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AN INTERESTING CASE OF VIVAX INDUCED ARDS

General Medicine

Dr Sanjana Jp Junior Resident, Department Of General Medicine Sree Balaji Medical College, Chromepet, Chennai-600044

Dr Viknesh Prabhu Assistant Professor, Department Of General Medicine, Sree Balaji Medical College, Chromepet, Chennai-600044

Dr N Anuradha Associate Professor, Department Of General Medicine, Sree Balaji Medical College, Chromepet, Chennai-600044

Dr Himanshu Assistant Professor, Department Of General Medicine, Sree Balaji Medical College, Chromepet, Chennai-600044

Dr Jayanth Murali Junior Resident, Department Of General Medicine Sree Balaji Medical College, Chromepet, Chennai-600044

ABSTRACT

Though Plasmodium vivax is often considered to be innocuous, awareness of its potentially fatal side effects is growing. Plasmodium vivax malaria aggravated by ARDS is the subject of an intriguing case report. Prior to starting a Sulfadoxin Pyerimethamin combo treatment, patients were given artesunate. Rarely, Plasmodium vivax patients will present with ARDS or develop it while receiving treatment.

KEYWORDS

INTRODUCTION

India has a large area where malaria is prevalent, and the disease caused by the malaria parasite may manifest itself in a variety of ways. More than half of all cases of malaria in Asia are due to Plasmodium vivax(1). The most common parasite that causes severe malaria is Plasmodium falciparum, and it often manifests as organ involvement, such as kidney, lung, or CNS. Pulmonary consequences in Plasmodium vivax malaria are extremely uncommon and often manifest as a benign acute febrile disease(2). We report the case of a patient who had acute respiratory distress syndrome (ARDS) as a result of P. vivax, and who was successfully treated with artesunate, then a combination of sulfadoxin and pyrimethamine.

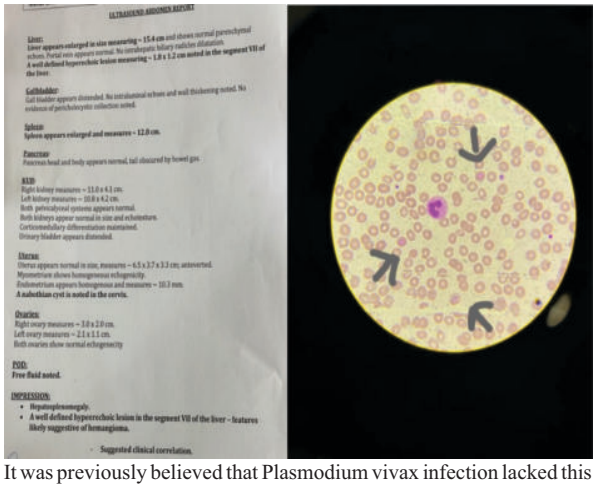
CASE REPORT

A 38-year-old woman who had been experiencing fever, myalgia, and coughing for seven days showed in. One day prior to admission, he also started having breathing problems. She had received chloroquine before being diagnosed with malaria and taken to a nearby hospital. Patient was sent to our hospital due to his deteriorating overall health. Her temperature, pulse, respiration rate, and blood pressure were all 38°C, 110/min, 50/min, and 90/70 mm Hg at the time of admission. She looked alert and well-focused.On inspection, the legs had purpura. On auscultation, there were bilateral crackles in the infraaxillary and infascapular areas. The liver was palpable and located 4 cm below the subcostal border. When inhaling room air, oxygen saturation was 78%. Analyses of the arterial blood gases revealed a hypoxemia PaO2/FiO2 ratio of 100.

