

Fever and persisting cough

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CASE REPORT

A 56-year-old male was referred for fever without shivers (38.7 °C) with a daily spike in the evening and a non-productive cough for six weeks. The symptoms had started two weeks after returning from Boston, USA. In the past year he stayed in Singapore, Cyprus and China. Except of some mild dyspnoea during exercise there were no other complaints and no history of recent diarrhoea. He had already been treated with budesonide, amoxicillin-clavulanic acid and clarithromycin without any effect before referral to our hospital. Medical history showed an inguinal hernia correction and malaria 35 years ago. On physical examination he appeared well. His blood pressure was 122/80 mmHg, the pulse 88 beats/min, and temperature 37.0 °C. Further examination revealed no abnormalities.

Laboratory findings showed an elevated C-reactive protein of 133 mg/l (normal <5 mg/l), elevated leucocytes of $13 \times 10^9/l$ (normal $4-10 \times 10^9/l$) and mild anaemia (haemoglobin 7.4 mmol/l). Cholestatic liver enzymes were elevated: alkaline phosphatase 222 U/l, gamma-glutamyltransferase 205 U/l (normal ≤ 120 and ≤ 55 respectively), with minor elevation of alanine aminotransferase (ALAT 72 U/l) and normal bilirubin values. Blood gas analysis (without additional oxygen): pH 7.47, pCO₂ 4.4 kPa, pO₂ 11.6 kPa, saturation 97%, and HCO₃ 24 mmol/l. Chest X-ray was unremarkable apart from a slight elevation of the right hemidiaphragm.

The blood test for malaria was negative. Serology for *B. pertussis*, *L. pneumophila*, *C. burnetii*, syphilis, Epstein-Barr virus and human immunodeficiency virus were negative. Test results for antibodies to cytomegalovirus (CMV) were positive for IgG and IgM. Since IgM antibodies can be falsely positive or may remain positive for a long time and because there was no lymphadenopathy or a mononuclear shift in his white blood cells, we did not consider an acute CMV infection as the cause of his fever. Blood cultures remained negative.

Because analysis in the outpatient clinic had not revealed a diagnosis, the case could be considered fever of unknown origin. An ultrasound of the abdomen and a ¹⁸-Fluoro-deoxyglucose (FDG) PET scan were ordered.^{1,2} Because of logistics, the FDG-PET scan results were available before the ultrasound was performed.

Figure 1.



WHAT IS YOUR DIAGNOSIS?

See page 464 for the answer to this photo quiz.

DIAGNOSIS

The PET scan showed a large 'cold' lesion (diameter: 13 cm) in the right liver lobe with slight activity around the border lines. These results suggested a liver abscess. Ultrasound examination of the liver showed a large abscess. To rule out a pyogenic liver abscess aspiration of the abscess was performed. Bacterial cultures were negative; however, polymerase chain reaction on drainage material was positive for *Entamoeba histolytica*.^{3,4} Serology for *E. histolytica* (IgG) was positive as well (titre: 1:3200). He was treated with oral metronidazole 750 mg three times a day for ten days, followed by paromomycin 500 mg three times a day for ten days. He made a full recovery. This is the first report using FDG-PET scan for the diagnosis of an amoebic liver abscess of the liver. The pathology of an amoebic liver abscess is a central area of necrotic hepatocytes with no inflammatory component, surrounded by a vascular oedematous zone with compression of the liver parenchyma and a rim of connective tissue, with

an inflammatory infiltrate and amoebic trophozoites. Persisting cough can be a sign of amoebic liver abscess in patients with fever of unknown origin caused by diaphragm stimulation. It is important to consider *E. histolytica* in travellers returning from countries where *E. histolytica* is endemic.

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