Remembering the Rarities: Ruling Out Obscure Diseases Aids Patients and Clinicians

Robert Brackbill, DO; Brian Costello, DO
Department of Internal Medicine, Lehigh Valley Health Network, Allentown, Pennsylvania

Introduction

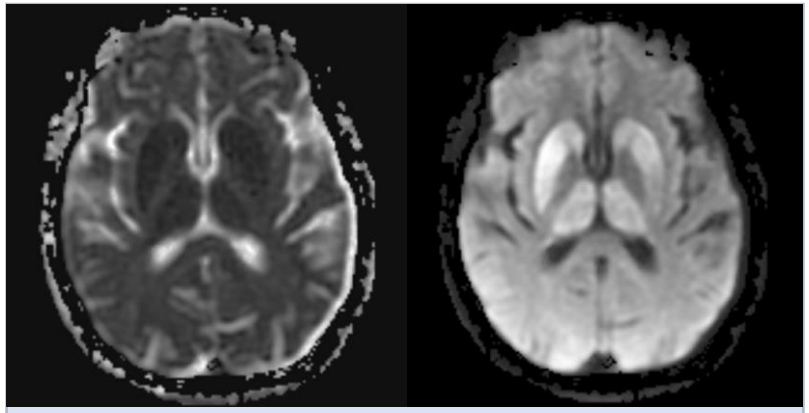
Despite being the most common prion disease, Creutzfeldt-Jakob disease (CJD) is rare, occurring in 1 per 1,000,000 individuals worldwide per year. It is rapidly progressive and fatal. Typically, the pathogenesis of CJD is obscure, though genetic and iatrogenic causes can occur.

Case Report

A 69 year old female presented to the ED with progressively worsening blurred vision, recurrent falls, cognitive dysfunction and 15 pound weight loss over the past 2 months. She lost her job secondary to these problems. Brain MRI 1 month prior showed periventricular and subcortical white matter hyperintensities in both frontal lobes suggestive of vascular aging and ischemic demyelination from small vessel disease. Physical exam revealed bilateral ophthalmoparesis with normal visual fields and marked upper and lower extremity ataxia. EEG was nonspecific. Infectious work up was unrevealing. CT of the chest, abdomen and pelvis did not reveal malignancy. Paraneoplastic work up was negative.

Repeat brain MRI identified widespread symmetric low diffusivity within the caudate nuclei, putamen, and thalami. A lumbar puncture was performed. Cerebrospinal fluid test results were positive for CJD protein 14-3-3.

The patient and family chose to receive hospice care after discharge. She died several months later while in hospice.



Left: MRI ADC technique showing striking symmetric low diffusivity present within the caudate nuclei, putamen, and thalami bilaterally.
Right: MRI isotropic technique of the same image.

References

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Discussion

The diagnosis for CJD is complicated by a vast differential and the fact that definitive diagnosis requires biopsy. Biopsy is difficult because prions are naturally resistant to conventional sterilization techniques. In lieu of neuropathologic findings, the CDC has developed clinical criteria to help make the probable diagnosis of CJD. These include the following: (1) progressive dementia, (2) two additional clinical features (e.g. visual disturbances), (3) atypical EEG and/or positive 14-3-3 CSF assay and/or abnormal MRI and (4) testing to exclude alternate diagnoses. In addition to convincing laboratory findings, our patient fulfilled the remainder of criteria set by the CDC to assist with probable CJD diagnosis, including dementia, cerebellar disturbance, extrapyramidal dysfunction, abnormal EEG and MRI.

Conclusion

This case underscores the importance of the development of safe and timely diagnostic techniques to aid clinicians in the diagnosis of CJD. Further research would be beneficial to develop such techniques to facilitate the safety and decision-making of both patients and providers. In the interim, although CJD is rare, a high clinical suspicion for this disease in patients with rapid, unexplained neurocognitive decline is necessary.

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