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PHOTO QUIZ

An unusual peripheral blood smear

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A 27-year-old man from Ghana was referred to our hospital with a three-week history of fever, persistent cough and night sweats. He also reported the presence of blood in his sputum and a 20 kg weight loss. His medical history was unremarkable. He had been living in the Netherlands since 2004, working as a cleaner.

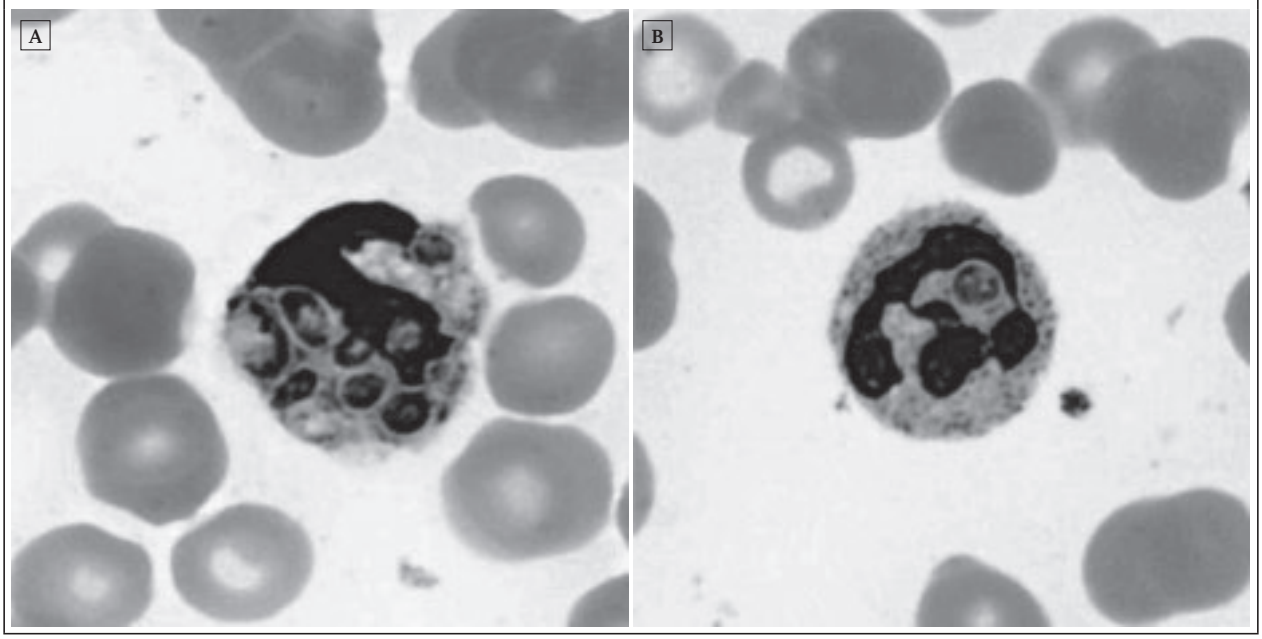
On admission his physical examination showed a blood pressure of 110/65 mmHg with a pulse of 130 beats/min and a temperature of 39.3 °C. There were multiple small lymph nodes (bilateral submandibular and inguinal); further physical examination revealed no abnormalities.

Laboratory results showed a haemoglobin of 4.7 mmol/l, mean cell volume 67.4, leucocytes 1.2 x 10^9/l, ferritin 69.401 µg/l and lactate dehydrogenase of 2967 U/l. The chest X-ray was unremarkable. Two hours after presentation the laboratory calls to report an abnormal blood smear (*figure 1*).

WHAT IS YOUR DIAGNOSIS?

See page 336 for the answer of this photo quiz.

Figure 1. *[Auteur: graag figuurtitel toevoegen]*



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ANSWER TO PHOTO QUIZ (PAGE 332)

AN UNUSUAL PERIPHERAL BLOOD SMEAR

DIAGNOSIS/DISCUSSION

The differential diagnosis of this intracytoplasmic disease with systemic symptoms is very limited and should include Histoplasmosis/*Candida glabrata*/*Penicillium marneffei* and specific forms of *Trypanosoma cruzi*. Histoplasmosis was later confirmed by lymph node biopsy in Grocott methenamine silver stain. Since solitary histoplasmosis is very rare without an underlying condition we also suspected a human immunodeficiency virus (HIV) infection. The HIV test turned out to be positive with an absolute CD4+ count of 0 and a viral load of 5 million copies per millilitre.

Histoplasma capsulatum is a fungus and the aetiological agent of histoplasmosis. It is endemic in Africa, Asia and certain parts of North, Central and South America, especially in soil contaminated with bird or bat guano.[1] Infection follows after inhalation of the conidia where they reach the alveoli. There they are rapidly recognised and engulfed by resting alveolar macrophages. They subsequently transform into budding yeasts. In these cells the yeasts grow and spread to draining lymph nodes and further into the reticuloendothelial system. Most primary infections go unnoticed, because the yeasts are killed by activated macrophages and dendritic cells. This immune response takes approximately two weeks to develop. In immunosuppressed patients, however, the yeasts grow unchecked and most commonly spread to spleen, bone marrow and adrenal glands. Clinical manifestations consist of three types: pulmonary, disseminated and chronic cavitatory forms. Seventy percent of immunocompromised patients present with disseminated disease. Symptoms vary but consist of pulmonary symptoms, fever, weight loss and hepatosplenomegaly.

Diagnosis is made by a fungal culture but this can take up to one month and can be negative in less severe cases. Detection of histoplasma antigen in urine or blood is most sensitive.[2]

Treatment for disseminated disease consists of an induction phase with liposomal amphotericin B for approximately 2 weeks followed by maintenance for 12 months with itraconazole.[2,3] Antiretroviral treatment improves the outcome of disseminated histoplasmosis[4] and it is advised to start treatment promptly.

In our patient the diagnosis was confirmed with the blood smear and by lymph node biopsy. Furthermore, we ruled out tuberculosis and malignant lymphoma. We started liposomal amphotericin B 5 mg/kg for two weeks followed by itraconazole 200 mg twice a day and after two weeks we started him on highly active antiretroviral therapy. His condition gradually improved and two months after admission the patient was doing well and had resumed his job and daily activities.

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