

Confused with ataxia and urinary and fecal incontinence

Vincent Wong, OMS IV, J. Brandon Birath, PhD, and Robert Dasher, MD



How would you handle this case?

Answer the **challenge questions** throughout this article

Ms. S, age 46, has difficulty walking and a wide-based gait, and is incontinent and paranoid. She reports no medical or psychiatric history. How would you evaluate her?

CASE Paranoia, ataxia

Ms. S, age 46, is admitted to the hospital for cellulitis and gait disturbance. She has been living in her car for the past week and presents to the local fire department to get help for housing. She is referred to this hospital where she was found to have cellulitis in her buttock secondary to urinary and fecal incontinence. She also was noted to have difficulty ambulating and a wide-based gait. Two weeks earlier, a hotel clerk found her on the floor, unable to get up. Ms. S was seen in a local emergency room (ER) and discharged after her glucose level was found to be normal.

At admission, she has an intact sensorium and is described as disheveled, illogical, rambling, and paranoid. Her mental status exam shows she is alert and oriented to person and time, with guarded and childlike behavior. Her affect/mood is irritable and oddly related, and her thought processes are concrete and simple with some thought-blocking and paranoid content. She denies thoughts of harming herself or others, and her insight is limited and judgment is poor.

Neurology is consulted to evaluate her gait disturbance. Ms. S has decreased muscle bulk in both calves, with brisk knee reflexes bilaterally. CT imaging shows nonspecific scattered periventricular white matter hypodensities consistent with microvascular ischemic diagnosis, but a demyelinating process could not

be ruled out. Ms. S reports that the gait disturbance began in childhood, and that her grandmother had the same gait disturbance. Neurology recommends an electromyogram and MRI.

During her stay in the hospital, she is unwilling to cooperate with exams, declines to answer questions regarding her past, and appears suspicious of her acute care treatment team. The psychiatric team is consulted for evaluation of her paranoia and “seeming disorganization,” and she is transferred to the psychiatric unit. She appears to be repulsed by the fact that she was in a psychiatric ward stating, “I don’t belong here” and “I’m scared of the other people here.” She denies any psychiatric history, previous hospitalizations, or substance use, and no documentation of inpatient or outpatient care was found in the county’s computerized record system. Although she is willing to take a small dose of tranquilizer (eg, lorazepam) she refuses to take antipsychotic medications saying, “My mother told me not to take [antipsychotics]. I’m not psychotic.”

Mr. Wong is an osteopathic medical student, Western University of Health Sciences, Pomona, California. Dr. Birath is Health Sciences Clinical Instructor, and Dr. Dasher is Associate Clinical Professor of Psychiatry, University of California, Los Angeles, Los Angeles, California.

Disclosures

The authors report no financial relationship with any company whose products are mentioned in this article or with manufacturers of competing products.



Discuss this article at
[www.facebook.com/
CurrentPsychiatry](http://www.facebook.com/CurrentPsychiatry)

What is your diagnosis at this point?

- a) normal pressure hydrocephalus
- b) Charcot-Marie-Tooth disease
- c) schizophrenia spectrum disorder
- d) multiple sclerosis (MS)
- e) vascular dementia
- f) cord lesion compression

The authors' observations

The neurology team initially suspected Charcot-Marie-Tooth disease because her clinical presentation included pes cavus, distal lower extremity weakness, and lower extremity muscle atrophy with a self-reported family history of similar gait disturbance, all of which are consistent with Charcot-Marie-Tooth disease.

Subcortical syndrome—a feature of vascular dementia—is characterized by focal motor deficits, gait disturbance, history of unsteadiness with frequent falls, urinary symptoms, personality and mood changes, and cognitive dysfunction.¹⁻³ Subcortical syndrome is caused by chronic ischemia and lacunar infarctions that affect cerebral nuclei and white matter pathways.¹ On imaging, subcortical vascular dementia is characterized by leukoaraiosis, which are hypointense spherical-like lesions on CT and hyperintense lesions in periventricular areas on T2 MRI.⁴

Although normal pressure hydrocephalus could be suspected given her clinical presentation of the Hakim-Adams triad (ie, “wacky, wobbly, and wet”), her head CT did not show any changes consistent with this condition.

