
Case Report

Early Psychiatric Manifestation in a Patient with Primary Progressive Multiple Sclerosis

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Multiple sclerosis can create a variety of somatic, cognitive, and behavioral symptoms. Here we report a patient with early psychiatric symptoms including depression, dementia, and catatonia, who was eventually diagnosed as having primary progressive multiple sclerosis.

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Introduction

Initial presentations of multiple sclerosis usually include weakness and/or numbness in one or both limbs, and retrobulbar or optic neuritis. Although neuropsychiatric or cognitive complications are well-recognized phenomena, their presentations have generally been considered as rare occurrences and reflect subcortical pathology. In the following report we show that premature appearance of such symptoms may dissuade an accurate judgment in the early course of the illness.

Case Report

A 46-year-old woman was referred to Razi Psychiatric Hospital with chief complaints of aggressiveness, suspiciousness, misidentification, talking to herself, insomnia, loss of appetite, social isolation, retardation, and transient episodes of forgetfulness. These symptoms started and increased steadily since eight months prior. Her primary medical investigation (four months after onset of the illness) in a general hospital could not show any etiology.

Complete blood count, liver function, and renal function tests were normal. Brain magnetic resonance imaging (MRI) had shown non-specific extension of cortical sulci and brain ventricles. Because the patient condition became worse, she was referred to our hospital for further evaluation.

During the initial assessment, she showed a disheveled facade, poor eye contact, poor speech accompanied by periodic absolute mutism, very low pitch voice tone, and lack of orientation. She seemed to be apathetic and stunned, with loosening of association and impaired immediate and short-term memory. In addition there was body stiffness the body similar to catalepsy.

Immediately after admission she was referred to the intensive care unit because of anorexia, confusion, and low-grade fever. Marked increments in serum creatine phosphokinase and lactate dehydrogenase levels, together with the aforementioned symptoms proposed the diagnosis of neuroleptic malignant syndrome and the required management was started. After treatment, creatine phosphokinase and lactate dehydrogenase serum levels gradually decreased and the fever subsided but there was no remarkable remission in stiffness and confusion. Gaze, ocular movements, corneal and gag reflexes and facial expressions were normal. Sensations of pain and temperature were intact. Plantar reflexes were in extensor status and deep tendon reflexes were hyperactive (3/2). Because of non-cooperation, cerebellar examinations were impossible.

Other laboratory tests were as follows:

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hemoglobin=10.8 g/dL, white blood cell count=7300/microliter, platelet count= 584000/microliter, and erythrocyte sedimentation rate=100 sec. There was also a trivial increment in serum levels of alanine aminotransferase (ALT) and aspartate aminotransferase (AST).

In the lumbar puncture, cerebrospinal fluid (CSF) pressure was 11 cm H₂O and in the CSF protein electrophoresis, oligoclonal bands were found. (Table 1) An investigation for the identification of tuberculosis, herpes simplex virus-1, human T-cell lymphotropic virus type 1 (HTLV1), and venereal disease research laboratory (VDRL) test by polymerase chain reaction (PCR) technique yielded negative results.

In a new magnetic resonance imaging (MRI) study, global parenchymal atrophy with compensatory dilatation of cerebrospinal fluid (CSF) spaces and multifocal demyelination of cerebral white matter was evident (Figure 1).

According to the findings several differential diagnoses could be considered. For example with respect to progressive multimodal leukoencephalopathy caused by John Cunningham virus (JCV), neither clinical nor paraclinical findings were in favor of cell mediated immunity impairment.¹ Also in central nervous system (CNS) vasculitis the CSF profile is abnormal in all proven cases of primary vasculitis. However, in this patient the CSF pressure, cell count, and culture, similar to other parameters such as anti-neutrophil cytoplasmic antibody (ANCA) with its two main classes (cANCA, pANCA), anti cardiolipin antibody (ACLA, type IgG&IgM), fluorescent antinuclear antibody (f ANA), Venereal Disease Research Laboratory (VDRL) antibody test, and HTLV1 (in serum and CSF) all were within normal limits.

On the other hand, based on a negative family history, lack of multiorgan involvement, absence of neuropathy and myopathy, and episodes of lactic acidosis, and normal serum creatinine kinase, lactate, and pyrovate; the diagnosis of mitochondrial encephalopathy was not justified.

Similarly, because of negative serum and CSF VDRL, the diagnosis of tertiary syphilis could not be justified.¹

Ruling out neurosarcoidosis however may be extremely difficult, especially when it occurs as an isolated finding. According to data in 17% of such cases cognitive dysfunction is the main clinical symptom.^{2,3} Clinical studies suggest a rate of 5% CNS involvement in sarcoidosis.^{4,5}

In the patient a lack of mediastinal or hilar adenopathy on a chest radiography, interstitial lung disease (pulmonary fibrosis), erythema nodosum, uveitis, skin lesions, hypercalcemia, multisystem disease, and granulomas of any organ, was against the diagnosis of sarcoidosis.⁶

According to the diagnostic criteria for multiple sclerosis proposed by McDonald and co-workers in 2001,¹ insidious neurological progression, indicative of primary progressive multiple sclerosis could be supposed considering the oligoclonal bands in the CSF and diagnosis of more than 9 plaques in the white matter plus one paraventricular and one juxta-cortical lesion, and also the progressive nature of the patient's condition.

Finally, according to the aforementioned history and criteria, the diagnosis of primary progressive multiple sclerosis was proposed for the patient.

Discussion

The onset of multiple sclerosis is usually between the ages of 20 and 40 years.^{1,6,7} Weakness, lack of coordination, impaired vision and speech are the most prevalent complaints of such patients.^{4,8-10}

Three psychological symptoms which are prominent features of multiple sclerosis have been listed as: mental depression, stupid indifference, and unjustified foolish laughter.⁶ Other plausible psychiatric symptoms in multiple sclerosis are: emotional lability, dementia, euphoria, personality changes, and rarely psychosis.^{6,7}

Table 1. Profile of oligoclonal bands that were found in protein electrophoresis of the CSF

Fraction	%	mg/dL	Reference range (mg/dL)
Prealbumin	2.3	1.7	2.0 – 7.0
Albumin	65.5	47.2	45.0 – 76.0
Alpha-1-globulin	6.8	4.9	1.1 – 7.0
Alpha-2-globulin	3.7	2.7	3.0 – 12.0
Beta globulin	0.8	0.6	7.5 – 18
Gamma globulin	20.9	15	3.0 – 13.0
Total	100	72	—



Figure 1. Global parenchymal atrophy with compensatory dilatation of CSF spaces, and multifocal ischemic demyelination of cerebral white matter

Table 2. Summary of major studies illustrating psychiatric presentations of multiple sclerosis

Authors	Titles	References
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Abrupt attacks of neurological deficits, lasting a few seconds or minutes which may repeat many times a day, are an occasional but well-recognized feature of multiple sclerosis that can be diagnosed erroneously as conversion.⁸

Case reports of coincident multiple sclerosis and schizophrenia-like syndromes were common in the first half of the 20th century. But because current diagnostic criteria (DSM-IV-TR and ICD-10)⁷ do not allow a diagnosis of schizophrenia

whilst a specific organic abnormality is present and also because delusions and hallucinations can be seen in any brain injury, hence many of these kinds of case reports probably do not actually represent schizophrenia (Table 2).⁶

In the patient, an early psychiatric presentation in addition to negative findings in her primary medical investigations deferred a precise diagnosis of the illness. The present case emphasizes on ruling out other neurological and/or medical morbidities by clinicians, particularly when they are evaluating atypical psychiatric symptoms.

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