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Intraleukocytic hemozoin pigments in complicated *Plasmodium falciparum* cerebral malaria

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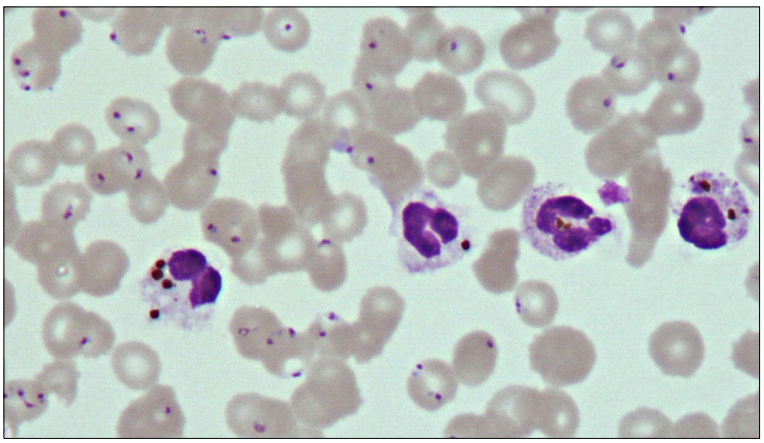

A 33-year-old man presented with left hypochondrium pain and high-grade fever for 1 week and generalized convulsions followed by persistent unconsciousness. Physical examination revealed pulse, 118 beats/min; blood pressure, 90/60 mmHg; temperature, 38.5°C; Glasgow Coma Scale score, 6/15; and decerebrate rigidity. Complete blood count showed hemoglobin, 8.1 g/dL; total leukocytes, 12.6×10^9/L; platelets, 13×10^9/L. Other investigations revealed aspartate transaminase, 119 U/L; alanine transaminase, 76 U/L; total bilirubin, 3.5 mg/dL; indirect bilirubin, 2.8 mg/dL. His coagulation profile showed an international normalized ratio of 2.4, along with severe metabolic acidosis. Contrast-enhanced computed tomography showed diffuse cerebral edema. Leishman's stained peripheral film revealed abundant intraerythrocytic *Plasmodium falciparum* trophozoites and numerous brown, birefringent, cytoplasmic inclusions of hemozoin pigments in virtually all neutrophils (**Figure,** Leishman's stain, ×100). Some RBCs exhibited 2-3 trophozoites/cell. The parasitic load was markedly high (61.7×10^3/μL blood). The patient was immediately intubated. Despite adequate therapy, his condition deteriorated; he developed renal shutdown and acute respiratory distress syndrome and eventually died. A distinctive feature was the presence of intraleukocytic hemozoin in the malarial infestation. The presence of hemozoin, a biocrystal synthesized by hemoparasites to avoid free heme toxicity from erythrocytic invasion, in >5% of circulatory neutrophils is a poor prognostic marker, indicating severe disease.