



Strongyloides stercoralis and HTLV-1-associated myelopathy: a case report

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Introduction

The human T cell lymphotropic virus type 1 (HTLV-1) is the causative agent of inflammatory immune-mediated disorders of the central nervous system (CNS), including the progressive myelopathy called HTLV-1-associated myelopathy or tropical spastic paraparesis (HAM/TSP)¹. The infection has a worldwide distribution and is endemic in the Caribbean and South America. Women with low educational and socioeconomic levels are primarily infected and they are more likely to develop HAM/TSP. HTLV-1 is transmitted by sexual contact, contaminated blood products and breastfeeding².

A relationship between HTLV-1 infection and *Strongyloides stercoralis* has been reported: the frequency of helminthic infection is 23% in HTLV carriers, but it is low in patients with HAM/TSP (only in 3%)³.

Case report

A 44-year-old Peruvian woman presented with a three months history of stiffness of right leg and difficulties in walking. She complained **painful cramps** in the lower limbs during the night. Neurological examination revealed **hyperreflexia** with bilateral patellar clonus and **Babinski's sign**.

Blood tests showed **hypereosinophilia**. A brain and spinal magnetic resonance imaging (MRI) revealed **T2-hyperintense areas** at the level of the upper and middle cerebellar peduncles, with contrast-enhancement (Fig.1). Cerebrospinal fluid examination (CSF) was normal; oligoclonal bands in serum and CSF were absent. Diagnostic procedures, including antineuronal antibodies (Anti-Yo, Hu, Ri, amphiphysin and GAD), tests for celiac disease, screening of vasculitis, polymerase chain reaction (PCR) amplification of viral (CMV, EBV, HSV1/2, VZV) and BK DNA from CSF, resulted negative.

Since serum hypereosinophilia is common during nematode infections, stool samples were collected and Rhabditiform larvae of *Strongyloides stercoralis* were detected.

Moreover, patient was tested for the presence of HTLV-1 and HTLV-2 antibodies in serum (Fig. 2). HTLV-1 Western blot tests were positive for gag, pol and env (open reading frames coding viral proteins).

The patient was treated with steroids and physical exercises, with a complete resolution of painful cramps and improvement of walking. Complete eradication of parasites was achieved by using Ivermectin. A complete family screening was performed (Fig. 3).

