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Shivali Patel
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Bassem Krayem

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Psychotic Features and Behavioral Dysregulation in a Patient with Tumefactive Multiple Sclerosis

Shivali Patel MD, Mohan Gautam DO, MS, & Bassem Krayem MD
Department of Psychiatry, Henry Ford Health System, Detroit, Michigan

Background

- Multiple sclerosis (MS) is a chronic demyelinating disease, classically characterized by lesions disseminated in time and space
- Tumefactive multiple sclerosis (TMS) is a rare variant of MS, with a prevalence of approximately 3 per 1,000,000 individuals
- Radiologic characteristics of TMS
  - Lesions >2 cm
  - Possible associated mass effect, edema
  - Open-ring enhancement
- TMS may mimic lesions of neoplastic, vascular, infectious, and inflammatory etiologies
- Clinical presentation is dependent upon location and size of lesion
- Mass-effect symptoms
  - Higher cortical deficits
  - Motor symptoms
  - Sensory symptoms
  - Cerebellar symptoms
  - Brainstem symptoms
- May also be asymptomatic
- Relationship between MS and psychiatric disorders such as mood, anxiety, substance use, and less commonly psychotic disorders has been well studied
- However, there is sparse literature on the psychiatric manifestations of TMS

Case Presentation

- 42-year-old African American woman with a chart documented psychiatric history of schizoaffective disorder depressive type
- Diagnosed with schizoaffective disorder 9 years prior to admission at an outside hospital
- Last hospitalized 6 years prior
- No hallucinations of paranoia in 3 years
- She self-discontinued haloperidol and divalproex for at least 15 months, as she felt better
- Presented to Kingwood Psychiatric Hospital initially for mood instability and irritability
- CBC, CMP, TSH were within normal limits
- Urine drug screen and urine pregnancy test were negative
- No psychosis present throughout initial hospitalization
- Improved on divalproex and was discharged on this alone
- Readmitted 2 weeks later with fears that she was pregnant
- CBC, CMP, were within normal limits
- Urine drug screen and urine pregnancy test were negative
- Psychotic symptoms
  - Affect was out-of-sync
  - Appeared to be responding to internal stimuli
  - Disorganized speech (dysphoria with abnormal prosody)
  - Disorganized behaviors (repeatedly flicking her juice bottle, laying down unprompted, walking around partially dressed)
  - Loose-tangential thought process
- No improvement after olanzapine and paliperidone were sequentially trialed
- Developed signs suspicious for catatonia, which may have been potentially related to an underlying demyelinating process
- Clinical, patient was noted to have improvement in right upper extremity weakness, gaze deviation and eye fluttering, expressive aphasia, and psychotic behavior

Imaging

- CT Head: Vasogenic edema predominantly in the left frontal lobe and basal ganglia concerning for an underlying intra-axial mass lesion
- MRI Brain: Enhancing diffusion restricted mass in left frontal lobe extending to body of corpus callosum; extensive vasogenic edema and mass-effect with rightward subfalcine herniation
- MRI Cervical, Thoracic, Lumbar spine: Negative for spinal lesions
- MRI Coronal, Thoracic, Lumbar spine: Negative for spinal lesions
- CT Abdomen Pelvis: Negative for malignancy

Case Work-up and Management

- Imaging
  - CT Head: Vasogenic edema predominantly in the left frontal lobe and basal ganglia concerning for an underlying intra-axial mass lesion
  - MRI Brain: Enhancing diffusion restricted mass in left frontal lobe extending to body of corpus callosum; extensive vasogenic edema and mass-effect with rightward subfalcine herniation
  - MRI Coronal, Thoracic, Lumbar spine: Negative for spinal lesions
- Further Neurological Work-Up
  - cEEG: No epileptiform activity
  - Paraneoplastic, vasculitis panels negative
- Disorganized behaviors (repeatedly flicking her juice bottle, laying down unprompted, walking around partially dressed)
- Urine drug screen and urine pregnancy test were negative
- cEEG: No epileptiform activity

Discussion

- No MRI brain images in our system from the time she was initially diagnosed with schizoaffective disorder
g- MRI 3 years prior to most recent admission showed cerebral atrophy, which may occur very early in the course of MS, independent of demyelination
- Patient was found to have developed other neurological symptoms after her initial schizoaffective disorder diagnosis, which may have been potentially related to an underlying demyelinating process
- Urania incontinence
- Dysphagia
- Memory loss
- Management in TMS includes steroids, agents known to cause neuropsychiatric complications
- Steroid responsive enhancing lesions represent a flare
- It is possible that our patient’s behavioral dysregulation and psychotic features were secondary to a TMS flare
- Improvement in psychosis may have been confounded by presence of aripiprazole
- Aripiprazole has been found to be efficacious in treatment of MS-related psychoses
- Mood and anxiety disorders predominate on clinical MS symptoms by up to five years
- Psychosis also found to occur before onset of MS symptoms
- Overall, this case demonstrates that psychotic symptoms, including psychosis and possibly agressivity, may also be part of the TMS prodrome

References