



LETTER TO THE EDITOR

Acute human immunodeficiency virus infection presenting as mononucleosis-like illness, acute hepatitis, and aseptic meningoencephalitis

Common clinical presentations of acute human immunodeficiency virus (HIV) infection include pharyngitis, fever, fatigue, rash, and headache [1]. Mononucleosis-like illness (MLI), aseptic meningitis, hepatitis, pneumonitis, acute myocarditis, and pneumocystic pneumonia are rare manifestations, and have not been reported with concomitant occurrence [1,2]. We report herein a case of acute HIV infection with complicated presentations, including MLI, acute hepatitis, splenomegaly, and aseptic meningoencephalitis.

A previously healthy 27-year-old man, denying unprotected sexual exposure or intravenous drug use, presented with sore throat and a fever of up to 39.1 °C and lasting for 2 weeks. A physical examination revealed bilateral exudative tonsillitis with generalized maculopapular skin rash. Laboratory tests found a normal white blood cell count with a predominance of lymphocytes (Table 1). Serum biochemistry revealed elevated AST, ALT, r-GT, LDH, and CRP. Infection of hepatitis virus was excluded according to the serologic tests. Abdominal ultrasound showed parenchymal liver disease and splenomegaly. The skin rash biopsy appeared as lymphocytic vasculitis with a negative lupus band test. The patient complained of headache and conscious disturbance with several episodes of involuntary four-limb twitching lasting for 1–2 minutes, with spontaneous recovery. Computed tomography of the brain revealed no intracranial lesions. An electroencephalogram (EEG) showed diffuse cortical dysfunction. Venous ammonia level was within a normal range. The cytology of cerebral-spinal fluid showed predominant lymphocytes (75%) without bacteria. Aseptic meningoencephalitis was suspected. Acute HIV infection ranked high in the

differential diagnosis because of abrupt flu-like symptoms in combination with MLI, acute hepatitis, and aseptic meningoencephalitis. Enzyme-linked immunosorbent assay (ELISA) for antibodies to HIV-1+2 antibodies was reactive, but Western blotting for HIV Ab was reported as indeterminate. The Western blot test was repeated 6 weeks later with positive results, confirming the diagnosis of HIV infection.

Unlike the infectious mononucleosis (IM) caused by the Epstein–Barr virus (EBV), MLI can be categorized into three groups based on the pathogens involved: (1) non-EBV viral infection, including HIV, cytomegalovirus, human herpes virus, herpes simplex virus type, and adenovirus; (2) bacterial infection: group A, β -hemolytic *Streptococcus pyogenes*; and (3) protozoan causes: *Toxoplasma gondii* [3]. Acute HIV infection occurs in less than 2% of MLI patients, and is often overlooked because of its non-specific presentation [3].

The most commonly used laboratory tests for HIV infection are ELISA (for screening) and Western blot (for confirming). Patients have high blood concentrations of HIV RNA during the acute phase of infection, but the ELISA and Western blot tests can be negative because the production of anti-HIV antibodies has just begun and not yet reached a detectable level [4]. In this situation, while the repetition of Western blot 1 month later is an acceptable policy, immediately testing plasma p24 antigen or plasma HIV RNA is highly recommended for earlier diagnosis (window period: 21–28 days with antibody testing, 16 days with p24 antigen testing, and 10–14 days with RNA testing [5]).

Table 1 Results of laboratory test.

Variable	Reference Range, Adults	On Admission
Gender		Male
Age		27
Sexual orientation		Heterosexual
Hematocrit (%)	41–53	46.1
White-cell count (per mm ³)	3900–10600	5200
Segment (%)	42–74	72.9
Lymphocytes (%)	20–56	18.8
Monocytes (%)	0–12	5
Basophils (%)	0	0
Platelet count (*1000/uL)	150–400	172
Glucose (mg/dl)	70–110	105
AST (U/L)	0–37	115
ALT (U/L)	0–41	161
r-GT (U/L)	10–71	82
LDH (U/L)	125–215	1118
CRP (mg/L)	0–5	33.1
EB-VCAG	Negative	Positive
EB-VCAM	Negative	Negative
HIV 1 + 2 Ab	Negative	Reactive
HIV Western blot	Negative	Indeterminate (became positive in 1 month follow-up)
CMV IgM	Negative	Positive
CMV IgG	Negative	Negative
HBsAg	Negative	Negative
Anti-HBs antibody	Negative	Positive
Anti-HCV	Negative	Negative
Skin biopsy		Lymphocytic vasculitis
CSF cytology		Lymphocyte 75% monocyte 25%
CSF bacteria	Negative	Negative
CSF sugar (mg/dL)	50–80	49
CSF total protein (mg/dL)	8–32	40.5
Abdominal sonography		Parenchymal Liver disease, splenomegaly

The possibility of acute HIV infection should always be kept in mind when diagnosing a patient with fever, MLI, and skin rash. Early diagnosis helps early therapeutic intervention and the prevention of a rapid spread in sexual networks.

References

- [1] Bell SK, Rosenberg ES. Case records of the Massachusetts General Hospital. Case 11-2009. A 47-year-old man with fever, headache, rash, and vomiting. *N Engl J Med* 2009;360:1540–8.
- [2] Tattevin P, Camus C, Arvieux C, Ruffault A, Michelet C. Multiple organ failure during primary HIV infection. *Clin Infect Dis* 2007;44:e28–9.
- [3] Hurt C, Tammaro D. Diagnostic evaluation of mononucleosis-like illnesses. *Am J Med* 2007;120:911.e1–8.
- [4] Pincus JM, Crosby SS, Losina E, King ER, LaBelle C, Freedberg KA. Acute human immunodeficiency virus infection in patients presenting to an urban urgent care center. *Clin Infect Dis* 2003;37:1699–704.
- [5] Constantine NT, Zink H. HIV testing technologies after two decades of evolution. *Indian J Med Res* 2005;121:519–38.

Ming-Shao Tsai

Yao-Te Tsai

Chung-Tsung Pan

Department of Otorhinolaryngology, Head and Neck Surgery, Chang Gung Memorial Hospital and Chang Gung University, Kwei-Shan, Taoyuan, Taiwan

Ku-Hao Fang*

Department of Otorhinolaryngology, Head and Neck Surgery, Chang Gung Memorial Hospital and Chang Gung University, Kwei-Shan, Taoyuan, Taiwan

Department of Head and Neck Oncology Group, Chang Gung Memorial Hospital and Chang Gung University, Kwei-Shan, Taoyuan, Taiwan

*Corresponding author. Department of Head and Neck Oncology Group, Chang Gung Memorial Hospital and Chang Gung University, Number 5, Fu-Shin Street, Kwei-Shan, Taoyuan, Taiwan.

E-mail address: b87401061@ntu.edu.tw