

Case Report:

Cerebral malaria following *P. Vivax* infection- A case report

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Abstract:

Cerebral Malaria is a dreaded complication commonly seen with *P. falciparum* infection. There have been reports of cerebral malaria among children following *P. vivax* infection. We report a case of a 9 year old boy having cerebral malaria following *P. vivax* infection. *P. vivax* isn't benign anymore and can present with complications similar to those following *P. falciparum* infection

Key words: Cerebral malaria, *P. vivax*

Introduction:

Cerebral Malaria is a diffuse encephalopathy usually seen with *P. Falciparum* infection. There have been reports of cerebral malaria following *P. Vivax* infection from across the globe⁽¹²³⁴⁵⁶⁷⁾. We report a case of cerebral malaria following *P. Vivax* infection. A nine year old boy presented with complaints of high grade fever since 3 days and two episodes generalized tonic clonic convulsion since one day. At

time of admission the patient was in an altered state of consciousness. The physical and systemic examination revealed a Glasgow coma score of 10, signs of meningeal irritation were negative, plantars bilateral extensors, liver 2 cms, spleen 5 cm firm. A provisional diagnosis of malaria was made.

The investigations of the patient are presented in the following table:

Table-1 Investigations

S.No	Investigation	Result
1.	Hb	6.5 gm/dl
2.	TLC	6500 cells/cu.mm
3.	DLC	P 62%, L 32%, M 4%, E 2%
4.	Platelet Count	1.2 lacs/cm.mm
5.	PBF	RBC's : Microcytic Hypochromic in nature. WBC: Within normal limit Platelets: Reduced in Number Trophozoites of Plasmodium Vivax seen

6.	LFT	Normal
7.	CSF	Cell count: acellular, Sugar 67 mg/dl, Proteins 45mg/dl
8.	RFT	Normal
9.	MP Card Test(Opti MAL)	Positive for P. Vivax
10.	EEG	Normal Study
11.	RBS(at time of admission)	70mg/dl

The patient was managed according to IAP guidelines⁽⁸⁾, Artesunate was given to the patient. Patient responded well to the treatment, became afebrile within 48 hours, the consciousness improved within 48 hrs. The patient was given primaquine for 14 days. On follow up the patient has no neurological deficit.

Discussion

Organ dysfunction characteristic of *P. falciparum* infection is unusual in *P. vivax* illness. *P. vivax* malaria earlier thought to be benign isn't quite benign any more. Tanwar et.al have reported a case series of cerebral malaria following *P. Vivax* infection⁽¹⁾. Kochar et.al have reported cerebral malaria due to *P. vivax* infection among adult patients. Kochar et al in their studies have indicated that *p. vivax* can cause both sequestration and non sequestration related complications usually seen with *P. falciparum* infection^(2,7). Singh et al studied 110 patients hospitalized with vivax malaria and found that 19(17.2%) of the patients had cerebral malaria.

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Sarkar et al have reported cerebral malaria due to *p.vivax* infection among adults⁽⁹⁾. Ketema et.al have reported cerebral malaria among ethiopian children following *P. vivax* infection⁽¹⁰⁾. The presumed pathogenesis of cerebral malaria is adherence of parasitized red blood cells to vascular endothelium leading to impedance of cerebral blood flow. *Plasmodium vivax* infection has also been linked to metabolic changes in brain

Plasmodium vivax mono infection has the potential to cause cerebral malaria and multi organ dysfunction syndrome. The case is presented to highlight a potentially dangerous complication of a common infection. The drawback of our report is that we could not PCR confirmation done.

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Bhatia Ravi designed the manuscript and was involved in the management of the patient. Bhatia Gunjan reviewed the literature and was involved in the final draft of the manuscript. Bhatia Ravi will act as the guarantor. Authors have no financial interests to declare.

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