Acute ataxia coincident with seroconversion for anti-HIV

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Sirs: Neurological complications of chronic HIV infection, localized to both the central and peripheral nervous systems, have been frequently reported. They can be due to either opportunistic infections or direct neurotrophic effects of the virus. A small proportion of infected people become ill at the time of acute infection with the virus, showing a glandular-fever-like syndrome [4]. In some cases [3] an acute encephalopathy has been described, suggesting an acute disease involving the CNS rather than the immune system. We report the occurrence of acute ataxia in a patient with seroconversion for anti-HIV antibodies.

A 47-year-old woman was admitted to our department because of intentional tremor and gait ataxia which had developed the day before. Ten days previously she had presented to her general practitioner with fever, sore throat, headache, arthralgia, muscle pain and vaginal burning. Physical examination showed no palpable lymph nodes, two vaginal ulcers and aphtha-like lesions in the oral cavity. Neurological examination showed bilateral intentional tremor, dysmetria and ataxic gait. Papillooedema was absent and during the following days slight stupor, mild confusion and reduction of the tendon reflexes appeared. CT and MRI were normal, EEG showed slow activity in the anterior regions, and routine laboratory testing did not show any abnormality. Cerebrospinal fluid (CSF) examination revealed an elevated total white cell count of up to 107/mm^3 with lymphocyte prevalence; CSF protein reached 140 mg/dl and three oligoclonal bands were detected. ELISA for antibodies to HIV in both serum and CSF was negative. A working diagnosis of herpes encephalitis was considered and treatment with intravenous acyclovir was instituted. She was also treated with parenteral dexamethasone for 3 weeks. Within a few days, the patient recovered rapidly. No neurological abnormality was present after a 12-month follow up. No viral cause was found for the acute neurological illness as indicated by the lack of increase of IgM to herpes simplex virus (HSV), herpes zoster virus (VZV), cytomegalovirus (CMV), mumps virus and Epstein-Barr virus (EBV), with the presence of Epstein Barr nuclear antigen (EBNA), in both serum and CSF. After 4 months, she developed generalized lymphadenopathy. Examination of stored serum and CSF by Western blot analysis showed low levels of anti-HIV antibodies and the presence of HIV antigen, indicating that seroconversion for anti-HIV may have occurred at the time of her admission. ELISA and Western blot in six sequential serum samples were positive, whereas ELISA was always negative and Western blot positive on CSF (Table 1).

It is now clear that the clinical pattern of disease due to HIV may have other characteristics apart from immunodeficiency. A few cases of acute HIV infection with reversible disturbance of CNS function have been described [3]. In two patients, the illness was clearly associated with seroconversion for anti-HIV. In our case, the disease was preceded by a mild pyrexial illness, and characterized by symptoms suggesting cerebellar involvement, in addition to mild diffuse encephalitis as suggested by laboratory findings. Other possible causes of acute cerebellar ataxia can be either an acute encephalitis with perivenous demyelination secondary to the illness she had developed 10 days previously [11] or a non-HIV-related viral infection. In the first case, the lack of any increased signal intensity on MRI makes this possibility unlikely. Regarding the second hypothesis, the extensive virological investigation of both serum and CSF and the absence of palpable lymph nodes render it reasonably certain that the neurological illness was not a coincidental viral infection. Moreover, the patient presented some typical symptoms of HIV primary infection 10 days before and the unusual observation of vaginal and aphthous ulcers can be explained either as a manifestation of primary HIV infection, as previously reported in genitals or anus in homosexual men, or as pre-existing lesions, due to other viral, bacterial or fungal diseases, representing the possible portal of entry of the HIV [6]. The clinical picture of the patient suggests a direct effect of the virus on cells of the nervous system instead of an immunologically mediated aggression. Neurons can be a specific target of HIV neurotropism, as they present surface receptors analogous to CD4$^+$ lymphocytes [2, 5, 8, 10, 12]. Moreover, neurotropism could be associated with special HIV variants with neurotropic properties acquired by mutation. Alternatively, the clinical presentation could be due to the specific localization of microglia HIV-1 infected cells in the dentate nucleus [9]. In addition, monocytes and macrophages have been detected as favourite target cells within the CNS. Thus the infected monocytes or macrophages may serve as a vehicle for the HIV to cross the blood-brain barrier, and that would be possible at any time in the course of the disease, resulting in early, concomitant or late complications in the nervous system [1, 7]. Acute ataxia coincident with seroconversion for anti-HIV is uncommon, but it seems prudent to consider it a possibility even in subjects with no apparent risk for AIDS.

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Table 1. Serum and CSF viral antibodies and HIV antigen

Date	Day of illness	HIV-Ag	Anti-HIV		Anti-CMV		Anti-HSV		Anti-VZV		Anti-EBV-VCA		Anti-EBV	
			ELISA	W. B.	IgM	IgG	IgM	IgG	IgM	IgG	IgM	IgG	EA	EBNA
CSF														
27 September 1989	+2	±	−	−	<0.2	<1.25	<0.2	0.2	<0.2	<0.2	−	1:10		−
3 October 1989	+8	−	−	p24 p53–55	<0.2	<1.25	<0.2	0.2	<0.2	<0.2	−	1:20		−
18 October 1989	+23	−	−		<0.2	<1.25	<0.2	<0.2	<0.2	<0.2		1:10		
23 October 1989	+28	−	−		<0.2	<1.25	<0.2	<0.2	<0.2	<0.2	−	<1:10	−	−
Normal values		−		−	≤0.2	≤1.25	≤0.2	≤0.2	≤0.2	≤0.2	−	≤1:10	−	−
Serum														
27 September 1989	+2	±	−	p24 p53–55	0.3	8	<0.2	1.6	<0.2	1.2	−	1:320		+
3 October 1989	+8	−	±	p24 p53–55	0.3	7	<0.2	1.1	<0.2	0.7	−	>320		+
10 October 1989	+15				0.3	12	<0.2	1.4	<0.2	1.0		>320		
18 October 1989	+23	−	+		0.2	12	<0.2	1.3	<0.2	0.8		>320		
23 October 1989	+28	−	+		<0.2	6	<0.2	1	<0.2	0.7	−	160	−	+
2 March 1990	+158	−	+	p15, p24 p31, p41 p53–55 p64 gp120 gp160										
5 March 1990	+160				<0.2	8		−			−		+	+
Normal values		−	−	−	≤0.2	≤1.25	≤0.2	≤0.2	≤0.2	≤0.2	−	≤1.10	−	−

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