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## Background and Significance

- Depressive, psychotic and behavioral syndromes can herald the onset of Major Neurocognitive Disorder (MND).
- Psychiatrists are increasingly called upon to evaluate patients with complex neuropsychiatric presentations via telemedicine and many smaller community hospitals lack immediate access to specialty neurological services.
- We present a patient with poorly differentiated mood, psychotic and behavioral symptoms where the consulted psychiatrists leveraged pragmatic use of technology, local community civil commitment processes, and bedside neurocognitive examination skills to secure a unifying diagnosis of probable Binswanger's disease.

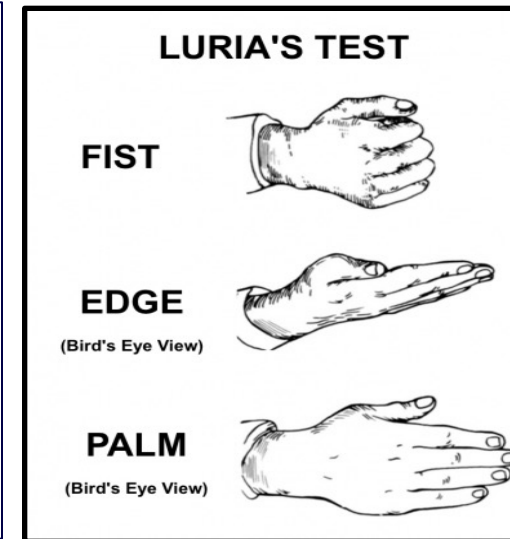
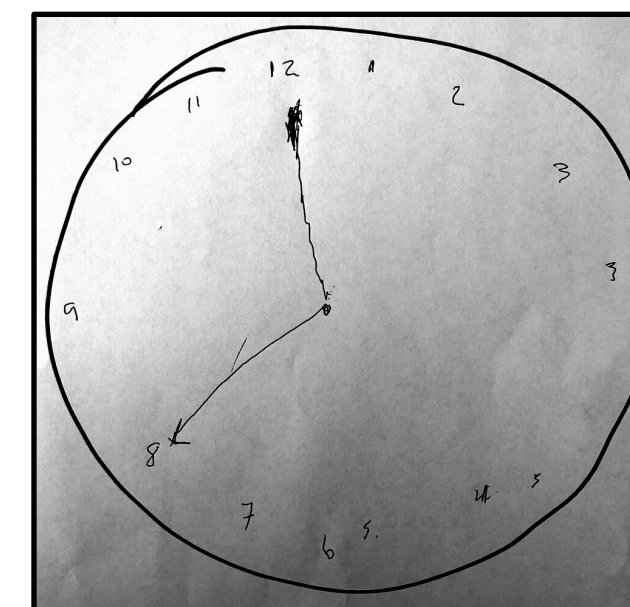
## Case Presentation

- **HPI:** 60-year-old Caucasian male presenting to a community hospital with psychotic symptoms initially thought to be due to hypertensive encephalopathy. Psychiatry was consulted for telehealth evaluation. Three months prior to presentation, he had experienced:
  - Progressively bizarre paranoid and erotomanic beliefs.
  - Disinhibited interactions leading to financial exploitation.
  - Frequent falls and two motor vehicle accidents.
  - Visual hallucinations of bed-bug infestation and fumigant use.
- **Past Psychiatric History:** Minor prior depressive symptoms.
- **Medical History:** Poorly controlled hypertension.
- **Social History:** Previously high occupational functioning with step-wise decline. Single and unemployed. Prior cocaine use.
- **Initial Mental Status Examination:** visual hallucinations, paranoia, perseveration, depressed mood, impaired attention.
- **Interventions:**
  - Brief civil commitment to inpatient psychiatric hospital.
  - Detailed neurocognitive bedside evaluation.
  - Referred to geriatric psychiatry, connected with Adult Protective Services, and started on low-dose memantine to delay progression of his MND.