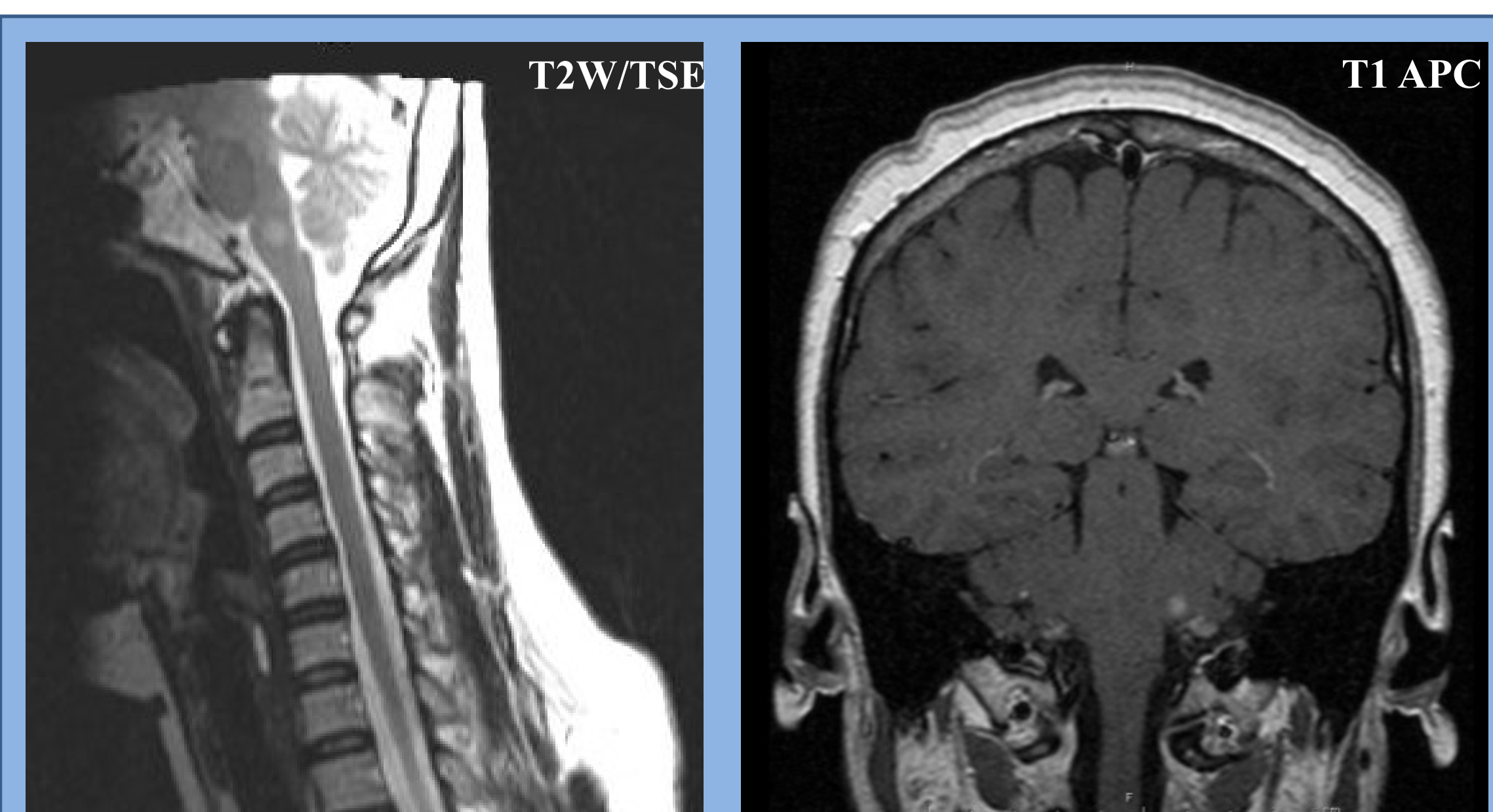


Fig.1 - Spinal and brain magnetic resonance imaging (MRI).

		Normal values
CD3%	78%	55 – 84
CD3	1872 cell/ul	600 – 2540
CD3/CD4%	45%	31 – 60
CD3/CD4	1080 cell/ul	350 – 1590
CD3/CD8%	27%	13 – 41
CD3/CD8	648 cell/ul	190 – 1140
CD19%	12%	5 – 22
CD19	288 cell/ul	40 – 700
NK%	9%	2 – 23
NK	216 cell/ul	200 – 700
LYMPHOCYTES	2400 cell/ul	1000 – 4500
Rapporto CD4/CD8	1.67	0.70 – 3.50

Fig. 2 - Population of T cells.

Serology	
HTLV-2 WESTERN BLOT	
HTLV 2 GAG	Neg.
HTLV 2 POL	Neg.
HTLV 2 ENV	Neg.
HTLV-1 WESTERN BLOT	
HTLV 1 GAG	Pos.
HTLV 1 POL	Pos.
HTLV 1 ENV	Pos.

Fig. 3 - Serology of HTLV-2 and HTLV-1.

	Age	Clinical manifestations	HTLV-1	<i>Strongyloides stercoralis</i>
Patient (F)	44	Cramps, hyperreflexia	+	+
Husband (M)	44	-	+	-
Son 1 (M)	23	-	+	-
Son 2 (M)	13	Cramps, hyperreflexia	+	-

Fig. 4 - Family screening

Discussion

HTLV-1 infection can be asymptomatic or present with various isolated or assorted evidences. Very little is known about the natural history of HTLV-1 infection and regarding the time between infection and appearance of clinical manifestations. Early neurological manifestations of HAM/TSP may be only a single symptom (e.g. cramps) and/or a physical sign (e.g. hyperreflexia).

Conclusions

Concurrent infection with parasites may be a cofactor in development of HTLV-1 disease. Stool examinations to detect helminthic infection are recommended in all patients who have HTLV-1 infection.

References

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