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RESEARCH ARTICLE

Acute Psychosis due to severe malaria caused by *Plasmodium vivax* – a case report.

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Abstract

Cerebral malaria can occur in up to one-third of patients [1] with severe malaria, and usually secondary to *Plasmodium falciparum* infection. *Plasmodium vivax* causing cerebral malaria in adult population is very rare. To our knowledge only 45 cases of central nervous system *P. vivax* malaria have been previously reported in the English language literature [2]. In this article, we report a unique case of *P. vivax* infection who presented with acute psychosis without any fever.

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Introduction:-

Malaria is one of the most common infectious illnesses in India with more than 1.07 million reported cases every year (malaria in India), and large number of deaths. India contributes for 40% of all malaria cases outside Africa [3] and more than 85% reported cases of malaria in South – East Asia annually. In India, *P. vivax* infection is responsible for 60 - 70% [3] of malaria cases and is long considered to have a benign course.

Traditionally, cerebral malaria is reported primarily in *P. falciparum* infection and rarely in *P. vivax* infection. There are very few case reports of cerebral malaria caused by *P. vivax* infection in literature.²⁹⁻³¹ [2,4] However in the past few years there is a changing trend in the clinical manifestations of vivax malaria namely severe or complicated disease; sometimes even causing death [complications]. In this article, we report the first case of *P. vivax* infection which presented with acute psychosis without any fever.

Case History:-

We report the case of a 65 year old male who presented with altered mental status and urinary incontinence for 4-5 days. Patient was apparently alright around 4-5 days ago, when one day while getting back to his residence from market he could not figure out where to go. A fellow pedestrian recognized him and helped him to get home. He was found talking irrelevant and was disoriented to time and place. Patient also complained of urine incontinence and shivering without fever. In this condition he consulted a neurologist and underwent MRI scan of his brain which showed multiple subacute and chronic lacunar infarct with ischemic leukoaraiosis and generalized cerebral atrophy. He was diagnosed as multi infarct dementia. However, on the day of admission, he developed high grade fever with chills and rigors, associated with all above complaints. He denied any history of drug abuse, alcohol intake, or any psychotic disorder in the past and he was on no other medication.

On clinical examination, patient was found to be disoriented to time and place and restless, even failing to recognise his family members. His temperature was normal, pulse 104/min, BP 170/80 mmHg and O2 saturation was 96%. He had no pallor, cyanosis or jaundice. Chest, CVS and Abdominal examination were unremarkable. CNS examination revealed neck rigidity but no other focal neurodeficit. However, both Pupils were dilated but fully reactive to light.

Investigations revealed trophozoites of *P. vivax* in peripheral smear and antigen test was positive for *P. vivax* but negative for *P. falciparum*.

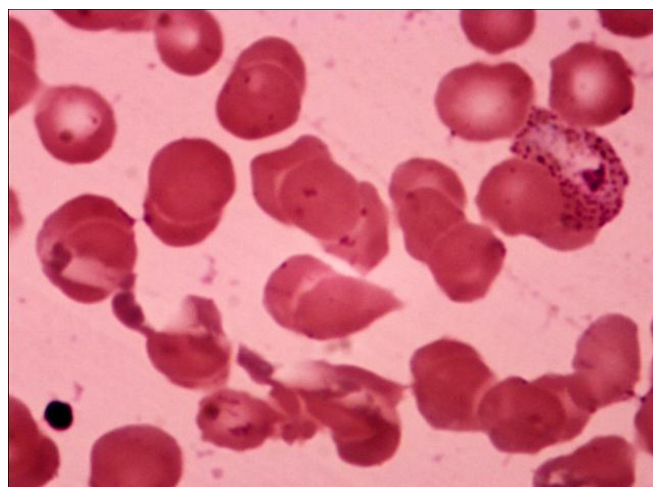
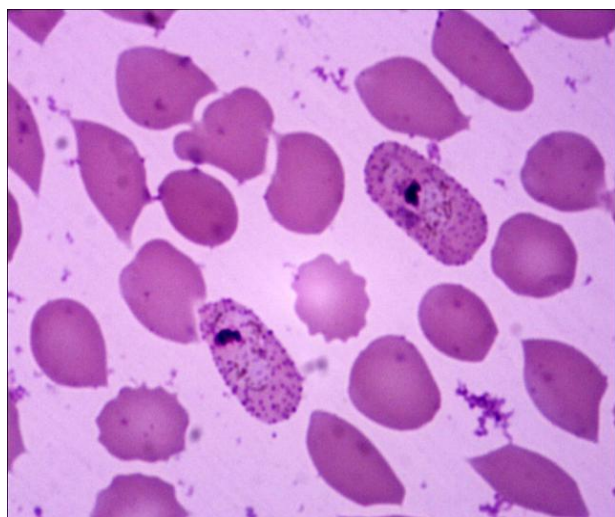
Other routine haematological and biochemical parameters were within normal limits.

The patient was treated with oral Chloroquine and intravenous artesunate in appropriate dosages along with supportive measures. The patient responded well and his symptoms (fever and psychosis) resolved within 12 hours of starting therapy.

The patient was discharged in a clinically stable condition and was advised to take Primaquine for 14 days. Follow-up evaluation after three weeks showed no residual neurological deficit.

Discussion:-

Cerebral malaria due to *P. vivax* infection is very rare. Previous published case reports by various authors [1,2,3,4,5] have found presentations ranging from seizures, decreased level of consciousness, aphasia, hemiparesis, delirium, coma, stupor, psychosis associated with *Plasmodium vivax* infection. A recent study in Mumbai on 50 cases of severe *P. vivax* malaria [5] showed cerebral malaria as a complication of vivax malaria in only 3.5%. In a review of literature, [4] studied 45 case reports of *Plasmodium vivax* cerebral malaria of which only 2 cases presented with features of psychosis which is the rarest presentation. The first case of psychosis due to *Plasmodium vivax* malaria was reported in 1996 by Tilluckdharry *et al* [6] in a 44-year-old Trinidadian male who presented with fever and psychotic episodes. The symptoms of both malaria and psychosis were resolved following standard chloroquine-primaquine therapy. The other reported case was that by Deshwal [4] himself in a 42 years old soldier who presented with fever and acute psychosis. In our patient, acute psychosis was the first symptom and low grade fever only developed after 3 days of onset of symptoms which was the reason of missed diagnosis. This case therefore highlights that *P. vivax* infection should also be kept as a differential diagnosis in patients with acute psychosis.



Conclusion:-

Traditionally, *Plasmodium vivax* has been described as a benign disease. However in the past few years increasing number of cases of severe vivax malaria, causing varied presentation akin to *P. Falciparum*, is being reported. Malaria induced psychosis is an extremely rare presentation [6,7,12]. Our patient presented uniquely with acute psychosis in absence of fever which emphasises the need to exclude malaria as a cause while evaluating acute psychosis patients. It is essential that the clinicians should be educated that malaria can cause acute psychotic manifestations, so that these symptoms are not missed and treatment delayed.

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