By looking at peripheral film and using the histidine-rich protein 2 kit assay (best), falciparum infection was ruled out. Leptospirosis and dengue serology were negative. Blood and urine cultures came back negative. Bilateral nonhomogenous opacities were visible on the chest X-ray (Figure 1). The echocardiogram was normal with ejection fraction of 65% and no RWMA. The patient was transferred to the critical care unit and started on an artesunate and amoxicillin clavulanic acid combination. She kept receiving non-intrusive ventilation. But because of her ongoing hypoxia, she needed to be ventilated and intubated. Although the patient's oxygenation improved, the PO2/FiO2 ratio fluctuated. After receiving Sulfadoxin Pyerimethamin combo on the ninth day of hospitalisation, the patient's PO2 significantly improved. Successful extubation and hospital release for the patient. Following release for four weeks, the patient was in good health.

DISCUSSION

The patient had histories of fever and shortness of breath, which is not how malaria typically manifests.The patient's malaria was discovered outside hospital. Severe malaria symptoms in a P. vivax-infected patient are assumed to be caused by a mixed infection, however this isn't always the case. Acute respiratory distress syndrome (ARDS) as a consequence of vivax malaria has only been previously recorded in 22 instances, and pulmonary involvement is seldom observed 3. Uncertainty surrounds the pathophysiologic mechanism behind this condition, which may resemble ARDS seen in P falciparum malaria. It is not entirely clear how Plasmodia causes lung injury.


ULTRASOUND ABDOMEN REPORT

Liver:
Liver appears enlarged in size measuring ~ 15.4 cm and shows normal parenchymal echoes. Portal vein appears normal. No intrahepatic biliary radicles dilatation.
A well defined hyperechoic lesion measuring ~ 1.8 x 1.2 cm noted in the segment VII of the liver.

Gallbladder:
Gall bladder appears distended. No intraluminal echoes and wall thickening noted. No evidence of pericholecystic collection noted.

Spleen:
Spleen appears enlarged and measures ~ 12.0 cm.

Pancreas:
Pancreas head and body appears normal, tail obscured by bowel gas.

KUB:
Right kidney measures ~ 11.0 x 4.1 cm.
Left kidney measures ~ 10.8 x 4.2 cm.
Both pelvicalyceal systems appears normal.
Both kidneys appear normal in size and echotexture.
Corticomedullary differentiation maintained.
Urinary bladder appears distended.

Uterus:
Uterus appears normal in size, measures ~ 6.5 x 3.7 x 3.3 cm; anteverted.
Myometrium shows homogeneous echogenicity.
Endometrium appears homogenous and measures ~ 10.3 mm.
A nabothian cyst is noted in the cervix.

Ovaries:
Right ovary measures ~ 3.0 x 2.0 cm.
Left ovary measures ~ 2.1 x 1.1 cm.
Both ovaries show normal echogenicity

POD:
Free fluid noted.

IMPRESSION:
- Hepatosplenomegaly.
- A well defined hyperechoic lesion in the segment VII of the liver - features likely suggestive of hemangioma.
- Suggested clinical correlation.

It was previously believed that Plasmodium vivax infection lacked this mechanism, despite new studies suggesting that Plasmodium vivax-infected red blood cells may also cytoadhere to endothelial cell ligand chondroitin sulphate A 4. However, this notion is also debatable since the majority of comparable earlier instances had minimal parasitemia, as in our case, and often the patient exhibits respiratory failure signs after beginning therapy when clinical improvement is occurring. When compared to ARDS brought on by Plasmodium falciparum 3, the reported mortality rate for malaria brought on by Plasmodium vivax is much lower. Lung damage in P vivax malaria may be explained by P vivax sequestration in the lungs and an inflammatory reaction after treatment. In previously documented cases, treatment approaches included the use of chloroquines, artesunate, primaquine, invasive ventilation, and noninvasive ventilation. Sulfadoxin Pyerimethamine is frequently thought to be ineffective against Plasmodium vivax, yet it quickly improved the clinical conditions of our patient. This was a brand-new finding about lung damage caused by Plasmodium vivax. Antifolates are efficient against P vivax malaria in South Asia, according to a randomised controlled study using an open-label design 5. Additional research is needed to better understand

the mechanism at play and the therapy of this malaria complication.

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