

# A rash decision

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## CASE REPORT

A 46-year-old man presented in our outpatient HIV clinic with a seven-day history of a mildly itchy rash without other complaints. He had been HIV positive since 2003. Furthermore, his history included chronic hepatitis C (genotype 1b) and a scabies infection in 2007. He was not on any medication at the time of presentation. He had not travelled recently. On examination, we found a maculopapular rash (*figure 1*) on the whole body, including his face. His temperature was 37 °C. Further physical examination was unremarkable. His laboratory tests showed a CD4<sup>+</sup> lymphocyte count of  $150 \times 10^6/l$  and slightly elevated liver enzymes, with an alanine aminotransferase level of 50 U/l and an aspartate aminotransferase level of 63 U/l.

## WHAT IS YOUR DIAGNOSIS?

See page 428 for the answer to this photo quiz.

Figure 1.



## DIAGNOSIS

Although our patient had no history of a chancre, the typical maculopapular rash, in a patient known with HIV, raised the suspicion of syphilis. This diagnosis was confirmed by a rapid plasma reagin (RPR) titre of 1:128 and a *Treponema pallidum* haemagglutination assay (TPHA) titre of 1: >20,480, which were negative and 1: 320, respectively, three months earlier. To examine whether there was any central nervous system (CNS) involvement a lumbar puncture was performed which showed 30 leukocytes/ $\mu$ l, a total protein level of 0.54 g/l and normal glucose levels, RPR was negative and the TPHA titre was 1:80. Our patient was successfully treated for (neuro) syphilis with four million units of intravenous penicillin every four hours for ten days. Serological titres decreased over time.

There seems to be an increased rate of early (asymptomatic) neurosyphilis among HIV-infected patients, which might be due to insufficient control of the infection. Case reports of HIV patients who developed neurosyphilis despite adequate intramuscular treatment of early syphilis prompted many physicians to perform routine lumbar punctures in all coinfecting patients.<sup>1</sup> However, diagnosing neurosyphilis in HIV patients is difficult since pleocytosis and elevated cerebrospinal fluid (CSF) protein levels are common findings in HIV-infected patients.<sup>2</sup> Furthermore, RPR testing has a high specificity but a low sensitivity. TPHA testing is very useful when it is negative but a positive titre can falsely imply CNS

involvement, since antibodies can cross the blood-brain barrier. Therefore, deciding who should undergo a lumbar puncture is currently one of the most controversial issues in the management of coinfecting patients. The Centers for Disease Control and Prevention and most experts now agree that CSF examination must be performed in HIV-infected patients who have late latent syphilis, syphilis of unknown duration, neurological signs or symptoms, or suspected treatment failure.<sup>3</sup> Additionally, recent studies found an association between neurosyphilis and RPR titres of >1:32 and CD4<sup>+</sup> lymphocyte count of <350  $\times$  10<sup>6</sup>/l, so CSF examination should be considered in these cases.<sup>4</sup> Further studies are warranted to establish which coinfecting patients are most likely to benefit from CSF examination.

## REFERENCES

1. Berry CD, Hooton TM, Collier AC, Lukehart SA. Neurologic relapse after benzathine penicillin therapy for secondary syphilis in a patient with HIV infection. *N Engl J Med.* 1987;316:1587-9.
2. Hollander H. Cerebrospinal fluid normalities and abnormalities in individuals infected with human immunodeficiency virus. *J Infect Dis.* 1988;158:855-8.
3. Workowski KA, Berman SM. Sexually transmitted diseases treatment guidelines, 2006. Centers for Disease Control and Prevention. *MMWR Recomm Rep.* 2006;55:1-94.
4. Marra CM, Maxwell CL, Smith SL, Lukehart SA, Rompalo AM, Eaton M, et al. Cerebrospinal fluid abnormalities in patients with syphilis: association with clinical and laboratory features. *J Infect Dis.* 2004;189:369-76.