Multiple sclerosis and its psychiatric symptomatology – a case report

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ABSTRACT

Multiple sclerosis (MS) is a chronic disease with motor, cognitive, and other neuropsychiatric manifestations. Cognitive symptoms include impairments in attention, information processing efficiency and speed, executive functions, and long-term memory. Cognitive impairments are independent of the duration of the disease and are very little associated with neurological manifestations. Most MS patients need psychiatric treatment, usually for a cognitive or an affective disorder. Therapeutic management includes treatment of acute exacerbations, symptomatic treatment, and disease-modifying treatment/biological therapies. This case presentation aims to emphasize the need for interdisciplinary collaboration between psychiatrists and neurologists when facing the psychiatric manifestations of MS.

Our patient is a 52-years old man who presented to our clinic with suicidal ideation with plan and method, depressive mood, multiple delusions, affective inversion towards family members, severe anxiety, and irritability, symptoms that led to significantly diminished functionality. He also presents neurological symptoms with severe damage to the motor area. MS is a chronic, progressive disease with well-known neurological symptoms. However, the psychiatric manifestations are often overlooked. MS is thought to be an autoimmune disorder in which the body’s immune system attacks the myelin sheath that protects nerve fibers, resulting in inflammation and damage, eventually leading to a loss of function. The psychiatric manifestations of MS can be just as debilitating as the physical symptoms and significantly reduce the quality of life. Therefore, an interdisciplinary approach between specialists in psychiatry and neurology is often needed to provide patients with the most appropriate medical care.

Keywords: multiple sclerosis, autoimmune disorder, neuropsychiatric manifestations, cognitive impairments

INTRODUCTION

Multiple sclerosis (MS) is a chronic disease that affects the central nervous system, characterized by inflammatory and immunological responses that lead to demyelinating lesions, loss of neuronal mass and gliosis. Clinical manifestations range from a benign medical condition to a rapidly progressive incapacitating disease [1,2]. It presents with four types of evolution: the recurrent remissive form (the most common, approx. 85% of patients), secondary progressive, primary progressive (approximately 15% of cases, with a late onset, around the age of 50, a form with faster evolution of the disability) and progressive-recurrent. The cause is still unknown, with several theories involving genetic predisposition and environmental factors [3].

Clinical manifestations of MS include multiple signs and symptoms, such as optic neuritis, muscle weakness, paresthesia, dioplia, ataxia, vertigo, paroxysmal attacks, disorders of the lower urinary tract, Lhermitte’s signs, blindness, facial paralysis, sexual disorders, epilepsy, cognitive dysfunction (memory loss, impaired attention, difficulties in executive functions, impaired ability to manage and solve simple problems, slowing of the ability to process information, issues in switching between cognitive functions), and about half of the patients with MS are diagnosed with depression, often manifested as fatigue [1,3].

Psychiatric comorbidity has long been recognized as a concern in MS population, having an important impact on quality of life [4]. Approximately 75% of
MS patients present psychiatric manifestations, the most common being cognitive, affective and personality changes [5,6]. For patients with a progressive course and greater neurology disability, more psychiatric symptoms are identified with a more severe intensity [7].

CASE REPORT

We present the case of a 52-year-old man brought by his wife to the Psychiatric Emergency Department for suicidal thoughts with plan and method and two interrupted suicide attempts (by defenestration and strangulation). Moreover, he presented delusions of persecution and prejudice, aggressive speech and behaviour towards family members in the context of marked perceptual disturbances and delusional interpretation, irritability, and irascibility. His mood was depressive, and he displayed anhedonia, hypobulia, severe anxiety and social withdrawal, in addition to prominent attention and memory disorders and significant difficulties in self-care. He also stated a disturbed sleeping pattern, especially during the week before the presentation. He was immediately admitted to our clinic.

Medical history

The neuropsychiatric symptomatology started approximately three years ago, with the onset of a dyskinetic syndrome with progressive evolution, associated with a parkinsonian-type symptomatic picture: bradykinesia, axial and upper limb stiffness, walking with small steps and a broad base of support, cerebellar elements of intentional tremor and balance disorders. In addition, there has been a progressive change in the affective state (depressive mood, lability of affect, irritability, anxiety, ideas of self-devaluation, uselessness, incurability, and suicidal thoughts with plan and method). One year after this symptomatology began, he was diagnosed with depressive disorder with cognitive impairment and treatment with tiagmine, alprazolam, mirtazapine and tiapride was started, to which the patient was partially compliant. However, the symptomatology worsened progressively, with rapid deterioration in the last three months and aggravated neurological and psychiatric symptoms.

