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Public Health Alert

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All In Your Head?

by Robert C. Bransfield, M.D.

In 1975, I was the only psychiatrist in an eight-county area in the rural South. While making hospital rounds, a nurse timidly approached me and handed me a note on a doctor's prescription pad which read, "This patient has too many complaints, and all the tests are negative. The problems are all in her head and she is hopeless, so I am referring her to you." This note was a good example of the confusion that surrounds the mind-body interaction in a state of disease. This same conceptual error persists today, unfortunately among some physicians in highly respected and influential positions. There is considerable confusion regarding terms such as psychosomatic, somatopsychic, hypochondriasis, malingering, and factitious disorder. Our manner of categorizing these conditions is also confusing.

It is incorrect to state that any disease process is even "all in the head" or "all in the body," since there is constant reciprocal interaction between the brain and the body. The body consists of the brain and the rest of the body, the soma. The brain and soma communicate with each other through four major systems — the voluntary nervous system, the autonomic nervous system, the endocrine system, and the immune system. Any change in the brain can impact the soma and vice versa through communication in these four systems. All diseases have a psychic and somatic component, however, either component may be more dominant in different disease states.

It is also incorrect to state that a disease process is either a psychological or a physical process, since all mental processes correlate with physical, biochemical events with the brain.

To discuss the brain/body connection, I'll begin with a few definitions. Some of these definitions are from the American Psychiatric Association Diagnostic Criteria Manual DSM IV:

Psychosomatic: Mental distress results in somatic symptoms.

Somatopsychic: Somatic distress results in mental symptoms.

Hypochondriasis: An excessive fear of having a serious disease based upon misinterpretation of one or more bodily sign or symptom.

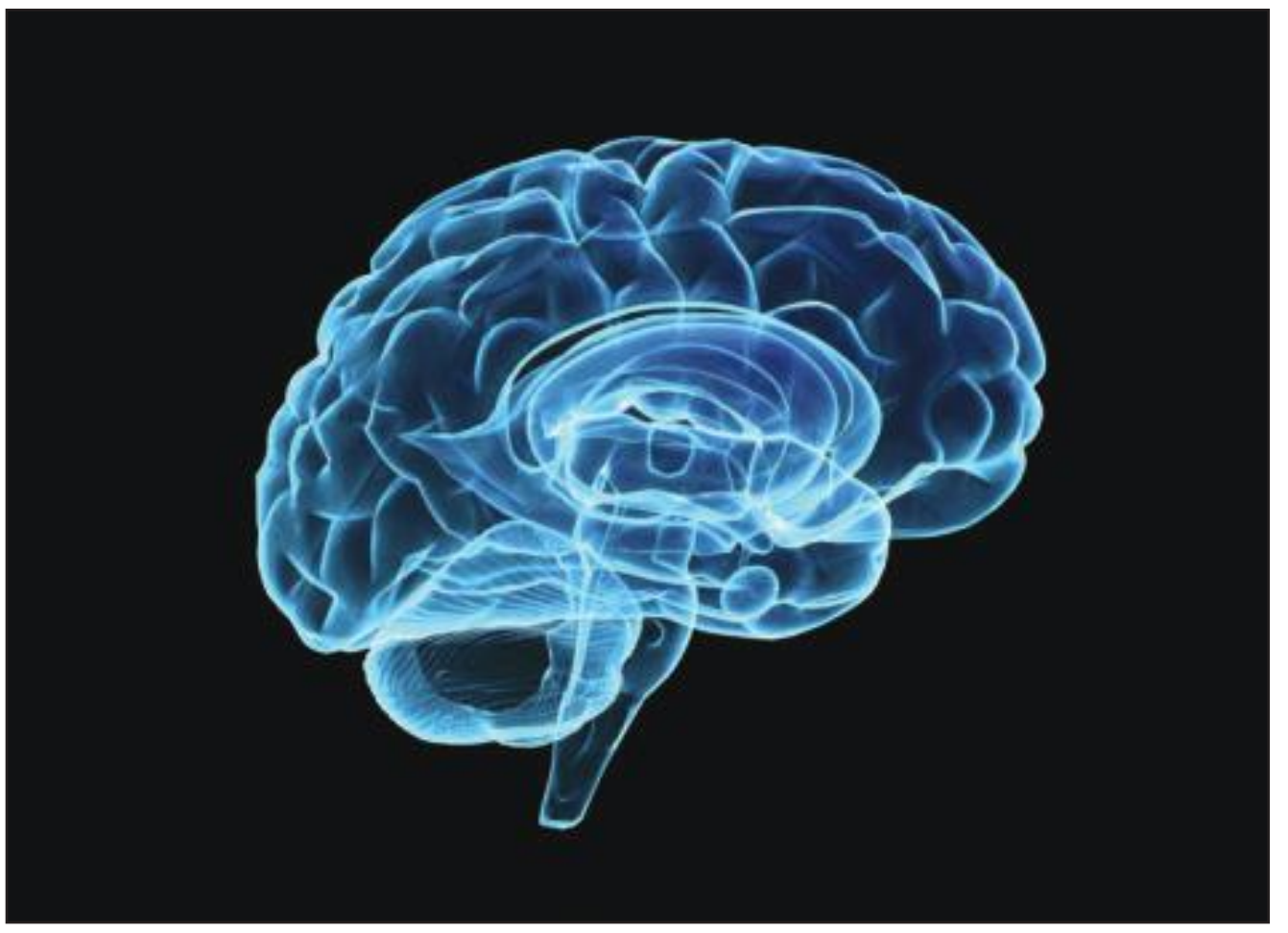
Malingering: The intentional production of false or grossly exaggerated physical or psychological symptoms motivated by external incentives such as financial compensation, obtaining drugs, avoiding work, etc.