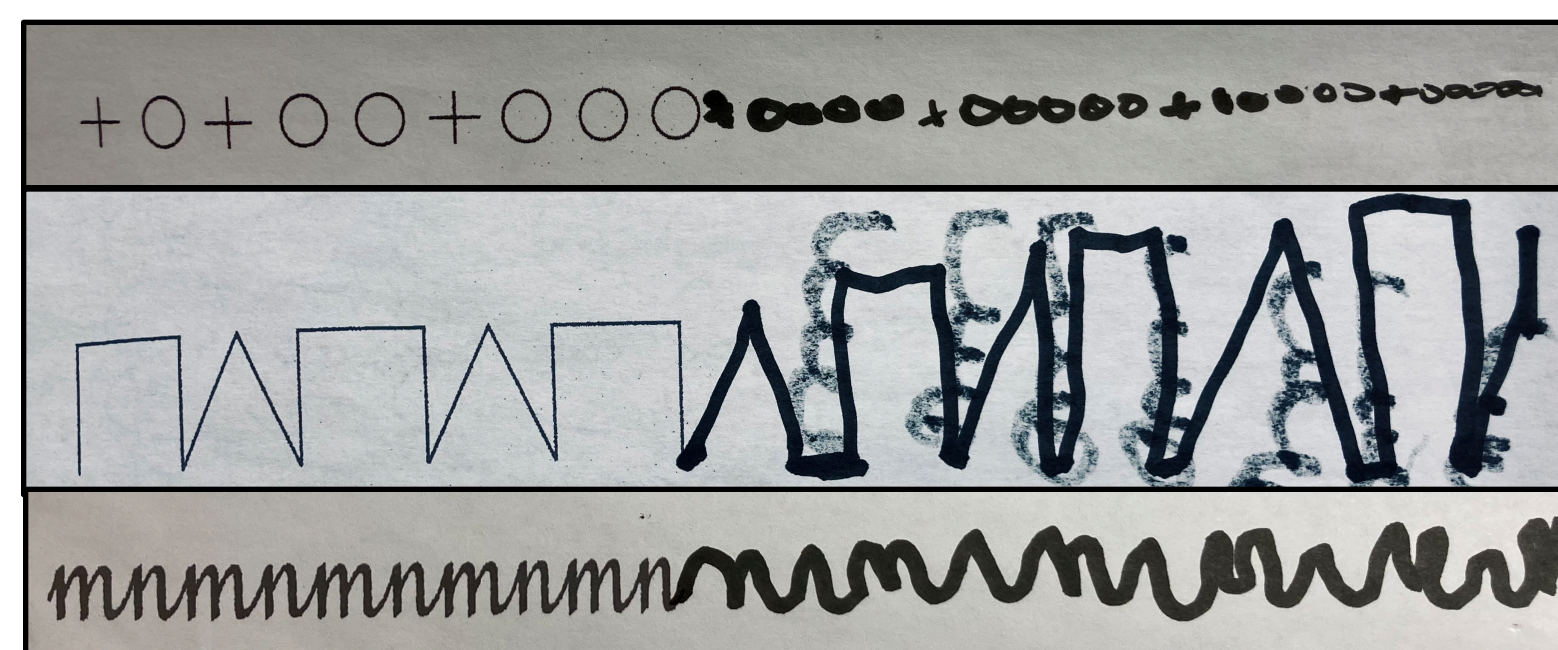
## Bedside Neurocognitive Testing

### 5-minute Neurological Examination

Cognitive: Bradyphrenia  
Cranial Nerves: II-XII intact  
Motor: unilateral fine motor bradykinesia  
Sensory: normal  
Coordination: Luria's test: failed on R  
Reflexes: normal  
Gait: impaired

