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 globe¹²³⁴⁵⁶⁷. 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 of 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>
<thead>
<tr>
<th>S.No</th>
<th>Investigation</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Hb</td>
<td>6.5 gm/dl</td>
</tr>
<tr>
<td>2.</td>
<td>TLC</td>
<td>6500 cells/cu.mm</td>
</tr>
<tr>
<td>3.</td>
<td>DLC</td>
<td>P 62%, L 32%, M 4%, E 2%</td>
</tr>
<tr>
<td>4.</td>
<td>Platelet Count</td>
<td>1.2 lacs/cm.mm</td>
</tr>
<tr>
<td>5.</td>
<td>PBF</td>
<td>RBC’s : Microcytic Hypochromic in nature. WBC: Within normal limit Platelets: Reduced in Number Trophozoites of Plasmodium Vivax seen</td>
</tr>
</tbody>
</table>
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 (11). 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. 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 parastized 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.

Acknowledgement:
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.

References:

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