramuscular injections were avoided with daily monitoring of platelet counts . Bone marrow was planned, but platelet count started to recover and ultimately became normal within 4 days of starting Artesunate therapy.

Patient recovered and was discharged from hospital 10 days after admission .On follow up patient was doing well and was put on atorvastatin and L Thyroxine as patient was diagnosed with dyslipidemia and hypothyroidism on first follow up.

DISCUSSION

Malaria is a major problem in public health causing many deaths per year,worldwide.¹ Although most of the complications are due to Plasmodium falciparum ,vivax malaria may cause severe manifestations increasing mortality.²

Thrombocytopenia and anaemia are the commonest haematological complications of vivax and falciparum malaria.³Thrombocytopenia with increased frequency has been documented in many studies such as reports from Manaus in Brazilian Amazon .^{4,5}Kochar et al proved that severe thrombocytopenia is common in vivax infection.^{6,7}

Some research suggested that low platelet counts may be caused by activation⁸ and/or platelet apoptosis,⁹ and it's removal by the immune system.^{10,11}

Another hypothesis showed malaria antigen generated immune complexes could sequester the injured platelets in spleen followed by phagocytosis.^{12,13,14,15} In the study by Helena Cristina C Coelho et al ,thrombocytopenia was present in 62.9% of patients¹⁶,there was no association between severity of thrombocytopenia and bleeding ,although severe thrombocytopenia was sometimes associated with severity ,including severe vivax malaria cases.^{17,18,19,20}

There was no correlation between parasite load and different complications of vivax malaria .Thrombocytopenia was present in 78.3% of malaria cases with percentages varying between 40-78%.²¹ Studies in India showed 88% thrombocytopenia in vivax and falciparum(Saravu et al 2011)²².

The mechanism of thrombocytopenia is unclear and include splenic platelet sequestration during removal of parasite infected cells ,auto aggregation of platelets ,anti platelet antibodies and thrombopoietin synthesis alteration deriving from action of cytokines(M.V.G Lacerda et al; Punmath et al 2019).^{23,24}

The importance of the case lies in the fact that vivax malaria may lead to thrombocytopenia and other complications which responded to anti malarial therapy with reversal of thrombocytopenia.

CONCLUSION

Plasmodium vivax previously implicated in benign tertian malaria now presents with thrombocytopenia and other complications with no definite relationship between degree of thrombocytopenia and bleeding manifestations .Parasite load is not associated with complications .Mechanism of thrombocytopenia is still unclear and further studies are needed to find out the exact cause of thrombocytopenia in malaria.

Conflicts Of Interest-None

Source Of Funding-Nil

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