

PERIPHERAL GANGRENE - A RARE PRESENTATION OF FALCIPARUM MALARIA

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Abstract :The occurrence of peripheral gangrene manifested by distal ischaemic damage in the absence of large vessel obstruction is a rare manifestation of falciparum malaria. A case of peripheral gangrene developed in a patient of falciparum malaria involving only one extremity (right foot) is being reported here for its rarity although few cases of symmetrical peripheral gangrene due to falciparum malaria have been described in the literature.

INTRODUCTION

Symmetrical peripheral gangrene (SPG) is defined as symmetrical distal ischemic damage at two or more extremities without any evidence of obstruction or vasculitis of the relevant artery. This condition is usually seen as a complication of infection of bacterial, viral or rickettsial origin; low output states like myocardial infarction, shock, congestive heart failure; and use of vasopressors like dopamine. Less commonly it is described as a complication of paraneoplastic syndrome, ergotism, polymyalgia rheumatica, C-protein deficiency, Raynaud's phenomenon and sickle cell disease etc. In the literature only few cases of SPG have been reported in falciparum malaria²⁻⁸. But asymmetrical peripheral gangrene (APG) involving only one extremity (in our patient right foot) has not been described in the literature so far.

CASE REPORT

A 28 years old unmarried male labourer by occupation, presented with blackish discoloration of all the toes of right foot since 10 days (*photograph*). Seven days before the development of black discoloration of the toes, he had high grade fever with rigors and chills and loss of consciousness for the last 24 hours. On physical examination, he was mildly anemic with no evidence of dehydration, cyanosis and edema. Pulse rate was 110/min regular, BP 100/70 mmHg, respiratory rate 23/min and altered sensorium. All peripheral pulses were palpable. Abdominal examination revealed hepatomegaly 4 cm below the right costal margin and splenomegaly just palpable below the left costal margin. Examination of rest of the systems was noncontributory. His laboratory profile revealed Hb 7.2 gm/dl; TLC 6800/mm³; DLC- N62, L34, E2, M2; ESR 20 mm at the end of 1st hour; platelet count 2.2 lacs/mm³; RBS-120 mg/dl; urine C/E -NAD; B.urea 32 mg/dl; Serum creatinine 1.1 mg/dl; Serum bilirubin 1.0 mg/dl; SGOT 30 IU/L; SGPT 35 IU/L; Serum alkaline phosphatase 170 IU/L; BT 1 min 40 sec; CT -2 min 10 sec; PTT -14 seconds; ECG -normal graph; Widal test -ve. Peripheral blood smear showed presence of asexual forms of P.falciparum. Blood and urine culture, HBsAg, anti HCV, antinuclear antibodies, LE cells, RA factor VDRL and Coomb's test were noncontributory. CSF examination was normal. G-6PD was not deficient. Echocardiography and colour doppler study of right limb vessels did not show any abnormality. Blood could not be tested for fibrin degradation products and cryoglobulins because of financial constraints. Local examination of the right foot revealed blackish discoloration of all the toes with definite line of demarcation without any local rise of temperature and ulceration (*photograph*). As the PBF revealed presence of asexual forms of P.falciparum, the patient was put on I/V quinine hydrochloride 600 mg given 8 hourly. The patient improved and regained consciousness after 48 hours of treatment.

DISCUSSION

The most common cause of SPG is septicemia⁹. But other conditions include asplenia, diabetes mellitus, renal failure, Raynaud's phenomenon, myoglobulinaemia, use of ergot and vasopressors like dopamine. Disseminated intravascular coagulation (DIC) is the most common pathogenic mechanism in majority of cases of SPG^{2,3,4,6,7,8}. The likely mechanisms for



DIC in falciparum malaria include activation of complement system⁸, marked parasitaemia triggering the coagulation pathway¹⁰, cytoadherence and rosetting resulting in micro-circulatory obstruction¹¹, alterations in the lipid disturbances across the surface membranes of the parasitised RBC's activating the coagulation pathway¹². Though our patient had no biochemical evidence of DIC, yet its presence could be possible in view of the finding of other workers²⁻⁸ where no manifestation of spontaneous bleeding was found. However in our patient, DIC could have been averted in the initial procoagulant stage with the effective treatment of quinine therapy before the development of consumptive coagulopathy. In the literature, SPG has been described as a complication of P.falciparum malaria by many workers²⁻⁸. But no reference in the literature with regard to asymmetrical peripheral gangrene as in our case involving only one extremity (right foot) could be found even after extensive review of the literature. So, it may be the first rare case of Plasmodium falciparum malaria manifesting as asymmetrical peripheral gangrene from this part of the country to the best of our knowledge. Hence the case report.

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