

## Case review: 80-year-old with Lyme encephalopathy instead of dementia

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“While mostly vigilant and awake, he intermittently lacked full orientation, had reduced attention, concentration, short-term memory function, increased motor activity, mild formal thought disorder (incl. some tangential thinking), but no frank psychotic symptoms,” [the authors explain](#).

The man was diagnosed with delirium, potentially related to dementia. An abnormal F18-FDG-PET scan was interpreted as consistent with early Alzheimer's disease. And memantine was prescribed.

However, the patient remained confused, despite receiving the antipsychotic medication risperidone and pipamperone for sleep disturbances. “The patient lacked orientation, had recurrent pervasive disturbances of sleep-wake-cycles, was intermittently restless, and also incontinent,” states Karrasch.

The patient's spinal tap revealed an increased protein, lymphocytic pleocytosis of 260 leucocytes/?l, intrathecal IgM-synthesis, and elevated lactate. “The lymphocytic pleocytosis with signs of activation together with the dominance of intrathecal IgM-synthesis raised the differential diagnosis of neuroborreliosis,” writes Karrasch.

He also had an elevation of the chemokine CXCL13. And while this is not yet validated as a routine diagnostic tool, CSF [cerebrospinal fluid] CXCL13 may be another option to increase sensitivity and accuracy in diagnosing Neuroborreliosis, next to CSF lymphocytic pleocytosis, explains Karrasch.

The patient was given a 21-day course of ceftriaxone. As a result, his confusion and delirious symptoms resolved. And “he was dismissed from the hospital in a clearly improved clinical status,” writes Karrasch, “despite an additional complication of aspiration pneumonia.”

The authors point out their case report demonstrates the possibility that confusion or acute encephalopathy can be a presenting feature of neuroborreliosis and that CXCL13 may be useful as a biomarker in central nervous system manifestations of Lyme borreliosis.

It is fortunate the doctors were able to recognize neuroborreliosis and successfully treat the 80-year-old man, or he might have been misdiagnosed with dementia.

### Related articles:

[Reversible causes of dementia and normal pressure hydrocephalus](#)

**References:**

1. Karrasch M, Fingerle V, Boden K, et al. Neuroborreliosis and acute encephalopathy: The use of CXCL13 as a biomarker in CNS manifestations of Lyme borreliosis. Ticks Tick Borne Dis. 2017.

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