Panic Attacks May Reveal Previously Unsuspected Chronic Disseminated Lyme Disease

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The author describes the histories of three patients with panic-like episodes that turned out to be related to underlying, previously unsuspected tick-borne diseases. Each woman experienced symptoms that are not usual in panic disorder but are typical of neurological Lyme disease, including exquisite sensitivity to light, touch, and sounds, joint pain often in combination with cognitive changes including mental fogginess and loss of recent memory, and some degree of bizarre, shifting, and often excruciating neurological pain. Because these symptoms are atypical of primary panic disorder, they were very helpful in alerting the clinician to suspect an underlying physical illness. In each case, the results of testing revealed positive hallmarks of disseminated Lyme and other tick-borne diseases, including Lyme borreliosis caused by the spirochete, Borrelia burgdorferi, babesiosis, and ehrlichiosis. Since beginning treatment with intensive doses of appropriate antimicrobial medications for their tick-borne infections, all three patients have become free of panic attacks. Treatment of their infections by a specialist in Lyme disease allowed one of the women to discontinue anti-anxiety medication completely and another to reduce the dose of medication to occasional use only. The third patient is no longer anxious but her depression is resolving more slowly despite the ongoing use of an antidepressant. Two of the patients have also needed ongoing medication for pain and other symptoms of late-stage, neurological Lyme disease.

By saying nothing...he took away...the human foothold I so desperately needed...I entered nothingness and limbo...This would be tolerable...if it could be communicated to others, and become a subject of understanding and sympathy-like grief This was denied me when the [physician] said "Nothing," so that I was thrown into the further hell-the hell of communication denied.

Oliver Sacks, MD, from *A Leg to Stand On*

In a private practice of general psychiatry and within a time-span of 10 weeks in mid-winter 1999, three seasoned, highly skilled nurses, none known to the others, individually consulted a psychiatrist because they had suddenly developed severe panic attacks. Each patient previously had believed that she had "never had a nerve" in her body, until each of them, separately and without warning, experienced a racing pulse, shortness of breath, severe anxiety, feelings of impending doom, cardiac distress, sweating, unique and severe pains, chills, and cognitive confusion. Their family doctors had ruled out other etiologies such as hyperthyroidism, had reassured them that their symptoms were typical of panic disorder, and had advised them not to worry but to reduce daily stress. The women disputed the concept of stress as the cause of their symptoms but were overruled. Each insisted, "But I know something is physically wrong with me." These three patients live and work in southeast Pennsylvania, an area in which infected ticks are endemic. One of the nurses, suspecting tick-borne disease herself, underwent specialized blood testing on her own.

When the worst episodes of panic occurred, each woman had sought help from the nearest emergency room, certain that she was dying. Again, each was dismissed with a diagnosis of panic disorder. Subsequent evaluation by the psychiatrist whom these patients consulted for

treatment of the apparent panic attacks led to advanced testing for tick-borne diseases.(2) The results expanded previous diagnostic assumptions. Laboratory findings were remarkably similar in all three patients in that they revealed infectious etiologies for the three patients' panic attacks.

Hematological evaluations included Lyme disease Western Blot serum assays along with antibody tests for co-infections, as well as polymerase chain reactions (PCRs) for whole blood specimen DNA of Lyme spirochetes and the other co-infectors. SPECT brain scans and cerebral MRIs were ordered for all three women.(3) In each case, the results of several of these tests revealed the positive hallmarks of disseminated Lyme and other tick-borne diseases. In addition to Lyme borreliosis caused by the spirochete, Borrelia burgdorferi, their infections included at least two other enzootics-babesiosis and ehrlichiosis. Since beginning treatment with intensive doses of appropriate antimicrobial medications for their tick-borne infections, all three patients have become free of panic attacks.(4) Treatment of their infections by a specialist in Lyme disease allowed one of the women to discontinue anti-anxiety medication completely and another to reduce the dose of medication to occasional use only. The third patient is no longer anxious but her depression is resolving more slowly despite the ongoing use of an antidepressant. She is one of the two patients in this trio who have also needed ongoing medication for pain and other symptoms of late-stage, neurological Lyme disease.

