

Plasmodium vivax Infection with Initial Presentation of Skin Rash: a case report

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Abstract

In today's society, immigration and international travel are becoming increasingly common. This poses an additional challenge and clinicians must be able to expand their differential diagnosis to include any disease endemic to the country visited. Occasionally, malaria may present with unusual signs and symptoms resulting in a delay in diagnosis. We report a case of an uncommon presentation of *Plasmodium vivax* infection in a 39-year-old Indian immigrant, who initially presented with an itchy rash and subsequently with fever and thrombocytopenia.

Introduction

On July 3, 2011, a patient with *Plasmodium vivax* infection, thrombocytopenia and skin rash was admitted to our unit. Although rare, this syndrome should be considered in patients brought to the emergency department after travelling to a malarious region.

Case report

The patient was a 39-year-old Indian immigrant who moved to Italy in 1990. Symptoms started 12 days after returning from a 6-week holiday trip to India (May 11 - June 16, 2011). The patient had stayed both in rural and urban areas. He had not taken any malar-ia chemoprophylaxis during the trip. He complained of an itching rash of 5 days duration that affected all parts of his body. Fever developed subsequently. At first he consulted the family doctor who prescribed antihistamine treatment. On July 1st, he went to an emergency department where he was diagnosed as having fever of unknown origin with a low platelet count (platelet count 62×10^9 /L; lower limit of nor-mal range 140×10^9 /L) and he was treated with an antibiotic. Malaria was not clinically suspected. When referred to us on July 3rd, the patient was pyrexial with a temperature of 40°C and on examination the skin over the legs and trunk demonstrated a patchy itching rash. (Figure 1)

Initial laboratory studies showed thrombocytopenia (platelet count 34×10^9 /L; low-normal 140×10^9 /L) and a high level of C-reactive protein (CRP) at 13.4 mg/dL (reference range = 0.0 - 0.5 mg/dL). The results of the rest of the routine blood tests were within normal limits. A blood smear detected *Plasmodium. vivax*, with a density of 5% parasitized red blood cells (RBCs). In view of his fever with thrombocytopenia, the patient was screened for dengue, sepsis and enteric fever.

He was treated for 5 days with intravenous quinine 600 mg every 8 hours and with ceftriaxone 2 gr once a day with good clinical recovery. The pruritus sub-sided within 24-48 hours of starting the antimalarial drug. Thick and thin smears obtained 72 hours after therapy were negative for parasites. His platelet count was 110×10^9 /L and CRP 0.9 mg/dL when dis-charged on July 11, 2011.

Discussion

Malaria remains a major cause of morbidity and mortality worldwide. An estimated 300-500 million people contract malaria each year, resulting in 1.5-2.7 million deaths annually.¹ The classical presentation of malaria consists of paroxysms of fever. Symptoms are usually associated with febrile paroxysms include shaking chills, sweats, headache, rigors, fatigue, malaise, arthralgia, myalgia, back pain, abdominal pain, nausea, vomiting, diarrhoea, and jaundice.²

However a classical presentation is seen in only 50%-70% of cases with the rest having atypical manifestations. Some patients can present signs or symptoms that suggest complications of malaria and these occur most frequently with *Plasmodium falciparum*.

Complications include:

Cerebral malaria
Mental symptoms
Coma
Ataxia
Seizures

Haemolysis
Haemoglobinuria
Severe anaemia
Thrombocytopenia
Hypoglycaemia

Renal failure
Bleeding
Jaundice
Pulmonary oedema
Cardiac failure

The presenting picture in malaria can mimic an acute abdomen, hepatitis, uremic encephalopathy Guillain-Barre syndrome, a focal cerebral lesion, subacute intestinal obstruction bradycardia with unexplained shock, and urticaria.^{1,3} Cutaneous lesions in malaria are rare and include urticaria, angioedema, petechiae, purpura, and disseminated intravascular coagulation.^{4,5} Dermatological manifestations of malaria in most of the case reports have been linked to *Plasmodium falciparum* Malaria, only a few cases of cutaneous lesions have been described with *Plasmodium Vivax*. Although the exact pathogenesis of skin lesions during malarial infection is not known, IgE mediated allergic reactions and direct mast cell activation releasing histamine and other mediators play a central role in the pathophysiology.⁶

Our patient after travelling to India presented urticaria as the initial sign of *Plasmodium vivax* malaria. Fever and thrombocytopenia occurred only five days later. The urticaria subsided within 12-48 h of starting antimalarial treatment.

Conclusions

Malaria is still the commonest cause of fever in patients requiring hospitalization after returning from tropical areas.⁷ However, malaria is a multisystem disorder which can mimic many diseases and may present with atypical signs and symptoms. As a result of lack of awareness of atypical manifestations, the diagnosis of malaria may be delayed or unrecognized. The case we report at first showed skin lesions. Physicians should be aware of the uncommon manifestations of malaria and maintain a high index of suspicion for the disease in any patient living in a malaria endemic area or presenting to an emergency department following travel to a malarious region.

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Figure 1

Patchy eczema rash on the trunk