Factitious disorder (Munchausen's Syndrome): The intentional production of physical or psychological symptoms that are intentionally produced or feigned in order to assume the sick role. The highly controversial factitious disorder by proxy (Munchausen syndrome by proxy) is the intentional production of symptoms in another person.

Somatoforin disorder: A broad diagnostic category of disorders currently used by the American Psychiatric Association in which there is the presence of physical symptoms that suggest a general medical condition which cannot be explained by a medical condition, and is not caused by the direct effect of a substance.

Somatization disorder (previously called hysteria or Briquet's syndrome): A disorder with multiple symptoms beginning before the age of 30, extending for years, characterized by a combination of pain, gastro-intestinal, sexual and pseudoneurological symptoms which cannot be explained by the presence of a medical condition.

Undifferentiated Somatoform Disorder: Unexplained physical complaints, lasting at least 6 months, but below the threshold for Somatization disorder.



Conversion disorder: Sensory or voluntary motor symptoms resulting from repressed emotional conflicts.

Panic attacks: There is a feeling of alarm and doom accompanied by acute symptoms of a high level of physiological arousal.

Somatic delusion: Somatic complaints as a result of a delusion. There are many unknowns about the true nature of disease at this point in history. Many diseases have not yet been discovered or properly categorized, and the dynamics of common diseases are not fully understood.

Complex, poorly understood diseases are often considered to predominately have a psychological basis until proven otherwise. Tuberculosis, hypertension, and stomach ulcers were once considered to be psychosomatic. A failure to make a diagnosis based upon various so-called "objective tests" is not a basis for a psychiatric diagnosis. The diagnosis of any psychiatric syndrome requires the presence of clearly defined signs and symptoms consistent with each diagnostic category. The presence of a psychiatric diagnosis does not eliminate the possibility of a comorbid somatic diagnosis. It is significant to ask whether all of the signs and symptoms can clearly be explained as a result of a psychiatric syndrome alone. Many patients are given a psychiatric diagnosis as a result of an inadequate medical exam. Also many appropriate psychiatric conditions are often overlooked.

Insurance companies are often quick to support the view that an illness has only a psychiatric basis, since they find it easier to evade responsibility for mental illness. "Compensation neurosis," "symptom magnification," and "stress" are favorite terms of consultants paid to give so-called second opinions or paper reviews.

The mind/body interaction is especially complex when understanding late stage Lyme disease. Many patients display central nervous system symptoms from late stage Lyme disease; and the cognitive, psychiatric, and neurological symptoms are often the most disabling symptoms. For this reason, this disease was called neuroborreliosis in other places when it was labeled as Lyme arthritis in Connecticut. In addition, the multitude of somatic symptoms may result in a somatopsychic component, and other comorbid interactive diseases may be present.

Late stage Lyme disease has been erroneously diagnosed as psychosomatic, hypochondriasis, malingering, factitious disorder, Munchausen's syndrome by proxy, Somatoform disorder, hysteria, and conversion disorder.