In this article, I describe the histories of these three patients' successful attempts to obtain relief from the egregious suffering caused by panic-like episodes that turned out to be related to underlying, previously unsuspected tick-borne diseases. All women cooperated fully with testing and treatment with the exception that, to date, none has been willing to discontinue antibiotics long enough to undergo lumbar puncture. However, two patients have now finally allowed scheduling of this test for the future.

Case history 1: Mrs. A

The first nurse to call for an appointment was Mrs. A, a 35-year-old former neighbor, whose relaxed, easy style of being in the world contrasted sharply with her recent experiences. She presented in a terrified state, describing typical panic attacks that also involved a great deal of chest pain. This symptom complex had stumped a series of cardiologists, neurologists, and internists. When questioned, she reported that she was afraid to allow herself to relax because this tended to trigger panic attacks. Extreme insomnia was a serious problem for her.

Other prominent symptoms included frequent bowel movements, fatigue, mental fogginess, profound chilliness, a sense of her heart racing when it was not, bladder urgency, acute muscle pains, and dizziness. In addition, she experienced sudden, distracting episodes of cardiac palpitation. One toe was swollen and painful, and her neck was stiff and sore. During the panic attacks, Mrs. A often gasped for air. She had a feeling that she could not inhale a sufficient supply of oxygen and that, if she could not breathe correctly, she might stop breathing totally. There were episodes of whole body tremor. Her arm felt numb. She was exquisitely sensitive to light and consequently wore dark sunglasses. Her neck made cracking and popping sounds when moved. Mrs. A whispered, "I have some recent memory loss; I can't remember things. I get disoriented, so I stay in my neighborhood. That is my only option." She had trouble with mental concentration, orientation, and depression. A combination of rest-less leg syndrome and periodic limb movement disorder added to her insomnia and therefore to her daytime fatigue.(5)

Mrs. A had seen 12 specialists, including a neurologist, endocrinologist, gynecologist, internist, chiropractor, acupuncturist, and allergist, each of whom had confirmed that she had panic attacks. Her nights were punctuated by horrific dreams of small animals she needed to kill but somehow couldn't.

Blood testing by the psychiatrist revealed a positive Lyme plasmid DNA based PCR test. Also, Mrs. A had an abnormal brain SPECT scan with the following interpretation: "moderate to severe global cortical hypoperfusion with heterogeneity consistent with encephalitis or vasculitis, such as Lyme disease." It was expected that a repeat SPECT scan following adequate antibiotic treatment would reveal interval improvement of the cerebral hypoperfusion.

Mrs. A's cerebral MRI was read as: "Non-specific foci of high signals predominantly in the frontal lobe white mat-ter. These may represent changes due to Lyme encephalitis. A single focus is present in the anterior right parietal lobe."

The results of Mrs. A's blood antibody testing were less than dramatic. There were negative (Lyme IgG, only positive band #73) or equivocal (Lyme IgM, only positive band #34) antibodies on the Western Blot tests and low positive tests for ehrlichiosis of the HGE type and for babesiosis. Because, throughout her illness, Mrs. A had also experienced what appeared to be grand mal seizure symptoms without loss of consciousness, an EEG was done.(6) It was within normal limits.

During the first month after the diagnosis of Lyme disease was made, varying low doses (0.25 mg) of alprazolam (Xanax) and the use of small doses of zolpidem (Ambien) at bedtime were helpful in controlling Mrs. A's panic symptoms, which persisted but became more tolerable. By the time the patient was able to see a specialist in Lyme disease, her face had a slight droop on the left side, which was considered to be early Bell's Palsy. After starting oral cefuroxime axetil (Ceftin) 500 mg twice daily, this sign of Lyme rapidly remitted, as did most of the patient's other symptoms. However, Mrs. A then developed a number of Jarisch-Herxheimer(7) reactions to her antibiotics in which her original symptoms returned, at least briefly. On one such occasion, her face became numb and the original terror returned. Although she was not depressed, she began to doubt her diagnosis and fear that her future was lost.

