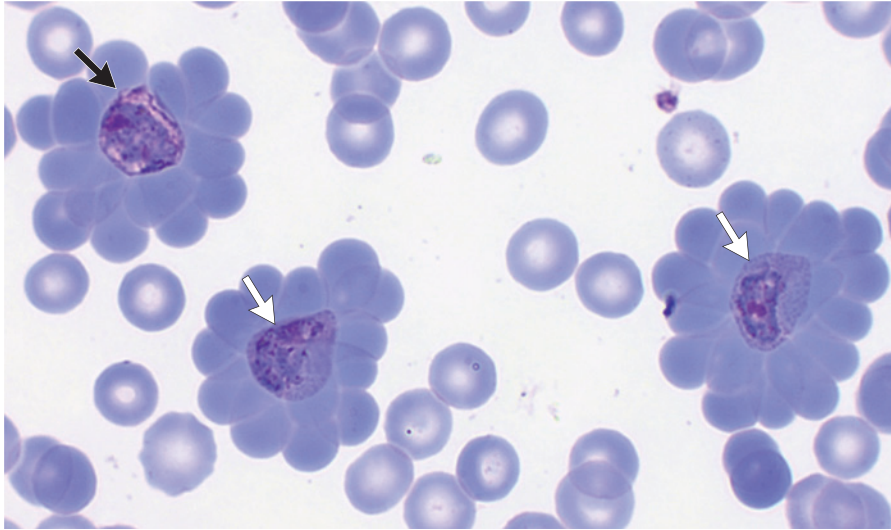


IMAGES IN CLINICAL MEDICINE

Stephanie V. Sherman, M.D., *Editor*

Red-Cell Rosette Formation in Malaria



A 57-YEAR-OLD WOMAN WITH A HISTORY OF RECENTLY TREATED MALARIA presented to the hospital with a 2-week history of fatigue and anorexia and a 2-day history of fever. Three months before presentation, she had completed a course of piperaquine and dihydroartemisinin to treat a *Plasmodium vivax* infection and had returned to normal health. Her temperature was 39°C, and blood pressure 98/50 mm Hg. A physical examination was notable for splenomegaly. Laboratory testing showed a hemoglobin level of 10.6 g per deciliter (reference range, 12.0 to 15.5). A peripheral-blood smear that was prepared with May-Grünwald-Giemsa stain showed red cells containing malaria gametocytes (black arrow) and mature trophozoites (white arrows) surrounded by uninfected erythrocytes in rosette formations. Red-cell rosette formation, which may be seen in *P. vivax* or *P. falciparum* infection, is thought to be a mechanism by which infected cells can escape splenic sequestration, phagocytosis, and possibly, exposure to antimalarial agents. Antigen testing for *P. vivax* was positive, and the parasite load was less than 1% in red cells. A diagnosis of malaria due to relapsed *P. vivax* infection was made. Treatment with another course of antimalarial agents was given. At 3 weeks of follow-up, the patient was reevaluated and found to be afebrile and asymptomatic.

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