Restoring Power: Dynamic Evolution of Catatonia in the context of Cerebral Venous Sinus Thrombosis and Hemorrhagic Infarction – a case presentation

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Catatonia

- Syndromic collection of motor and behavior signs and symptoms that may be associated with a psychiatric condition or secondarily associated to a medical condition
- After treating any underlying cause, the first-line treatment of catatonia is lorazepam. If symptoms persist beyond 5 days or malignant features are observed, then ECT is considered the definitive and most effective treatment

Catatonia can be diagnosed by the presence of two or more of the first 14 signs listed below, and must not be during a course of delirium	
1. Excitement	Extreme hyperactivity, and constant motor unrest, which is apparently non-purposeful; not to be attributed to akathisia or goal-directed agitation
2. Immobility/stupor	Extreme hypoactivity, immobility, and minimal response to stimuli
3. Mutism	Verbal unresponsiveness or minimal responsiveness
4. Staring	Fixed gaze, little or no visual scanning of environment, and decreased blinking
5. Posturing/catalepsy	Spontaneous maintenance of posture(s), including mundane (e.g., sitting/standing for long periods without reacting)
6. Grimacing	Maintenance of odd facial expressions
7. Echopraxia/echolalia	Mimicking of an examiner's movements/speech
8. Stereotypy	Repetitive, non-goal-directed motor activity (e.g., finger-play, or repeatedly touching, patting, or rubbing oneself); the act is not inherently abnormal but is repeated frequently
9. Mannerisms	Odd, purposeful movements (e.g., hopping or walking on tiptoe, saluting those passing by, or exaggerating caricatures of mundane movements); the act itself is inherently abnormal
10. Verbigeration	Repetition of phrases (like a scratched record)
11. Rigidity	Maintenance of a rigid position despite efforts to be moved; exclude if cogwheeling or tremor present
12. Negativism	Apparently motiveless resistance to instructions or attempts to move/examine the patient; contrary behavior; doing the exact opposite of the instruction
13. Waxy flexibility	During re-posturing of the patient, the patient offers initial resistance before allowing repositioning, similar to that of a bending candle
14. Withdrawal	Refusal to eat, drink, or make eye contact

Cerebral Venous Sinus Thrombosis

- A rare condition with often nonspecific presentation, with headache being the most common symptom, thus requiring a high index of suspicion. If recognized and treated promptly, the prognosis is favorable
- Readily diagnosed with neuroimaging techniques including MRI or CT venography, and generally treated with systemic anticoagulation and management of the underlying cause

Case summary

HPI: 70-year-old female with a past medical history of Parkinson's disease (PD) diagnosed two years prior as result of a cerebrovascular accident (CVA). She was able to complete activities of daily living several days prior to presentation, then developed a headache with increasing unresponsiveness. She presented with signs of catatonia including stupor, mutism, negativism, posturing, grimacing, and tearfulness.

Differential: seizure, lupus cerebritis, autoimmune encephalitis, undertreated PD, and catatonia. Unspecified encephalopathy was noted on EEG but workup and therapeutic trials for seizure, systemic lupus erythematosus (SLE), paraneoplastic process, malignancy, and undertreated PD were negative and ineffective.

Assessment: catatonic presentation temporally and mechanistically aligned with identification of CVST.

Treatment course: lorazepam titration, heparin administration, and additional medication trials did not produce clinical improvement over the next six weeks. Due to the presence of CVST, electroconvulsive therapy (ECT) was deemed too great a risk with the possibility of herniation. A day prior to discharge the patient's responsiveness improved remarkably, with a sudden ability to interact and answer questions. At discharge, she was oriented to self and required reorientation to location, time, and situation with no apparent memory of the previous events.

Disposition: in collaboration with her family, she was discharged with a plan to reimage in several months to monitor for CVST resolution and monitoring for ongoing catatonic symptom evolution.

Relevance

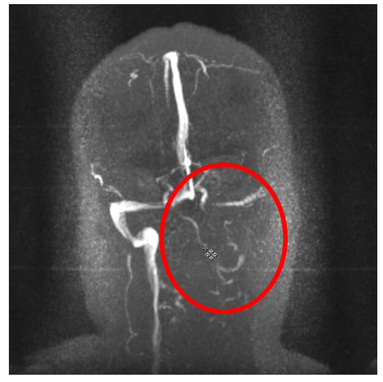
- Likely first documented case of a patient with a pre-mortem diagnosis of CVST with catatonia but without SLE
- Suggests that downstream effects of CVST may represent a rare etiology of catatonia
- Ruling out CVST may be an appropriate part of the neuromedical workup for presentations of secondary catatonia, especially when not responsive to other mobilizing interventions.
- As the thrombus was reabsorbed, it was a matter of time until someone declared "the lights are back on!"

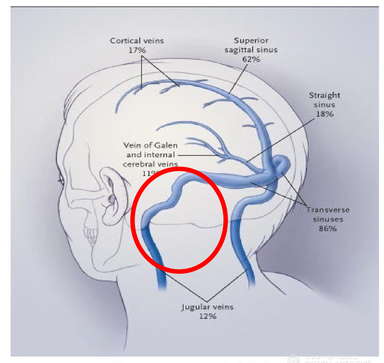
Prior case reports

Only two prior case reports of CVST and co-occurring catatonia have been reported:

1. Treated with ECT and resulted in uncal herniation. CVST diagnosed postmortem
2. History of SLE, who had resolution of symptoms with initiation of anticoagulation

Head imaging demonstrated a hemorrhagic infarct in the left frontoparietal lobes and thrombus mainly in the left transverse sinus. Below is an MR venogram on left:





Frequency of CVST

Select references

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