Concomitantly with the neuropsychiatric onset, the patient was also diagnosed with retrobulbar optic neuropathy of the left eye.

The patient has had essential tremor since the age of 16 (possible juvenile parkinsonism), with familial aggregation on the maternal line, that was therapeutically neglected until last year when the patient began treatment with Propranolol 10 mg/day on the neurologist’s recommendation.

PSYCHIATRIC EXAMINATION

During his admission, the patient was partially cooperative, his clothes were appropriate to sex and age, but in discord with the season (despite the high temperature, the patient had thick clothing and stated that he was cold). Moreover, the patient had difficulty caring for himself and preserving his hygiene. His motor behavior was impoverished, and he had a sad appearance, dull gaze, tense posture and axial tremor. He established and maintained eye contact relatively easily during the interview; mental engagement was difficult to initiate and maintain. He was disoriented in terms of time (he claimed it was winter; the year 2017, “I have been here for about one year”) and space (“we are at home, in the village”, “the children are upstairs, and the in-laws are in the next room”); his ability to concentrate was reduced, and he could not shift his attention to various tasks. His memory was also severely impaired, outlined in a delusional context, with short- and long-term hypomnesia and a tendency to confabulate (he stated that he has been hospitalized for about one year, with quasi-total amnesia of the events of the previous day; he no longer recognized the other patients). His attention and speech were centered on the disharmonious relationship with the in-laws, with frequent memory gaps and anomia. Spontaneous speech was present but monotonous, with slowed rhythm and flow of ideas. His voice was trembling, and he had a tendency for musing. He often showed verbal perseveration, repeating short stories about the conflictual situation at home or the poor economic situation. The speech was tangential and circumstantial, with a tendency for disorganization. When given specific tasks, he needed repetition of the instructions to respond correctly. His mood was depressed, and he showed hypobulia (“I am still living, unfortunately”, “I am tired of living, it is not worth it anymore”) and anxiety about activities involving movement – constant fear of falling and embarrassing himself. He had delusions of persecution, prejudice and ruin (“I walk down the street and the world points at me because I am bitter and I do not have a penny”, “they all stole from me, they stole from my shop until I did not have a single penny left”, “all my friends disappeared after I had no more money to help them”, “my mother-in-law is crazy and drinks, so is my father-in-law, they will not let me leave the house, the mouse comes in and beats me”, “all my friends disappeared after I had no more money to help them”, “my mother-in-law is crazy and drinks, so is my father-in-law, they will not let me leave the house, the mouse comes in and beats me”, “I have not left the house for years because I am afraid of my in-laws, they do not even let me go to the bathroom”). The thought content had depressive tendencies (ideas of futility “I am a baby, I can barely walk, I have to hold on to my wife and walk slowly because otherwise, I fall”, “I am very backward, I cannot work at all”, and self-accusation). In contrast, he displayed delusional ideas with erotomania con-
tent outlined against the background of an inappropriate affect towards the in-laws. He stated persistent suicidal ideation with plan and method (“I wanted to go and throw myself off a cliff, but a neighbour found me and stopped me”, “I wanted to put the loop around my neck and die, but the boy said that he will kill himself if I die”, “I went to the cemetery to dig a grave”). He had previously attempted suicide twice. The patient had false recognitions in the context of delusional episodes (he looked out the window and said that he saw the neighbours passing by, he saw the in-laws who “also walk around here [in the hospital] sometimes, they do not even let me go to the toilet”). He had low functionality, irritability, and social withdrawal secondary to his physical limitation, but also because of his delusional system and distorted image of his family. Every morning during clinical rounds, he would accuse insomnia with restless sleep; however, the clinical staff observed a restful sleep pattern, with an average of about 8 hours per night. His appetite and hydration were low. He showed partial insight into his mental disorder.

Considering the important neurological picture that accompanies the psychiatric symptomatology, an additional neurological examination was requested.

**Neurological examination:** The patient was conscious, cooperative, self-oriented, partially orientated in time. He had postural tremor of the hands, osteotendinous reflexes more vivid in the upper limbs (right more predominant than left), left patellar reflex more pronounced than on the right, bilateral diminished Achilles’ reflex, wide-based atactic gait, instability on Romberg maneuver (no myoarthropathic or bilateral index-index errors), dysdiadochokinesia, blindness in the left eye, hearing loss in the left ear.

To complete the investigations and to make a complex differential diagnosis, a wide series of clinical and paraclinical investigations were required.