Her clinical presentation does not align with schizophrenia spectrum disorder because of her history of higher functioning, acute later onset, and the absence of hallucinations, fixed delusions, or markedly disorganized speech. Although she is paranoid of her surroundings, her delusions were ill-formed. A cord lesion compression cannot be ruled out, and MRI is required urgently.

HISTORY High functioning

When asked, Ms. S states that she was admitted to the hospital because “someone who looked like a fake police officer [a member of the fire department] told me it was nice here.” She indicates that she initially thought it would be a nice place to live temporarily but later regretted coming after realizing that she was in a psychiatry unit. Available documentation from her recent hospitalization indicated that she was living in a motel on her own. Ms. S says that she works as an actress and has had minor roles in famous movies. She says that she studied at a well-known performance arts school and that her parents are famous musicians; however, she refuses to identify her parents or give permission to contact them—or any other collateral informant—because she is embarrassed about her current situation stating, “They would never believe it.”

During this interview, Ms. S appears confused as well as disorganized—which was a challenge to clearly delineate—disheveled, and guarded with hypoverbal and hypophonic speech. Her thought process is circumstantial, and she seems to be confabulating. She denies visual or auditory hallucinations but appears paranoid and states that she thinks we are experimenting on her. Except for the neurological exam, the rest of her physical exam is within normal limits. Urine toxicology screen and labs are negative except for a positive antinuclear antibody homogenous pattern with a titer of 1:640; B₁₂ vitamin levels are not tested.

MRI is ordered, however, she does not consent to the scan saying, “It’s creepy, I don’t want people looking at my brain.” The team makes several attempts to encourage her for consent but she refuses. Because of the clinical urgency (ie, possible cord compression) and her refusal to provide a surrogate decision maker, the team felt the situation is urgent, confirmed by 2 physicians, which led them to perform the MRI on an emergent basis. The MRI reveals multiple periventricular, juxtacortical, infratentorial, and likely

Clinical Point

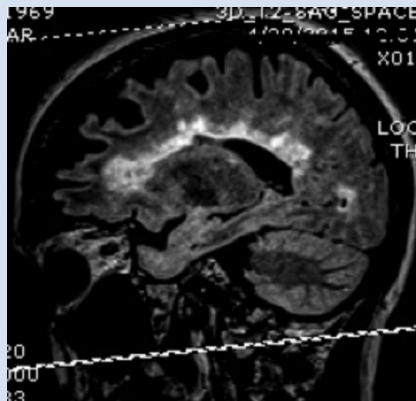
Psychosis in the presence of white matter demyelination could be associated with autoimmune, vascular, or nutritional disturbances

Clinical Point

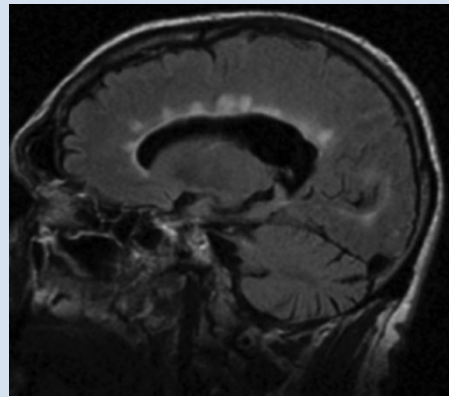
Systemic lupus erythematosus has been associated with psychosis and neuropsychiatric symptoms in 14% to 75% of patients

Figure

Ms. S's MRI scan



A



B

- A) The patient's Dawson's finger on T2-FLAIR MRI
- B) T2-FLAIR MRI image of classic periventricular white matter lesion

Figure B courtesy of Dr. Frank Gaillard, Radiopaedia.org, rID: 35916

cervical spinal cord T2 hyperintense lesions (Figure).

What would be your differential diagnosis at this time?