At the beginning of her second month of treatment, Mrs. A. turned a corner. Her panic attacks stopped ("I could feel even the potential of them lifting off me") and she felt she could trust her moods again. She was able to concentrate well and could function without o fear, although many physical symptoms did persist. However, after 51 days of antibiotic treatment, Mrs. A no longer had severe pains in her right calf. After 10 months of antibiotic treatment for Lyme disease, she still has not needed any follow-up psychotropic medications. She no longer considers panic attacks to be a factor in her life.

Case History 2: Mrs. B

The second nurse to call for an appointment was Mrs. B, a 36-year-old mother of one who was feeling suicidal because of severe panic attacks and resultant depression. She had the reputation of being a physically strong, able professional working in physical rehabilitation who had almost never taken a sick day off from work prior to the onset of of this illness. She now complained of extreme discomfort from migrating pains, malaise, fatigue, and weakness throughout her entire body. She experienced excruciating soreness in her ribs. Most of her joints felt red-hot and swollen, although they were not. She had become socially withdrawn. Mrs. B's family doctor had started her on nefazodone (Serzone) 150 mg twice

daily but it did nothing to help her symptoms. Zolpidem (10 mg at bedtime) was successful in helping her sleep.

Mrs. B had the impression, because of internal abdominal soreness, that her diaphragm was inflamed. However, an abdominal/thoracic CAT Scan showed neither lesions nor any other cause for her distress. Extreme pain in her hands and feet came on in waves. The pain in her knees radiated up and down her thighs and legs. She had also had losses of recent memory.(8) Mrs. B had severe occipital headaches that were so violent they would wake her at night as she slept. She had alternating sweatiness-necessitating several changes of drenched clothing during each 24-hour period-and chilliness. Her left arm felt numb and her eyes were intensely sensitive to light.

Physical. and neurological examinations revealed no evidence for the cause of her distress. Shortly after the onset of her symptoms, Mrs. B had begun to have pro-longed panic attacks, which involved tachycardia, shortness of breath, anticipation of doom, and desperate trips to the ER. To the patient, these spells of terror were the worst of all her symptoms and led her to feel that life was not worth living. When medical professionals dismissed her symptoms as "stress," it led her to have a sense of hopelessness.(1)

Mrs. B had crying spells, a negative outlook, preoccupation with thoughts of dying, and horrific images of her mother's death from cancer that none-the-less seemed to her preferable to living in her own current distress. In desperation, Mrs. B. considered the idea she might have Lyme disease. She sought the help of a specialist who diagnosed her as having chronic (late stage) disseminated Lyme on the basis of his clinical examination and her strongly positive Lyme urine antigen capture tests (LUATS). This impression was confirmed by other tests. SPECT scanning of Mrs. B.'s brain revealed "bilateral moderate global cortical hypoperfusion with heterogeneity consistent with encephalitis or vasculitis due, for example, to Lyme disease" and "also borderline white matter disease." Originally negative, only late in treatment did Mrs. B's Lyme IgG Western Blot test turn positive (bands #39 and #41) with an equivocal band #30 and a positive, irrelevant band #37 (IGeneX Reference Lab). Her Babesia microti titer was weakly positive (1:40 IgG); however, there was whole blood babesia microti DNA in the positive PCR test (MDL laboratory). Her human monocytic ehrlichiosis (HME) and her human granulocytic ehrlichiosis (HGE) titers likewise were both elevated at 1:80 IgG (IGeneX Lab).