In a typical case of late stage Lyme disease, a person is reasonably healthy throughout most of their life, and then there is a point in time where a multitude of symptoms progressively appear. The number and complexity of these symptoms may be overwhelming and illness may be labeled hypochondriasis, somatization disorder, or psychosomatic. However, both hypochondriasis and psychosomatic illnesses begin in childhood and are lifelong conditions which vary in intensity depending upon life stressors. If a complex illness with both mental and physical components begins in adulthood, the likelihood that this is psychosomatic is very remote.

To properly understand the mind/body connection, a knowledge of general medicine, psychiatry, and the four systems which link the soma and the brain are required. No one has a complete knowledge of all fields of medicine. We must, therefore, retain a sense of compassion and humility, recognize that not all diseases have been discovered or properly understood and be aware that much remains to be learned about the brain/body interaction.

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When Lyme Disease Goes Under-Treated or Undiagnosed

Lyme is a Brain Disease as Well as a Multisystemic Disease

by Dr. Virginia T. Sherr, M.D.

Lyme borreliosis is a brain disease as well as a multisystemic disease caused by spirochetal bacteria.* Quite frankly, it is an infection that has been burdened with a thousand inaccurate medical diagnoses. The manner in which the current pandemic of tertiary Lyme disease, neuroborreliosis, has usually been handled---either angrily dismissed or strangely misdiagnosed--throughout the 30 years following its "discovery" has blemished the historic excellence of modern American Medicine.

After all these years, neuroborreliosis is still actually considered rare by a majority of physicians, most of whom are spirochetally naïve. Officially tallied patients (the numbers showing a dip down to 19,804 cases in 2004 after flawed reporting styles were instituted), when combined with uncounted cases may approach upward of an annual quarter million new borreliosis infections in the USA alone. And Lyme infections have been verified as present on all but one continent, globally. The disease is more often than not accompanied by several of a half-dozen or so of the other serious tick-borne co-infections that currently have been identified.

Losses of acuity in the human brain's visual cortex have been observed as early as 6 hours following the toxic bite of an infected tick. Lyme may persist after too brief a period of treatment or if there has been no treatment, and may result in chronic infections whereupon Lyme borreliosis becomes a potential cause of every symptom in medical and psychiatric lexicons. It is the "Great Imitator" of this Millennium, spirochetal paresis (neurosyphilis) having been its precursor and its model.

Chronic or persistent Lyme disease--neuroborreliosis--seldom is identified by the symptoms of its most frequent form-subacute encephalitis--an infected/inflamed brain as well as an infected nervous system. However, this is the form in which it most commonly exists. Unfortunately, the syndrome that is falsely considered typical--a bull's eye rash, fever, positive ELISA test, and/or a swollen large joint--occurs in fewer then half of proven cases. Instead, Lyme borreliosis confirms itself in subtle to profound neuro-psychiatric symptoms, such as overriding confusion, loss of organizational skills, decreased concentration, memory loss, mood disorders, irritability, and unprovoked rages--to mention just a few. These symptoms can be very obvious to an experienced professional practicing in a Lyme-endemic area. However, cerebral-behavioral symptoms of neuro-Lyme remain invisible to those whose diagnoses are solely based on old-fashioned concepts limited only to the aforesaid doctor-viewed rashes, swollen knees with positive ELISA blood tests.

Blood tests completed by local labs most frequently show false negatives due to general laboratories' inadequate understanding of proper diagnostic technique and choices of poor quality spirochetal samples on which to base tests. Of course, insurance companies prefer their negative tests. As mentioned, Lyme can rapidly go from Stage One (Early borreliosis) to Late (Tertiary) Stage disease following attachment of an infected deer tick's or other vector's bite so that quick and competent treatment are of the greatest importance. Later, accurate findings by sophisticated laboratories may be helpful, especially if Late Stage symptoms appear many years after the infection.

Over the years, I have been asked to create a compendium of my published and unpublished works on the subject of Borrelia's neuropsychiatric epidemic. These literary contributions advocate for correction of medical neglect--the usually inadequate, sometimes cruel, diagnostic and treatment neglect experienced by victims of chronic Lyme borreliosis and its co-infections. I also have had articles published in an effort to attract attention from Organized Medicine-attention badly needed on behalf of a nearly invisible but serious epidemic that is more significant by far than anything this country has experienced since the Spanish Flu of 1918, the causative spirochete being less immediately deadly than was the virus of that epidemic, but deadly, nonetheless, cerebrally.