- a) acute disseminated encephalomyelitis (ADEM)
- b) systemic lupus erythematosus
- c) multiple sclerosis
- d) vascular dementia
- e) vitamin B deficiency

The authors' observations

Psychosis in the presence of white matter demyelination could be associated with autoimmune, vascular, or nutritional disturbances. Deficiencies in vitamins B6, 9, and 12 (pyridoxine, folate, cobalamin) have been shown to cause neuropsychiatric symptoms and white matter lesions.⁵ Low levels of vitamins B6, 9, and 12 are associated with elevated homocysteine, which can cause small vessel ischemia

leading to white matter lesions similar to changes seen in vascular dementia.⁵ The exact pathophysiology of ADEM is unclear, however, it is thought that after an infection, antiviral antibodies cross react with autoantigens on myelin causing an autoimmune demyelinating disease. Another hypothesized mechanism is that circulating immune complexes and humoral factors increase vascular permeability and inflammation thereby opening the blood-brain barrier. Once it is open, cells such as lymphocytes, phagocytes, and microglia cause gliosis and demyelination. Case reports have described ADEM associated with psychotic features.⁶

Likewise, systemic lupus erythematosus has been associated with psychosis and neuropsychiatric symptoms in 14% to 75% of patients. Of these patients, 40% will experience neuropsychiatric symptoms before onset of lupus symptoms.⁷ One study found the most common MRI

finding in neuropsychiatric systemic lupus erythematosus was leukoaraiosis, which appeared in 57.1% of patients.⁸ Ms. S's MRI results strongly suggest a diagnosis of MS.

EVALUATION Questionable story

Ms. S appears delusional and grandiose when she meets with the psychiatry team. She states that before her hospitalization, she was an actress and could ambulate, rent a motel room, and drive a car without assistance. However, during the examination, she cannot walk without 2 staff members for support, and overall her self-reported history sounds questionable. There were several pieces of evidence that corroborate portions of her story: (1) a screen actors guild card was found among personal belongings; (2) she was transported to the ER from a local motel; (3) she had recently visited another hospital and, at that time, was deemed stable enough to be discharged.

On the Montreal Cognitive Assessment (MoCA) Ms. S scored 19/30, with deficits mainly in executive/visuospatial and delayed recall memory. An alternate form of the MoCA is administered 1 day later, and she scores 20/30 with similar deficits. After obtaining medication consent, she is given risperidone, up to 2 mg/d, and becomes more cooperative with the treatment team.

The authors' observations

Approximately 40% to 65% of MS patients experience cognitive impairment.⁹ Cognitive dysfunction in a depressed patient with MS might appear as pseudodementia, but other possible diagnoses include:

- true dementia
- encephalitis or infection
- medication- or substance-induced.

White matter demyelination is associated with subcortical dementia, which is characterized by slowness of information

processing, forgetfulness, apathy, depression, and impaired cognition. According to meta-analyses, the most prominent neuropsychological deficits in MS are found in the areas of verbal fluency, information processing speed, working memory, and long-term memory.¹⁰ Relapsing-remitting type MS patients generally have less cognitive impairment than those with the chronic progressive type of the disease.

EVALUATION Cognitive deficits

Because of her acute condition and resistance to the evaluation, a modified screening neuropsychological battery is used. During the evaluation Ms. S is guarded and demonstrates paucity of speech; her responses are odd at times or contain word-substitution errors. Hand stiffness, tremor, and imprecision are noted during writing and drawing. Results of testing indicate average-range premorbid intellectual ability, with impairments in memory and information processing speed and a mild weakness in phonemic verbal fluency. Ms. S endorses statements reflecting paranoia and hostility on a self-report measure of emotional and personality functioning, consistent with her behavioral presentation. However, her responses on other subscales, including depression and psychotic symptoms, are within normal limits. Her cognitive deficits would be unusual if she had a psychiatric illness alone and are likely associated with her positive neuroimaging findings that suggest a demyelinating process. Overall, the results of the evaluation support a MS diagnosis.