The specialist started Mrs. B on oral cefuroxime 500 mg p.o. bid. Ongoing antibiotic treatment brought the patient significant relief from the majority of her physical symptoms, although for approximately 7 months there was only minor change in the severity of her neurological and joint pains. Intervals of relief were punctuated by Jarisch-Herxheimer reactions that were thought to be related to spirochetal die-oil These episodes resulted in temporary recurrences of the patient's original symptoms, including the panic attacks. It was panic that had led to her first-ever visits to a psychiatrist's office.

To date, after 9 months of increasingly aggressive antimicrobial treatment for tick-borne diseases and 8 months of psychiatric contact, with one visit every 4 weeks, the patient's panic attacks, weakness, and malaise, as well as her abdominal and joint pains, have been eliminated. Current medications include ceftriaxone sodium (Rocephin) 2 gm IM once weekly, cefuroxime axetil (Ceftin) 500 mg b.i.d., doxycyline 100 mg t.i.d., and penicillin G procaine/benzathine (Bicillin) 2,400,000 units IM weekly. Along with supportive psychiatric office visits, she also receives a combination of citalopram (Celexa) 40 mg daily for her slowly remitting depression and zolpidem 10 to 15 mg nightly to relieve profound

wakefulness. Mrs. B still needs to use uniform, regular doses of oxycodone to control her neurological pain effectively enough to enable her to function at work.

Case History 3: Mrs. C
Mrs. C is a 40-year-old, previously healthy, pediatric nurse and mother of three who reported the sudden onset of incapacitating, hours-long panic attacks accompanied by tachycardia, joint and sciatic pains, shortness of breath, severe headaches, sweats, chills, fatigue, fainting spells, and ear pain. She was totally unable to function while remaining in this state for up to 2 hours per episode. Her vision was dimming and there were waves of sensitivity to light and visual blurring; she had a sensation of doom and feelings of urgency and fatigue. She experienced hyperacusis, with ringing in her ears. She also had migrating joint pains, abdominal pain, and sciatic-like pain on the left side. Her premenstrual dysphoria was extreme. She was also handicapped by near-total insomnia and had been awakening with powerful carbohydrate cravings that led to a 30-pound weight gain. Mrs. C also was forced to make frequent, desperate, sporadic visits to the ER.

Mrs. C's symptoms had begun approximately 1 year before her initial visit to the psychiatrist when, during an unusual attack of bronchitis, she suddenly felt unable to breathe. From then on, she feared these spells and also feared spells of fainting when she sat up from a reclining position. She was hospitalized and evaluated by numerous specialists including a neurologist, a cardiologist, and an internist, all of whom could find no physical basis for her symptoms.

Positive DNA tests for living spirochetes (PCR's for Lyme disease)(9) were obtained from two unrelated reference laboratories. Her IgM Western Blot antibody for Lyme was equivocal (positive band #31; equivocal bands #34 and #41). Her WB IgG was negative (double-positive band #41 and equivocal band #30). Obviously she was not making sufficient antibodies against the spirochetal anti-gen. Mrs. C had a low positive antibody titer (1:40 IgM) for human granulocytic ehrlichiosis (HGE) and a positive Babesia rnicroti titer of 1:80 IgM. Her brain MRI was normal.

A SPECT scan of the cerebrum showed "bilateral mild global cortical hypoperfusion with heterogeneity consistent with encephalitis or vasculitis...such as with infection (e.g.) Lyme disease."

Treatment with oral Ceftin (cefuroxime axetil), 500 mg twice daily, immediately reduced the headaches, vision problems, ringing in the ears, sinus pressure, and trips to the ER. The fatigue, fainting spells, insomnia, abdominal pain, joint pains, and sciatic-like pain have been more resistant to treatment but have responded over time. In a twist typical of Lyme disease, her headaches and her joint pains alternate. She never has both together but consistently has one or the other. Severe PMS pain responded quickly to Prozac 10 mg given to her on several days in the middle of the month for that reason only. Doxycyline to treat the HGE that became more prominent as the Lyme disease was treated and then atovaquone (Mepron) to treat babesiosis were added to eliminate many of her residual symptoms. Targeted babesia symptoms that responded well to the latter medication were, in the patient's own words, "irritability, the remaining headaches, heat dysregulation, and chills."