Sadly, Organized Medicine has mostly ignored or deserted the field of neuro-Lyme's immense proportions. The American public rapidly is becoming jaundiced toward doctors' lack of up-dated knowledge of spirochetal science and, having read the latest (indeed copious) peer-reviewed recent literature for themselves, are turning to other disciplines-even to veterinarians for accurate medical advice on the subject of Lyme disease and its co-infections. Veterinarians are more up to date on the diagnosis and treatment of human Lyme than the "Diagnose-and-treat-by-the-old-Guidelines" types of powerful but passé Academic physicians who cling to outdated medical dogma.

I have written about the rampant epidemiology of neuro-Lyme disease and its potent co-infections (especially the red cell parasite that causes babesiosis) and the fact that these are being systematically ignored, minimized, or distorted by this Nation's overseeing Healthcare Agencies. Astoundingly, there are Agencies that, in ignorance or arrogance, may actively persecute the victims of such borrelial, pan-systematic illness, traumatizing parents and children as well as their treating physicians. There are those in authority who sponsor the official separation of children from parents whose only sin is that they persist in seeking help for their ailing children. Tragically, those authorities are empowered to permanently remove sick or partially healed young ones from their devoted families.

To their everlasting shame, medical authorities have stood by while innocent mothers have been sent to jail for insisting that their children were ill and again have stood by while the parent's belief was verified by the death of their sick child while under State "care". The rights of patients and their treating physicians have been trampled by governmental and insurance agencies in ways reminiscent of the era when AIDS was trivialized and its victims spurned as "psychosomatic". Today's infected millions worldwide show how wrong they were. The phenomenon of that epidemic is being repeated with the spread of Lyme borreliosis. My writing is an effort to illuminate this dark and now vast expanse of Medicine and to inspire activism and compassion for those patients who are suffering in agony while having to hear caretakers say, "I don't know what you are worried about--you look just fine--maybe you are just depressed." Or as one unknowing, dismissive and flippant doctor joked to a frightened patient who came to him for treatment and reassurance, "Well, we all have to die of something, sometime."

Quotable Quote:

Alan G. Barbour, MD:

"These tick-borne infections are notable for multiphasic antigenic variation through DNA recombinations in the case of relapsing fever, the occurrence of chronic arthritis in the case of Lyme disease, and invasion of and persistence in the brain in the case of both diseases."

www.ucihs.uci.edu/microbio/

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The PHA is committed to researching and investigating Lyme Disease and other chronic illnesses in the United States. We have joined our forces with local and nationwide support group leaders. These groups include the chronic illnesses of Multiple Sclerosis, Lou Gehrig's Disease (ALS), Lupus, Chronic Fatigue, Fibromyalgia, Heart Disease, Cancer and various other illnesses of unknown origins.

PHA seeks to bring information and awareness about these illnesses to the public's attention. We seek to make sure that anyone struggling with these diseases has proper support emotionally, physically, spiritually and medically.

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Tina J. Garcia, Mary Budinger, Laura Wild, Bryan Rosner Kathleen Liporace, Paul Callahan Scott Forsgren, Dr. Virginia Sherr, Dr. Robert Bransfield, Tami Duncan, Harriet Bishop, Lisa Copen, Joan Vetter, Jennifer Allton, Linnette R. Mullin.

Website:
www.publichealthalert.org
e-mail:
editor@publichealthalert.org

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Hurst, TX 76054

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The Pillaging Of Personalities: Our Lost Kids Are Being Hijacked By Spirochetes

by Virginia T. Sherr, M.D.

Opening the door of my office one day in May 2001, I stepped back in surprise. The teenager standing there wore a brilliant orange, neck-to-foot jumpsuit. There were shackles with chains between her wrists and she was hobbled by more chains between her ankles. Surrounding her were two rather determined looking women, looking at me doubtfully. I had known that 17-year-old Vicki was coming from a juvenile detention unit, but I hadn't expected matrons, manacles and chains.

Vicki was brought to see me for a psychiatric opinion as to possible causes of behavior that led to her arrest and of her episodic rages. Apparently, in the prison, she was noted for being pleasant and compliant one moment, but suddenly, especially perhaps when there was a clang or scraping noise, flying into bizarre rages, wherein she had to be physically subdued and taken back to her cell by force.

The matrons were decisive but generally friendly to her, she said. Vicki's history, from her mother and herself, was of great interest. At age 7, she had a number of bull's eye rashes that were misdiagnosed as "ringworm." She suddenly became drastically ill and fell comatose. "Paralyzed all over," she was hospitalized.