The authors' observations

Psychosis is found at a higher rate among MS patients (2% to 3%) than the general population (0.5% to 1%).⁹ Although rare, psychosis often can cloud the diagnosis of MS. Psychiatric symptoms that can occur in MS include:

- hallucinations and delusions (>50%)

Clinical Point

Relapsing-remitting type MS patients generally have less cognitive impairment than those with the chronic progressive type of the disease

Related Resources

• Paparrigopoulos T, Ferentinos P, Kouzoupis A, et al. The neuropsychiatry of multiple sclerosis: focus on disorders of mood, affect and behaviour. *Int Rev Psychiatry*. 2010; 22(1):14-21.

• Higgins A, Rafeyan R. Psychosis: is it a medical problem? *Current Psychiatry*. 2007;6(1):73-87.

Drug Brand Names

Aripiprazole • Abilify	Methylprednisolone • Medrol,
Chlorpromazine • Thorazine	Solu-Medrol, Depo-Medrol
Clozapine • Clozaril	Risperidone • Risperdal
Haloperidol • Haldol	Ziprasidone • Geodon
Lorazepam • Ativan	

Clinical Point

A review found that depression was the most prevalent symptom in MS, and that schizophrenia occurred in up to 7% of MS patients

- irritability and agitation (20%)
- grandiosity (15%)
- confusion, blunted affect, flight of ideas, depression, reduced self-care, and pressured speech (10%).¹¹

A review of 10 studies found that depression was the most prevalent symptom in MS, and that schizophrenia occurred in up to 7% of MS patients.¹² There are currently 3 theories about the relationship between psychosis and MS:

- MS and psychosis are thought to share the same pathophysiological process.
- Psychotic symptoms arise from regional demyelination simultaneously with MS.
- Psychosis is caused by medical treatment of MS.⁹

Other causes of psychiatric symptoms in MS include:

- depression associated with brain atrophy and lesions
- depression and anxiety as a result of chronic illness

- depression resulting from inflammatory changes
- corticosteroid treatment causing depression, mania, or psychosis.¹²

The link between psychosis and MS is still poorly understood and further investigation is needed.

How would you treat Ms. S?

- haloperidol
- risperidone
- corticosteroids
- selective serotonin reuptake inhibitors

Treating psychiatric symptoms in the context of MS

The literature, mainly case reports, suggests several treatment modalities for psychosis with MS. Clozapine has been shown to be beneficial in several case reports, and risperidone⁹ and ziprasidone¹³ also have been effective. Other studies recommended low-dose chlorpromazine.⁹

For MS patients with cognitive impairment, one study showed that interferon beta-1b (IFN-1b) treatment resulted in significant improvement in concentration, attention, visual learning, and recall after 1 year compared with control patients.⁹ However, there are also case reports of IFN-1b and glucocorticoid-induced psychosis in patients, which resolved after discontinuing treatment.⁹

Psychotic symptoms have been shown to resolve after corticosteroid treatment of MS.¹⁴ In another case report, mania and delusions subsided 3 days after IV methylprednisolone, whereas risperidone had no effect on

Bottom Line

A patient who presents with late-onset psychotic symptoms and has no personal or family history of psychiatric illness should suggest the possibility of an underlying neurological disorder and prompt a thorough medical workup, including imaging. A neuropsychological consultation can reveal a cognitive profile that matches a known psychiatric and medical condition. Although rare, patients with multiple sclerosis could experience neuropsychiatric symptoms, including psychosis.

psychotic features. However, it was unclear whether risperidone was discontinued when methylprednisolone was administered, therefore the specific effect of methylprednisolone is difficult to discern.¹⁵ Finally, in a case of a patient who has chronic MS for 16 years and presented with acute onset paranoid psychosis, symptoms resolved with aripiprazole, 10 to 20 mg/d.¹⁶ Because of the limited utility of case reports, there is a need for further research in medical management of psychiatric symptoms in MS.