One of the earliest symptoms that would initiate Mrs. C's panic attacks was a tendency to feel herself blacking out. The ER staff would put her through numerous tests, all of which showed normal results. With the initiation of antibiotic treatment, these episodes abated, only to resurface months later. On one occasion Mrs. C, who was not at all the histrionic

type, just made it to the office as she struggled with such an approaching blackout. She was evaluated as she lay on the office. floor, fully conscious with her feet on the couch and with no other symptoms except chagrin. Her BP was 130/80 and her pulse was 104. She knew that this position and the alprazolam 0.25 mg which she carried in . her purse for such occasions would reverse the episode in an hour and they did. She did not need the alprazolam when she was not symptomatic in such a crisis. On several occasions at the beginning of her illness, she completely lost consciousness during these episodes and was rushed to the ER by ambulance. Blackout episodes are not uncommon in advanced neuroborreliosis and are among the most frightening of symptoms to those undergoing the experience. Mrs. C is currently undergoing a repeat of intensive neurological/cardiac evaluations to be maximally certain of the etiology of her blackouts.

A working hypothesis to explain Mrs. C's ongoing symptoms in the face of overall improvement with the use of long-term antibiotics is that her tissues retain a buildup of chronic, non-metabolized neurotoxins due to the severe Lyme infection. She may undergo toxin-binding therapy with cholestyramine, after being primed with pioglitazone (Actos) for the 5 days before treatment and at least 5 days after treatment begins to prevent Herxheimer-like symptom intensifications.(10)°

SUMMARY

Three patients with previously unsuspected tick-borne disease presented with many typical panic disorder symptoms combined with puzzling physical complaints. Fearing what seemed to be the approach of certain death, each was planning to say tearful good-byes to her already frightened young children. However, a closer look by a mental health professional defined the true etiology of their illnesses.

Therapeutic hints that these women's diagnoses may have resulted from complex, infectious causes included the fact that, in each case, panic lasted for hours as opposed to the usual half-hour or less duration expected with typical panic attacks. Then, too, the patients did not develop the panic victim's usual "fear of the marketplace-fear of making a scene," nor confine themselves to home. Like agoraphobics, however, they did fear being away from avenues of help should the attacks recur. They tended to stay in their neighborhoods or their workplaces and around familiar, helpful people.

Each woman experienced exquisite sensitivity to light, touch, and sounds and joint pain often in combination with cognitive changes including mental fogginess and loss of recent memory-symptoms that are unusual in panic attacks but are typical of neurological Lyme disease. Likewise, each nurse had some degree of bizarre shifting neurological pain, which was often excruciating. Because these symptoms are atypical of primary panic disorder, they can be very helpful in alerting the clinician to suspect an underlying physical illness, especially in cases like these three who had no history of the Lyme stigmata of bull's eye-shaped or other rashes.

It is the exceptional situation when all the symptoms of neuroborreliosis resolve as quickly as they did in the case of Mrs. A. If they disappear that rapidly, it is to be expected that they will recur in an on/off fashion as treatment progresses, while gradually decreasing over time. Subsequent follow-up of this patient showed that this was true with regard to a host of her symptoms. She still has not needed psychotropic medications, however.