The specialist astutely diagnosed her as having Lyme encephalitis. Unfortunately, this serious condition was treated with only a 10-day course of IV antibiotics. She awoke from the coma looking good as new, and went home to a relieved family. Vicki, herself, could only recall "having trouble walking while in the hospital."

Her mother reminisced that Vicki seemed different somehow after that, although she had never thought of a connection between these things before. Certainly, the child had undergone a personality change. Vicki had been agreeable as a young girl, but she gradually became antagonistic and had a loss of interest in grade school subjects. By age 11 she was downright oppositional. She used increasingly poor judgement and had inadequate control over her emotions. Schools classified her as "Emotionally detached/Learning disabled" At about this time, Vicki's parents divorced, and her mother assumed that the coincidental turmoil accounted for her daughter's escalating personality change and worsening school performance.

Vicki's mother said, "The change in her personality was such that I thought of finding an exorcist."
Then came Vicki's defiant, delinquent behavior and brushes with the law. She pushed that aside entirely with the notion that her trouble only related to her friends' bad influence on her and their setting her up to take their raps.

Vicki's antibody blood tests came back with 5 positive Western Blot bands diagnostic for chronic Lyme disease. We were able to enlist the help of other skilled Lyme-literate professionals to evaluate her further. They prescribed doxycycline and gabapentin for her persistent Lyme disease and its behavioral and cognitive consequences. At her court hearing in December 2001, their written testimony was offered regarding facts of her general and cerebral spirochete bacterial infection. A successful plea was entered on behalf of her release on electronic probation from what amounted to jail.

No one noticed much change in Vicki when she was on the doxycycline, she and her mother said. However, upon my phone followup questioning in January 2002, Vicki described herself as having a "different state of mind - I'm calmer than I used to be. I can handle myself. I am not so tired all the time, and I am happier." Taking modafinil and gabapentin as prescribed, she also appeared to be more and more psychologically stable. In addition, she is not as physically symptomatic as she was before she took the recent oral doxycycline. The chronic Lyme disease symptoms that, while she was in jail, felt to her just like her own personal peculiarities - chills, sweats, fatigue, multiple joint pains, headaches, rashes, difficulty thinking and concentrating, and trouble reading - all began to fade.

Due to her mother's wise persistence, Vicki is undergoing medical evaluation for further antibiotic treatment. However, it is hard for Vicki to conceptualize that a brain infection might have been behind her serious troubles with the law - "I was just immature." she says, "Now I want to get an education - I want my life back."

Vicki is at home under house arrest now, wearing an electronic "bracelet" (monitor). She hasn't experienced life in the crucible of the outside world since she was treated with the recent antibiotics. The greatest challenge she faces is the general one facing Chad, an 18-year-old youth whom she has never met, but whose saga is so similar to hers that they seemed to have been cloned.

Chad was described by his mother as being "the most agreeable child I have ever known. Good humored, intelligent, he was a big favorite of all who knew him as a little boy."

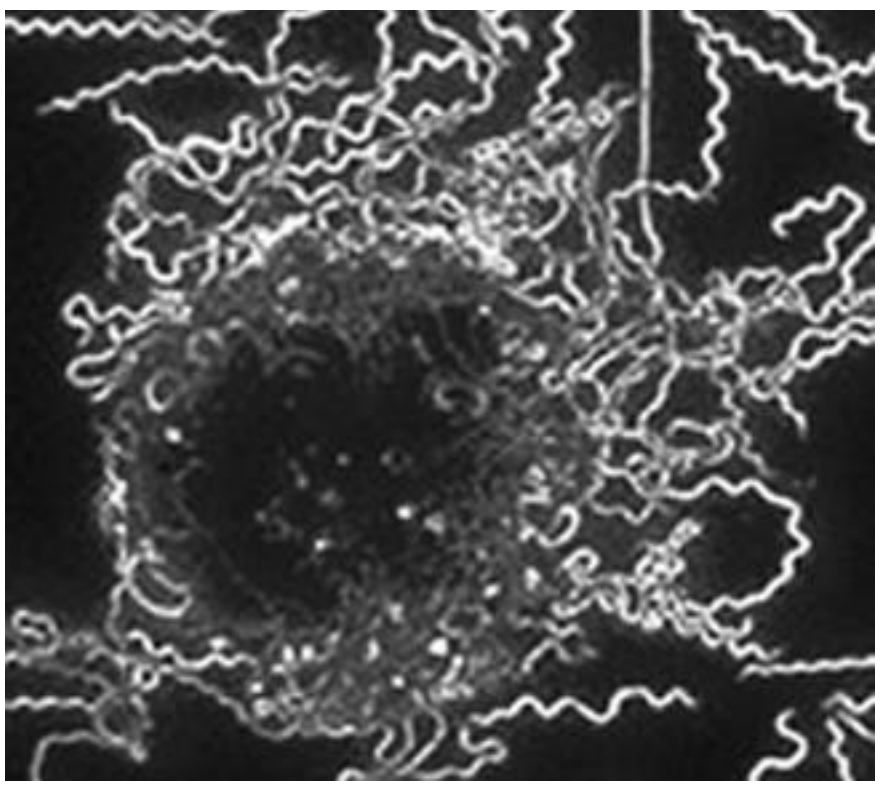
Bitten by a deer tick at age 13 with resultant bull's eye rash, he was treated, as per medical convention then, for 30 days of only twice daily oral doxycycline. He too, underwent a personality change and gradually became defiant, delinquent and seriously depressed. He demonstrated extremely poor judgment. His mother often said that due to the extreme change in his personality, it seemed as if he were "possessed."

