

Human granulocytic anaplasmosis in a patient with nonspecific febrile illness and thrombocytopenia

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Human Granulocytic Anaplasmosis (HGA) is a zoonotic tick-borne disease caused by *Anaplasma phagocytophilum*. Although there has been increasing concerns about the emergence of HGA in South Korea, its cases have rarely been described. Herein, we report a case of HGA in a patient who was initially suspected of Severe Fever with Thrombocytopenia Syndrome (SFTS). A 70-year-old man was presented with 4-day history of fever and vomiting. The patient had thrombocytopenia (127,000 count/ μ L) and low blood pressure of 60/40 mmHg, which required inotropic therapy after proper fluid resuscitation could not make a recovery. A maculopapular rash on patient's upper back was observed, while whole body examination did not reveal any evidence of tick bite lesions. Given the possibility of rickettsial disease together with SFTS as a differential diagnosis, the patient was empirically treated with doxycycline. The doxycycline treatment produced rapid clinical recovery from fever, nausea and shock. Subsequently HGA was confirmed by sequence analysis of patient's serum, and then, on 30th day of admission, seroconversion was also confirmed *A. phagocytophilum*. This case suggests that HGA should be considered in the differential diagnosis in patients with fever, thrombocytopenia but with no obvious source of infection.



An atypical case of *P. malariae* infection in a returned traveler from Rwanda

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Introduction: Malaria is caused by protozoan *Plasmodium* species. In Korea, *P. vivax* is known as endemic and other species as *P. falciparum*, *P. ovale*, *P. malariae* are occasionally reported in the returned travelers. The clinical features and the microscopic examination of the peripheral blood smear are important for the differentiation of species. We report an atypical case of *P. malariae* infection in a returned traveler from Rwanda. **Case report:** A 28-year-old woman visited emergency department due to the fever which began 3 weeks ago. Characteristically the fever occurred every three days (periodic fever) and headache, nausea and diarrhea occasionally accompanied. She returned from Rwanda 6 months ago where she stayed for 3 weeks as a missionary trip. She recalled that she got yellow fever vaccine however did not take malaria chemoprophylaxis. She lived in Yangpyeong-gun, Gyeonggi-do, which is not the endemic area of *P. vivax* infection in Korea. Her characteristic fever pattern suggested *P. malariae* infection. However *P. malariae* has not been known as endemic in Rwanda so far. And also the incubation period of our patient was unusually long as six months. We carefully examined the peripheral blood smear and found some plasmodium-infected red blood cells(RBCs) suggesting the *P. malariae* infection. Large ring form without changes in the RBC(Figure 1A) and schizont of 8 merozoites(Figure 1B) were identified. Microscopic examination and the clinical characteristics led to diagnosis of *P. malariae* infection and the patient was treated with hydroxychloroquine. Rapid diagnostic test was also negative for both *P. falciparum* and *P. vivax* antigen. Finally the PCR of blood sample confirmed the *P. malariae* infection. **Discussion:** Although *P. malariae* has not been reported in Rwanda, the clinical and microscopic characteristics of our patient strongly suggest the *P. malariae* infection. The long incubation period is usually known for *P. vivax*, however small proportion of the *P. ovale* and *P. malariae* infections are reported to have incubation period of several months. Clinical characteristics and microscopic examination is crucial for differentiation of the plasmodium species.

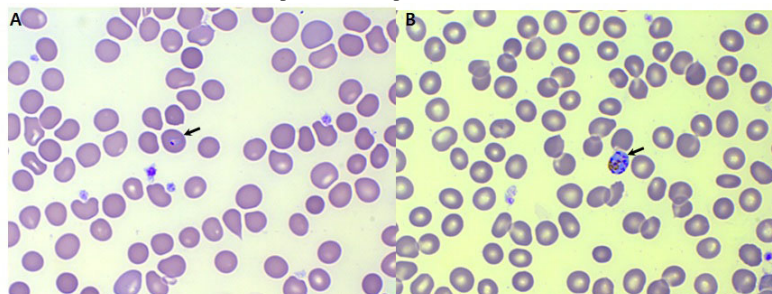


Figure 1. Peripheral blood smear. A: Trophozoite. B: Schizont.