

GINGIVAL BLEEDING IN A PATIENT WITH PLASMODIUM VIVAX MALARIA: A CASE REPORT

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ABSTRACT

Gingival bleeding can be a significant oral manifestation of systemic diseases. This case report discusses a 32-year-old female patient diagnosed with Plasmodium falciparum malaria who presented with fever, chills and rigors, malaise and gingival bleeding. The case illustrates the importance of recognizing oral symptoms in the context of systemic illness and highlights the interplay between haematological complications and oral health.

Keywords: Gingival Bleeding, Malaria.

INTRODUCTION:

Gingival bleeding can result from various etiologies, including local factors like periodontal disease and systemic conditions such as coagulopathies or thrombocytopenia. Vivax malaria, caused by Plasmodium vivax, is known to affect the hematological system, often resulting in thrombocytopenia and anemia. This report aims to elucidate the relationship between malaria and gingival bleeding.

CASE REPORT:

Patient Profile:

- Age: 32 years
- Gender: Female
- Occupation: Outdoor worker (exposed to mosquito bites)

- Travel History: Recent trip to a malaria-endemic region

Clinical Presentation:

The patient presented to the outpatient clinic with the following symptoms:

- Fever (39°C)
- Chills and rigors
- Malaise
- Oral complaints: spontaneous gingival bleeding for the past three days

Medical History:

No significant past medical history. No known allergies. No medications taken prior to presentation.

Physical Examination:

- Vital signs: Tachycardia, hypotension

- Oral examination: Swollen, inflamed gums with bleeding upon slight provocation (Fig-1).

No signs of periodontal disease or systemic infection.

- Abdominal examination: Mild splenomegaly noted.

Laboratory Findings:

- Complete blood count (CBC):

- Hemoglobin: 9.5 g/dL (low)

- White blood cells: 3,500 cells/mm³ (low)

- Platelets: 59,000 cells/mm³ (low)

- Peripheral blood smear: Positive for Plasmodium vivax (trophozoites seen, Fig-2).

- Liver function tests and renal function tests: Within normal limits.

Diagnosis

Based on clinical presentation, laboratory findings, and travel history, the patient was diagnosed with acute vivax malaria complicated by thrombocytopenia, leading to gingival bleeding.

Management

The patient was started on:

- Antimalarial treatment: Artemisinin-based combination therapy (ACT) was initiated.

- Supportive care: monitoring of vital signs, and provision of platelets was done to manage severe thrombocytopenia.

The patient was advised on maintaining oral hygiene and was given chlorhexidine

mouthwash to reduce the risk of further bleeding.

Outcome

After 72 hours of treatment, the patient's symptoms began to improve. Repeat CBC showed an increase in platelet count to 90,000 cells/mm³ and hemoglobin levels rose to 11.0 g/dL. The gingival bleeding resolved by the end of the treatment course. The patient was discharged on day five with oral antimalarial medication and follow-up instructions.

DISCUSSION:

According to Malaria World Report 2020, 241 million cases of malaria were reported globally in 2023(1) Malaria presenting with thrombocytopenia is reported less and that too with gum bleeding is very less reported in literature.

Platelets have multifactorial roles in malaria pathogenesis. Platelets can directly impact malaria pathogenesis through a number of different mechanisms. First, platelets can protect against malaria progression by binding to infected erythrocytes and inducing Plasmodium killing through release of PF4 (platelet factor-4). In contrast, platelets tethered to ultralarge VWF strings secreted from activated endothelial cells can promote cyto-adhesion and sequestration of infected erythrocytes, thereby promoting vascular occlusion. Finally, platelets can further

promote malaria progression by driving proinflammatory effects directly, and by activating circulating leukocytes. In these processes platelets gets sequestered in spleen and it leads to thrombocytopenia(2)(3).

In a large study done by Lampah et al in 2015, the corresponding risks of severe thrombocytopenia were 5.4 for mixed infections, 3.73 for *Plasmodium vivax* infection, and 2.16 for *Plasmodium malariae* infection ($P < .001$)(4).

Makkar et al. (2002), Aggarwal et al. (2005) and Khan et al. (2011) have reported only gum bleeding with malaria in 43 old male, 7 year old male and 54 year old female respectively(5–7) (Table-1).

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Clinicians should be aware of these associations when evaluating patients presenting with oral symptoms, particularly in endemic areas. Early recognition and management of malaria not only address the systemic infection but also mitigate complications like gingival bleeding(8,9).

CONCLUSION:

This case emphasizes the need for an interdisciplinary approach in managing patients with systemic illnesses that present with oral manifestations. Clinicians should consider malaria in differential diagnoses for patients presenting with gingival bleeding, especially in endemic regions.

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FIGURE

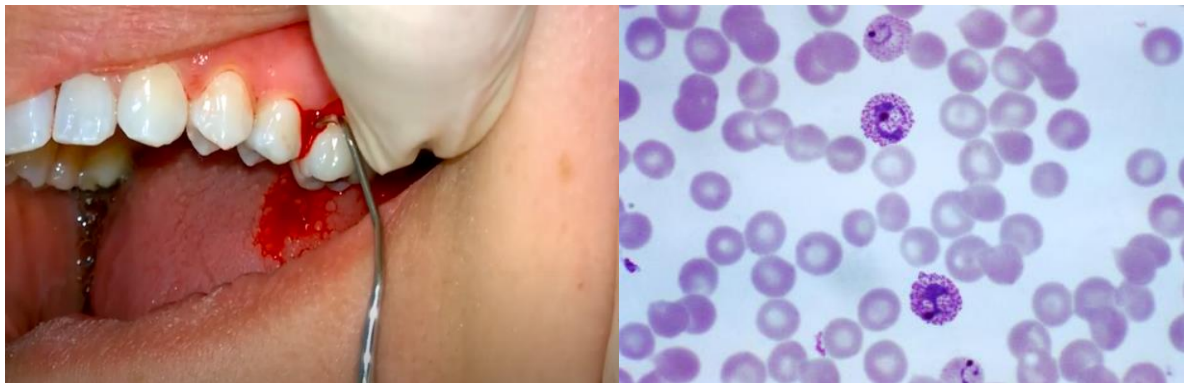


Fig-1: Showing gum bleeding on mild provocation Fig-2: Peripheral blood smear showing Vivax trophozoite

TABLE:

Year	Author	Age/Sex	Species	Symptom
2002	Makkar et al	43/M	Vivax	Gum Bleed
2005	Aggrawal et a	7/M	Vivax	Gum Bleed
2011	Khan et al	54/F	Falciparum	Gum Bleed
2024	Our Study	32/F	Vivax	Gum Bleed

Table 1: Showing comparative studies on gum bleeding in malaria