Chad turned to drugs and alcohol, in part for pleasure, but also because they quelled a strange inner restlessness which kept him urgent - pacing and racing.

Because of his poor judgment, Chad had totaled several cars when he came of age to drive. His anxious parents sent him to private military and juvenile training centers that he now thinks were of little help. I first learned of Chad's situation when his mother asked if I would agree to see him. He had spent some time in jail with 5 charges pending against him, was due to see the judge in the morning, and she hoped it would help if a future psychiatric evaluation could be arranged.

Apparently, a wary judge reluctantly approved Chad's transfer to house arrest. At first it was touch and go at home - Chad's rages continued - in part because he still felt driven and restless. He craved release from house confinement. During the day, he continuously paced and at night he had dreams of alcohol and drugs - he was desperate for anything that would provide surcease from his near-explosive agitation and wished to be rid of his ankle monitor.

Only the fear of the greater confinement of a return to jail helped to keep him in the house and then barely so. He managed my prescriptions irresponsibly (At that time, his medications included risperidone, benztropine mesylate and an occasional alprazolam when he experienced panic attacks), necessitating that his mother administer even the mildest medications. Testing was



positive both for the presence of DNA of the causative spirochetes and the presence of his antibodies to them.

There were 6 positive bands on his Western Blot blood test for chronic Lyme disease. His SPECT scan showed diffuse hypoperfusion (lowered blood supply compatible with Lyme disease) of his brain. Currently, Chad is more responsible with his medications. They now consist in part of gabapentin, mirtazapine and olanzapine. The risperidone is being phased out. He says that he could feel the clarithromycin antibiotic working to help him the day he started it.

He is calmer now, but like Vicki, he is not yet ready to be fully tested in our complex world. And, like Vicki, Chad is reluctant to believe that his floridly positive tests for chronic Lyme disease and his clinical diagnosis of neuroborreliosis could have anything to do with his behavior. Teens are no exception to the fact that people like to believe they are fully in charge of themselves, even if they are making major mistakes. Seeming to cop out with the excuse of having a chronic brain infection appeared totally unacceptable to him.

Both of these young people have lost any idea of what they really are like, what they are capable of, or who they could be. They do not remember and have lost track of the person they started out to be. Their childhoods were distorted by ticks laden with spirochetes, longlasting agents that are toxic to personality maturation.

Each had dramatic personality changes over which they had no control and which were explained away as coincidental to some current event unrelated to the tick bite. Each mother had the feeling that her child must have been "possessed," although they did not really believe in that possibility. In truth, these two young people were possessed-- they were taken over by an unrecognized nervous system infection that pillaged their normal development. The challenge now for each young person is to undertake the missed steps of lost maturation, recover a healthy sense of self and to use it to adapt to the real adult world in ways that work for them and for society. This may prove to be a Herculean task. It is an on-going experiment as to whether Vicki and Chad can surmount the loss of 5-10 formative years and, in Chad's case, the coincident abuse of the street drugs and alcohol that falsely promised relief from the symptoms of tick-borne disease.

Gradually, these two young people are beginning to understand the importance of dealing with the minute terrorists that hijacked their childhoods. Their own government once destroyed perpetrators of piracy on the high seas and lately it has not been reluctant to seek out and destroy human terrorists.