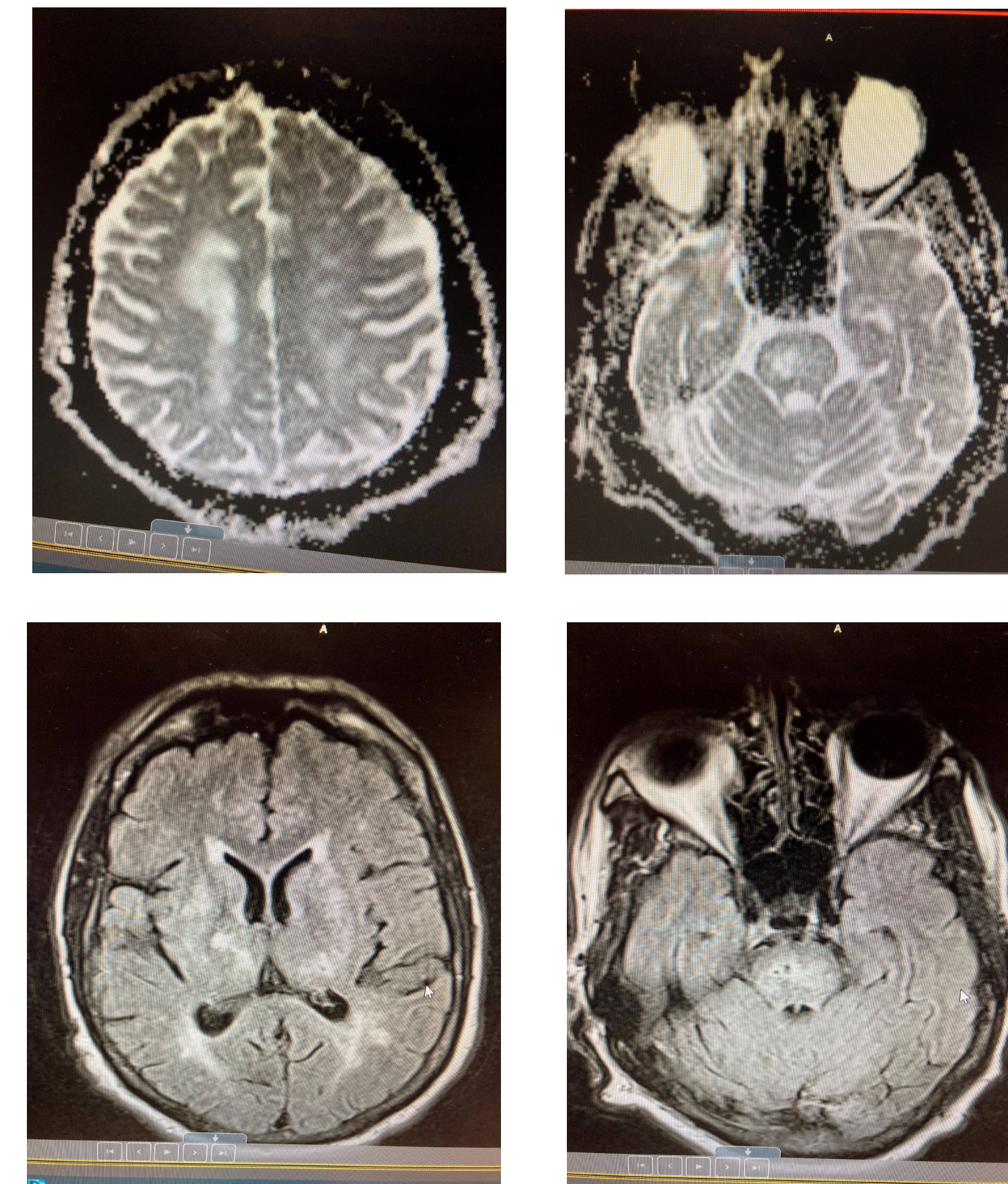



**Figures 1-2. Montreal Cognitive Assessment**  
The patient exhibited significant deficits in executive function, complex attention, language, working memory. A score of 13/30 plus a history of stepwise decline in instrumental activities of daily living in the context of a history of vascular risk factors suggests a diagnosis of vascular dementia.



**Figure 3-5. Bedside Tests for Frontal Lobe Dysfunction**  
The patient failed tests of pattern sequencing, alternating ramparts, and alternate m-n-m-n. These findings in addition to failing a R handed Luria test suggest frontal disinhibition from neurologic lesions.

## Neuroimaging Correlations



**Figures 6-9. Magnetic Resonance Imaging of the Brain**  
\*Neuroimaging was notable for severe leukoencephalopathy representing microvascular disease. Specific findings included chronic lacunar infarctions in the pons, left thalamus, frontal periventricular white matter, right periauricular white matter, and left corpus callosum.

## Applying the Four Factor Model

### Team Member

- Collaborate with RN over telemedicine
- Coordinate with inpatient team

### Information Integrator

- Gather thorough data and consolidate findings
- Innovate despite system limitations

### Patient Advocate

- Ensure adequate diagnostic assessment
- Consider patient safety

### Resource Manager

- Understand subspecialist availability
- Refer appropriately while considering costs

## Discussion

Our bedside examination combined with neuroimaging clarified the diagnosis of subcortical vascular dementia, likely Binswanger's disease: a mixed neuropsychiatric syndrome with step-wise progression of cognitive and behavioral change, prominent frontal dysexecutive syndrome, past cerebrovascular insults, and focal neurologic deficits (1). Depression is the most common psychiatric presentation, however other common findings include personality change, confusion, and late onset paranoid psychosis, all of which were seen in our patient (2). Though the absence of immediate access to subspecialty evaluation in the community setting could have been restrictive, we were able to leverage our systems resources to accurately diagnose and refer our patient to an evidence-based treatment (3). While the mainstay of treatment for vascular dementia includes identification and careful control of vascular risk factors, treatment with memantine can safely be used to improve cognition in patients with mild to moderate vascular MND (4).

## Conclusions

- Psychiatrists should keep vascular MND on the differential when considering an atypical course of psychiatric symptoms later in life, especially in the context of cardiovascular disease.
- Physicians working at the interface of medicine and psychiatry are encouraged to maintain proficiency of bedside neurocognitive evaluation skills.
- Psychiatrists must consider a systems-based perspective for patients with assessment needs beyond the reach of their environment of care.

## References

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