**Inflammatory tests:** Fibrinogen and reactive C protein are regular. The erythrocytes sedimentation rate increases during hospitalization: values of 8mm/1h, 20mm/1h in three days and 50mm/1h in about three weeks.

**Serological tests:** HIV1/HIV2 negative, RPR negative, Borrellia IgM (1.89 U/ml) negative, Borrellia IgG (16.59 U/ml) negative.

**Immunological tests:** ATPO, cANCA, pANCA, Antibodies against double-stranded DNA, anti-La antibodies – within normal limits. Weakly positive anti-Ro antibodies (28,872 IU/ml).

To exclude Wilson’s disease – normal levels of ceruloplasmin.

**Psychometric evaluation:** with no significant changes in scoring after three months during re-evaluation.

- MMSE: 20/30 (orientation 5/10 points, recording information 3/3 points, attention, and calculation 4/5 points, reproduction of information 1/3 points, language 7/9 points).
- HAM-D: 21 points.
- ACE-III: 50/100 points (attention 7/18 points, memory 10/26 points, fluency 11/14 points, language 16/26 points, visuo-spatial 6/16 points).

**ECG** - Sinus rhythm, regular, without significant abnormalities.

**Cardio-pulmonary X-ray** – discrete accentuation of the bilateral infrahlial and peribronchovascular type interstitial pattern.

**Cerebral MRI:** A well-defined, homogenous gandophilic formation (15/13 mm axial diameters) located in the left pontocerebellar cistern, extended in the internal auditory canal including the acoustic-vestibular bundle (suggestive for an acoustic neuroma). The acoustic-vestibular nerves on the left side have standard configuration, path and signal in both the cisternal and intracanalicular portions. Multiple areas with hypersignal T2 and FLAIR, hyposignal T1, without diffusion restriction confluent in diffusely contoured periventricular fronto-temporoparietal bilateral, capsulo-lenticular (long axis 9 mm) and at the level of the left cerebellar hemisphere (6 mm) were present. Among them, one was in front of the left periventricular and presented a fine peripheral contrast uptake in the form of a complete ring – atrophic corpus callosum with similar signal abnormalities. No brain lesions of an acute nature were visible in diffusion – minimal changes in magnetic susceptibility in the globus pallidus, bilaterally (microlcalkifications). The ventricular system was located on the midline, with moderately increased dimensions. Enlarged pericerebral and pericerebellar fluid spaces. Minimal circumferential thickening of the mucosa of the maxillary sinuses (and closed accumulation in the left mandibular recess) frontal, sphenoid and ethmoid cells bilaterally was present. Dextrocon cave nasal septum. Normally pneumatized mastoid cells.

**After an extensive re-evaluation, the diagnostic of multiple sclerosis was raised by the neurology team.**

**Pharmacological treatment:** Throughout the hospitalization, the patient received treatment with antidepressant SSRI Sertraline (up to 100mg/day), antipsychotic with antidepressant role - Quetiapine (progressively introduced up to 400mg/day) and an antagonist of glutamate NMDA Receptors – Memantine up to 10mg/day.

Despite medical support and pharmacological therapy, his symptoms showed only a mild improvement, with a slightly ameliorated mood and a re-
duced pressure of speech when talking about his family. He could focus on other topics during the conversation and displayed less mental fatigue. He did not mention suicidal ideation spontaneously, but he still had recurrent thoughts of death. His sleeping pattern improved, and he managed to eat and hydrate with little help from the medical carers. However, his delusions persisted and continued to cause significant distress.

He is discharged from our clinic to a neurology department for observation, further investigations, and appropriate neurological management, in addition to psychopharmacological treatment.

**Differential diagnosis**

Considering the complex picture of both neurological and psychiatric symptomatology, an interdisciplinary approach was necessary. Reflecting on the MS diagnosis and its clinical implications, the psychiatric differential diagnostic implied: organic affective disorder, organic personality disorder and organic psychotic disorder. Also, given the cognitive deficits, a differential diagnosis with other types of dementia is required.

**CONCLUSIONS**

MS is a chronic, progressive disease with well-known neurological symptoms. However, the psychiatric manifestations are often overlooked. MS is thought to be an autoimmune disorder in which the body’s immune system attacks the myelin sheath that protects nerve fibers, resulting in inflammation and damage, eventually leading to a loss of function. The psychiatric manifestations of MS can be just as debilitating as the physical symptoms and significantly reduce the quality of life. Therefore, an interdisciplinary approach between specialists in psychiatry and neurology is often needed to provide patients with the most appropriate medical care [5].

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