One wonders when the same aggressive attention will be given by our government to tick and spirochetal plunderers of this generation of America's pirated children.
Make no mistake --it then could be possible that the need for aggressive attention to the lost children themselves would become unnecessary.
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Previously published in The Lyme Times.

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What Psychiatrists Should Know About Lyme Disease

International Lyme and Associated Disease Society: A professional medical and research organization

www.ilads.org
PO Box 341461
Bethesda, Maryland 20827
e-mail: lymedocs@aol.com

When Should a Psychiatrist Suspect Lyme Disease?

In a published study (Hajek et al, Am J Psychiatry 2002;159:297-301), one-third of psychiatric inpatients showed signs of past infection with the Lyme spirochete, Borrelia burgdorferi. The International Lyme and Associated Diseases Society (ILADS) has found that even severe neuropsychiatric behavioral symptoms in this population can often be reversed or ameliorated when antibiotics are used along with the indicated psychiatric treatments.

Don't miss this crucial diagnosis

Patients with late-stage Lyme disease may present with a variety of neurological and psychiatric problems, ranging from mild to severe. These include cognitive losses such as:

❖ Memory impairment or loss ("brain fog")

❖ Dyslexia and word-finding problems

❖ Visual/spatial processing impairment (trouble finding things, getting lost)

❖ Slowed processing of information

❖ Psychosis

❖ Seizures

❖ Violent behavior, irritability

❖ Rage attacks/impulse dyscontrol

❖ Anxiety

❖ Depression

❖ Panic attacks

❖ Rapid mood swings that may mimic bipolarity (mania/depression)

❖ Obsessive compulsive disorder (OCD)

❖ Sleep Disorders

❖ Attention deficit/hyperactivity disorder

❖ (ADD/ADHD)-like syndrome

❖ Autism-like syndrome

Lyme disease is one of the fastest growing infectious diseases in the nation. The Centers for Disease Control and Prevention (CDC) reported over 23,783 new cases in 2002, and the government agency estimates that the total number may be tenfold higher. The disease is caused by the bite of a deer tick infected with the Borrelia burgdorferi (Bb) spirochete and may be complicated by other parasites or coinfections. It is hard to diagnose because fewer than half of all Lyme patients recall a tick bite or develop the signature erythema migrans ("bullseye") rash. As a result, many patients go untreated and develop psychiatric and/or neurological symptoms.

Lyme disease sometimes begins as a flu-like illness accompanied by fever, headache, sore throat and joint pain. After infection, patients may develop cardiac or early neurological problems including meningitis, encephalitis and cranial neuropathies. Look for eyelid droop, facial weakness, numbness or pain, shoulder droop, sensory distortions or any other focal neurological signs. There may be a history of neck pain and stiffness or muscle twitching. Some patients may have arthritic symptoms in single or multiple joints. Most patients mention this to a psychiatrist only if directly asked. At any time after a tick bite, patients may also exhibit cognitive symptoms such as memory and concentration impairments and word-finding difficulties, ADD/ADHD-like symptoms, learning disabilities, OCD, crying spells, rages, depression/bipolar disorder, panic/anxiety disorders and psychoses - all may be caused or exacerbated by Lyme disease.

Disorders of the nervous system have been found in 15 - 40% of late-stage (tertiary) Lyme patients (Caliendo et al, Psychosomatics 1995;36:69-74). When Lyme disease affects the brain, it is often referred to as Lyme neuroborreliosis or Lyme encephalopathy. Usually the patient is totally unaware of its presence. Neuroborreliosis can mimic virtually any type of encephalopathy or psychiatric disorder and is often compared to neurosyphilis. Both are caused by spirochetes, are multi-systemic, and can affect a patient neurologically, producing cognitive dysfunction and organic psychiatric illness. Such symptoms may be dormant, only surfacing years later. Dr. Brian Fallon, director of the Lyme Disease Research Program at Columbia University and principal investigator of the NIH-funded study of brain imaging and persistent Lyme disease, cites five questions that imply warning signs of possible Lyme encephalopathy:

❖ Are there markers of non-psychiatric disease such as erythema migrans rash, arthralgias or arthritis, myalgias, severe headaches, sound or light sensitivity, paresthesias, diffuse fasciculations, cardiac conduction defects, word finding problems, short-term memory loss, tremors, cranial neuropathies, and/or radicular or shooting pain?

❖ Is this psychiatric disorder atypical or unusual? For example, does a panic attack last longer than the expected 1/2 hour? Or is it a first-ever panic attack at age 50?

