Lyme Neuroborreliosis Presenting With Alexithymia and Suicide Attempts

Rahul Banerjee, BS; Jerome J. Liu, MD; and Hassan M. Minhas, MD

Borrelia burgdorferi infection has been linked to a variety of psychiatric disturbances, including inappropriate laughter,[1] obsessive-compulsive disorder, [2] and visual hallucinations.[3] We report a case of *Borrelia* infection presenting with suicide attempts and alexithymia, which to our knowledge has not been previously reported.

Case report. Mr A, a 44-year-old business executive with no past psychiatric or neurologic history, was admitted to our hospital after a third aborted suicide attempt. All 3 attempts had occurred within a 6-month period also punctuated by abrupt dismissal from 2 high-level corporate positions. Following his first suicide attempt, Mr A had been started on escitalopram, lorazepam, and psychotherapy; he had remained on this regimen through his subsequent attempts.

At the time of presentation, Mr A described feeling "in a fog" with a vague sense of guilt but no other depressive or neurovegetative symptoms. Findings of a psychiatric review of systems were otherwise negative. On mental status examination, he was alert and fully oriented but significantly alexithymic; specifically, he struggled to describe his current mood or gauge whether months of therapy had improved his mental state. His Mini-Mental State Examination[4] score was 29/30, and physical examination showed no evidence of cutaneous lesions or neurologic deficits.

Escitalopram 30 mg/d was continued, with the addition of L-methylfolate 15 mg/d, daily aripiprazole 2 mg/d, and 11 sessions of electroconvulsive therapy. Mr A's alexithymia continued unchanged despite these interventions. He was also noted to possess poor insight into the gravity of his suicide attempts, repeatedly appearing bewildered by his wife's and our treatment team's concerns about his safety. Serial examinations showed no evidence of delirium or depression to explain the patient's symptoms. Thus, further workup was performed in search of an underlying cause.

Serum electrolyte levels, blood counts, thyroid-stimulating hormone levels, vitamin B_{12} levels, Venereal Disease Research Laboratory (VDRL) test results, and urine analysis/toxicology results were unremarkable. Magnetic resonance imaging showed nonspecific cranial white matter changes. After a positive anti-*Borrelia* immunoassay, results of a Western blot test fulfilled Centers for Disease Control and Prevention criteria[5] for Lyme infection with 2 immunoglobulin M (IgM) bands (p23 and p39) and 10 immunoglobulin G (IgG) bands (p18, p23, p28, p30, p39, p41, p45, p58, p66, and p93). A lumbar puncture revealed a normal IgG index of 0.54 but 4 cerebrospinal fluid oligoclonal antibody bands that were absent from serum. Subsequent analysis revealed an elevated anti-*Borrelia* antibody index of 2.6, a test shown by Blanc et al[6] to be 97% specific for neuroborreliosis.

Intravenous ceftriaxone 2 g/d (a dose established by Halperin[7] as efficacious against neuroborreliosis) was started. Within 1 week, Mr A began to endorse that his thinking was no longer "fuzzy"; simultaneously, our treatment team noted that his insight into his illness had improved considerably. One month after completing ceftriaxone therapy, Mr A's mental status is notable for intact ability to describe his emotions as well as complete resolution of suicidal ideation. His wife adds that his communication skills with her have improved and that he has "regained his empathy." Our team has concluded, and the patient concurs, that his improvement appears to be attributable to ceftriaxone initiation after failure of antidepressant and electroconvulsive therapy.

Of note is that Mr A does not recall a history of tick bites or erythema migrans; his only risk factor was that he enjoys camping on islands in New England, where Burke et al[8] have calculated the prevalence of *Borrelia*-infected ticks to be 23%. It is unfortunately difficult to establish when our patient was initially infected, as Kalish et al[9] have shown that IgM may persist for years after *Borrelia* infection. Nevertheless, Mr A's presentation adds to the literature regarding Lyme disease—in particular, an atypical psychiatric presentation should raise suspicion of an underlying infectious process including neuroborreliosis, even without clear history of infection or focal neurologic findings.

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Drug names: aripiprazole (Abilify), escitalopram (Lexapro and others), lorazepam (Ativan and others).

Corresponding author: Hassan M. Minhas, MD, Department of Psychiatry and Human Behavior, Butler Hospital, 345 Blackstone Blvd, Providence, RI 02906 (hassan_minhas@brown.edu).
Author affiliations: Alpert Medical School, Providence, Rhode Island (Mr Banerjee); and Department of Psychiatry, Butler Hospital, Providence, Rhode Island (Drs Liu and Minhas).

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