References

- de Groot JC, de Leeuw FE, Oudkerk M, et al. Cerebral white matter lesions and cognitive function: the Rotterdam Scan Study. *Ann Neurol*. 2000;47(2):145-151.
- Tatemichi TK, Desmond DW, Prohovnik I, et al. Confusion and memory loss from capsular genu infarction: a thalamocortical disconnection syndrome? *Neurology*. 1992; 42(10):1966-1979.
- Staeckenborg SS, van der Flier WM, van Straaten EC, et al. Neurological signs in relation to type of cerebrovascular disease in vascular dementia. *Stroke*. 2008;39(2):317-322.
- Mortimer A, Likeman M, Lewis T. Neuroimaging in dementia: a practical guide. *Pract Neurol*. 2013;13(2):92-103.
- Xiong YY, Mok V. Age-related white matter changes. *J Aging Res*. 2011;2011:617927. doi:10.4061/2011/617927.
- Habek M, Brinar M, Brinar VV, et al. Psychiatric manifestations of multiple sclerosis and acute disseminated encephalomyelitis. *Clin Neurol Neurosurg*. 2006;108(3): 290-294.
- Benros ME, Eaton WW, Mortensen PB. The epidemiologic evidence linking autoimmune disease and psychosis. *Biol Psychiatry*. 2014;75(4):300-306.
- Jeong HW, Her M, Bae JS, et al. Brain MRI in neuropsychiatric lupus: associations with the 1999 ACR case definitions. *Rheumatol Int*. 2014;35(5):861-869.
- Hausleiter IS, Brüne M, Juckel G. Psychopathology in multiple sclerosis: diagnosis, prevalence and treatment. *Ther Adv Neurol Disord*. 2009;2(1):13-29.
- Thornton AE, DeFreitas VG. The neuropsychology of multiple sclerosis. In: Grant I, Adams KM, eds. *Neuropsychological assessment of neuropsychiatric and neuromedical disorders*. New York, NY: Oxford University Press; 2009:280-305.
- Kosmidis MH, Giannakou M, Messinis L, et al. Psychotic features associated with multiple sclerosis. *Int Rev Psychiatry*. 2010;22(1):55-66.
- Marrie RA, Reingold S, Cohen J, et al. The incidence and prevalence of psychiatric disorders in multiple sclerosis: a systematic review. *Mult Scler*. 2015;21(3):305-317.
- Davids E, Hartwig U, Gastpar M. Antipsychotic treatment of psychosis associated with multiple sclerosis. *Prog Neuropsychopharmacol Biol Psychiatry*. 2004;28(4):734-744.
- Thöne J, Kessler E. Improvement of neuropsychiatric symptoms in multiple sclerosis subsequent to high-dose corticosteroid treatment. *Prim Care Companion J Clin Psychiatry*. 2008;10(2):163-164.
- Hoiter S, Maltete D, Bourre B, et al. A manic episode with psychotic features improved by methylprednisolone in a patient with multiple sclerosis. *Gen Hosp Psychiatry*. 2015;37(6):621.e1-621.e2.
- Muzyk AJ, Christopher EJ, Gagliardi JP, et al. Use of aripiprazole in a patient with multiple sclerosis presenting with paranoid psychosis. *J Psychiatr Pract*. 2010;16(6): 420-424.

Clinical Point

Psychotic symptoms have been shown to resolve after corticosteroid treatment of MS

ClinicalEdge®

Digital Weekly Summaries of
Must-Read Clinical Literature,
Guidelines, and FDA Actions

ClinicalEdge is what you, the busy clinician, have asked for—succinct summaries of must-read news and clinical content with expert commentary.

ClinicalEdge also provides you with:

- ▶ Summaries archived by date and disease state
- ▶ Clinical summaries and practice guidelines
- ▶ Easy advance scrolling and navigation features
- ▶ Links to related articles, MD-IQ quizzes, and more
- ▶ FDA actions of interest to psychiatric clinicians

ClinicalEdge is updated weekly at
www.medge/currentpsychiatry.com/clinical-edge

Log on today!

Brought to you by

Current
PSYCHIATRY