❖ Is there poor or paradoxical response or excessive side effect sensitivity to medications that are expected to be helpful for particular psychiatric symptoms?

❖ Is this new-onset disease without psychological precipitants such as new stressors or secondary gain?

❖ Is there an absence of a personal history or family history of major psychiatric disturbances?

Negative answers to these questions do not rule out the presence of Lyme disease. But a "yes" to most of the questions, especially in a patient with an out-of doors lifestyle or a pet, demands further clinical assessment. Dr. Fallon recommends Western blot serologic studies, lumbar puncture, neuropsychological testing, brain MRI and SPECT (single photon emission computerized tomography) scans. For more information, see www.columbia-lyme.org.

Other helpful tests may include PCR for Borrelia burgdorferi in blood, serum, cerebrospinal fluid (CSF) and urine, and/or Borrelia antigen testing in urine and CSF. Because blood tests at the top three general medical laboratories in the nation fail to detect 35% of Lyme antibodies, ILADS recommends use of laboratories that specialize in Lyme and other tick-borne illnesses. Contact www.lymediseaseassociation.org for a listing of recommended labs. Blood tests should not be used to rule out Lyme disease when there is a strong clinical presentation. Dr. Robert Bransfield, a psychiatrist who specializes in infectious causes of neuropsychiatric illness, has developed a structured clinical interview to assess seronegative patients. See www.mental-healthandillness.com

What to Do?

Screen patients for Lyme symptoms, especially those with complicated or atypical presentations. Be suspicious of Lyme if a patient mentions cognitive changes, extreme fatigue, weight changes, headaches, fibromyalgia, a history of "mono," "spider bites," multiple sclerosis, explosive rages or sudden mood swings. To elicit data about cognitive problems ask broad questions such as, "How do you think your brain is functioning?" or "How many things can you handle at one time?" Consider Lyme disease in children with behavioral changes, fatigue, school phobias, academic problems, learning disabilities, headaches, sore throats, GI complaints and/or migrating pains. In teens, Lyme disease may be complicated by drug abuse.

The Lyme spirochete is slow growing and can be difficult to treat, so be sure the patient is treated with appropriate antibiotics for at least two to four weeks beyond symptom resolution. Most individuals with Lyme disease respond to antibiotics, but the treatment course is highly patient specific. ILADS has published evidence-based guidelines for the diagnosis and treatment of Lyme and associated tick-borne diseases (Expert Rev Anti-Infect Ther 2004;2(Suppl):S1-S13). For more information, visit the ILADS website at www.ilads.org.

Some of the common symptoms of late-stage (tertiary) Lyme disease and other tick-borne coinfections:

❖ Profound fatigue

❖ Chills, sweats and skin flushes

❖ Night sweats

❖ Migrating arthralgias

❖ Muscle pains/twitching

❖ Sleep disturbances

❖ Severe headaches

❖ Shifting neurologic pains

❖ Tremors, shakiness

❖ Numbness, tingling sensations, pain often shifting and unusual in type

❖ Cranial nerve disturbance (Facial numbness, pain, tingling, paralysis, optic neuritis, trouble swallowing, distortion of smell or taste) See Category below.

The more severe neurological symptoms or disorders associated with late-stage Lyme disease:

❖ Progressive dementias

❖ Seizure disorders

❖ Strokes

❖ ALS-like syndrome (similar to Lou Gehrig's Disease)

❖ Guillain-Barre-like syndrome

❖ Multiple sclerosis-like syndrome

❖ Parkinson's disease-like syndrome

❖ Other extrapyramidal disorders

❖ Visual disturbances or loss

Checklist of common cognitive impairments in Lyme disease: (from Marian Rissenberg, Ph.D., clinical neuropsychologist)

Losses in fields of attention/executive functions such as inability to maintain divided or sustained attention, auditory and mental tracking and scanning, and memory retrieval can affect:

❖ Memory functions (lost items, missed appointments, retold stories)

❖ Language functions (halting speech, disrupted participation in conversation)

❖ Visual/Spatial Processing (Inability to find things, tendency to get lost, disorganization, difficulty reading, especially for enjoyment)

❖ Abstract reasoning (Poor problem-solving/decision-making)

❖ Slowed processing speed (Familiar tasks take longer, can't follow conversations well).

Most or all of these impairments, if caused by neuroborreliosis, may improve with proper antibiotics combined with other appropriate symptomatic treatments.

Edited by Drs. Virginia T. Sherr and Debra J. Solomon, Psychiatrists