Of special interest is the timing of these Lyme cases, which presented in the psychiatrist's office in mid-winter instead of the well-known primary spring-summer-fall tick season. Neuroborreliosis is late-stage Lyme disease, comparable to tertiary syphilis. Like the

spirochete of the latter, Borrelia burgdorferi can infect the nervous system at any time-days, months, or even years after the tick's inoculation of spirochetes into the patient. The symptoms may show up early or later and the search for answers may likewise go on for many months or years. One Lyme patient, a well-known medical physiologist, carried a list of 42 medical specialists whom he had consulted in an effort over several years to reach a plausible diagnosis. Thus, any season is the season for a person with CNS Lyme disease to arrive in the psychiatrist's office.

Note that the ELISA test was not used because it is considered too often unreliable.(11) On advanced testing, two patients showed positive DNA evidence of disseminated spirochetal infection. The remaining nurse had a positive IgG Lyme Western Blot and a positive DNA (PCR) test for Babesia microti. In addition, each patient had an abnormal SPECT scan showing "heterogeneity of cerebral hypoperfusion compatible with Lyme neuroborreliosis."(12)

Not one of the nurses experienced increased dysphoria upon learning of the diagnosis of Lyme disease, although they well understood the serious nature of its infectious origin and of the cerebral complications associated with their infections. Rather, all three patients were relieved to understand the etiology of their panic attacks and felt hope for a return to normality. They all agreed that the greatest relief came from open communication with physicians who listened to their bizarre symptoms with non-judgmental, inquiring minds, making possible their escape from the hellish limbo of medical isolation,(1) which, in turn, led to accurate treatment and relief of their symptoms.

References

1. Sacks O. Limbo. In: A leg to stand on. New York: Simon & Schuster, Touchstone Books; 1984: 84-5.
2. Harris NS. The laboratory's role in the diagnosis of Lyme Disease. In: Folds JD, Nakamura RM, eds. Clinical diagnostic immunology: Protocols in quality assurance and standardization. Malden, MA: Blackwell Science; 1998: 362-82.
3. Logigian EL, Johnson KA, Kijeweki MF, et al. Reversible cerebral hypoperfusion in Lyme encephalopathy. Neurology 1997;49:1661-70.
4. Fallon BA, Schwartzberg M, Bransfield R, et al. Late-stage neuropsychiatric lyme borreliosis: Differential diagnosis and treatment. Psychosomatics 1995;36:295-300.
5. Sherr VT. Restless legs syndrome as a marker for unsuspected chronic Lyme Disease. Farmington, CT: XIII International Scientific Conference on Lyme Disease and Other Tick-Borne Disorders; March 2000 (abstract).
6. Bransfield R. Case report: Lyme disease and complex partial seizures. Journal of Spirochetal and Tick-borne Diseases 1999;6:123-5.
7. Maley AL, Black RD, Segurola RJ, Jr. Lyme disease complicated by the Jarisch-Herxheimer reaction. J Emerg Med 1998;16:437-8.
8. Rissenberg M, Chambers S. Cognitive characteristics of chronic Lyme encephalopathy. New York: American Psychiatric Association Annual Meeting; May 1996: abstract of presentation.
9. Mouritsen CL, Wittwer CT, Litwin CM, et al. Polymerase chain reaction detection of Lyme disease: Correlation with clinical manifestations and serologic responses. Am J Clin Pathol 1996;105:647-54.
10. Shoemaker RC. Beyond antibiotics: Treatment of chronic Lyme disease with cholestyramine and monitoring with visual contrast sensitivity. Lewes, DE: American Society of Microbiology Regional Meeting; April 10, 2000.

11. Bakken LL, Callister SM, Wand PJ, Schell RF. Interlaboratory comparison of test results for detection of Lyme disease by 516 participants in the Wisconsin State Laboratory of Hygiene/College of American Pathologists Proficiency Testing Program. J Clin Microbiol 1997;35:537-43.
12. Plutchok JJ, Tikofsky RS, Liegner KB, Kochevar JM, Fallon BA, Van Heertum RL. Tc-99m HMPAO brain SPECT imaging in chronic Lyme disease. Journal of Spirochetal and Tick-Borne Diseases 1999;6:117-22.