Lyme & MS

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- *From*: "CaliforniaLyme" <CaliforniaLyme@xxxxxx>
- *Date*: 28 Aug 2005 09:07:52 −0700

1: J Neurol Neurosurg Psychiatry 1998 May;64 Suppl 1:S6−14 Related Articles, Books, LinkOut

Differential diagnosis of multiple sclerosis: contribution of magnetic resonance techniques.

Triulzi F, Scotti G.

Department of Neuroradiology, Scientific Institute H S Raffaele, Milan, Italy. triulzi.fabio@xxxxxx

It is widely accepted that magnetic resonance imaging (MRI) findings are not totally specific for the diagnosis of multiple sclerosis. White matter lesions that mimic those of multiple sclerosis may be detected in both normal volunteers and patients harbouring different diseases. Virtually all the characteristic features of multiple sclerosis are sometimes encountered in other conditions affecting predominantly the white matter. Different conditions such as vasculitis, subcortical atherosclerotic leukoencephalopathy, Lyme disease, or acute disseminated encephalomyelitis can be virtually indistinguishable from multiple sclerosis on conventional MR images. Also the FLAIR technique adds little to the differential diagnosis. The calculation of magnetisation transfer ratio (MT ratio) may be useful to better characterise some entities, such as vasculitis, from multiple sclerosis.

Publication Types:
Review
Review, Tutorial

PMID: 9647278 [PubMed − indexed for MEDLINE]

1: Ital J Neurol Sci 1992 Dec;13(9 Suppl 14):85−90 Related Articles, Books, LinkOut

Neurological complications of Lyme borreliosis.

Meier C.

Department of Neurology, University of Berne, Switzerland.

Lyme disease, like syphilis, a spirochetal infection, can appear with exacerbations and remissions in different stages. The clinical picture is marked by dermatological, neurological, rheumatic and cardiological complications. PNS complications appear in the second and third stage. Tick bite meningoradiculoneuritis neuritis (Garin−Bujadoux−Bannwarth−Syndrome), characterized by painful asymmetrical sensory and motor dysfunctions and inflamed CSF, is a typical manifestation of the second stage. Mononeuritis multiplex appearing in conjunction with acrodermatitis chronica atrophicans is a typical PNS manifestation of the third stage. CNS involvement may also occur in early and late stages of Lyme−Borreliosis, presenting as myelitis or progressive encephalomyelitis. Lyme−Borreliosis is a treatable condition, which should not be missed in the differential diagnosis of PNS and CNS disorders.

Publication Types:
Review
Review, Tutorial

PMID: 1345745 [PubMed − indexed for MEDLINE]

1: Med Clin (Barc) 1989 Sep 9;93(6):218−20 Related Articles, Books, LinkOut

[Meningoencephalomyelitis caused by Borrelia burgdorferi: a case without epidemiologic history or chronic migratory erythema]

[Article in Spanish]

Ponz E, Graus F, Alvarez R, Sarmiento X, Vidal J, Grau JM.

A patient is reported with meningoencephalomyelitis with polyradiculitis caused by Borrelia burgdorferi infection. Neurological features developed without previously known tick bite nor the characteristic skin lesion, chronic migratory erythema (CME). The vector of the disease (the tick Ixodes ricinus) exists in Spain, but only one case of meningopolyradiculitis with CME has been reported in Asturias. Our case stresses that B. burgdorferi infection should be suspected in cases of meningoencephalomyelitis or meningopolyradiculitis even without previous skin or joint lesion.

PMID: 2601480 [PubMed − indexed for MEDLINE]

1: Rev Neurol (Paris) 1988;144(12):765−75 Related Articles, Books,

LinkOut

[Multiple neurologic manifestations of Borrelia burgdorferi infection]
[Article in French]
Dupuis MJ.
Clinique St−Pierre, Ottignies, Belgique.
The neurological spectrum of Borrelia burgdorferi infections is still enlarging. We review epidemiological, pathological and serological data of Lyme disease. The course of the disease is divided in three stages: stage 1 during the first month is characterised by erythema chronicum migrans and associated manifestations; stage 2 includes not only the classical European meningoradiculitis but also less specific neurological symptoms: isolated lymphocytic meningitis with an acute or even relapsing course, apparently idiopathic facial palsy, neuritis of other cranial nerves, polyneuritis cranialis, Argyll−Robertson sign, peripheral nerve involvement, acute transverse myelitis, severe encephalitis, myositis. During stage 3, three to five months or longer after the onset of the disease, chronic arthritis, acrodermatitis chronica atrophicans and various neurological symptoms can be observed: chronic neuropathy with mainly sensory or motor signs, recurrent strokes due to cerebral angiopathy and progressive encephalomyelitis; this third stage the central nervous system involvement is characterised by slowly progressive or fluctuating course during months or years, ataxic or spastic gait disorder, bladder disturbances, cranial nerve dysfunction including optic atrophy and hypoacusia, dysarthria, focal and diffuse encephalopathy. This chronic central nervous system disease can mimic multiple sclerosis, anorexia nervosa, psychic disorders or subacute presenile dementia. It is often associated with pleiocytosis, abnormal EEG and evoked potentials, sometimes multifocal and mainly periventricular white matter lesions visualised by CT or MRI, and as a rule high antibody titers against Borrelia burgdorferi. High doses of penicillin can halt the disease, sometimes induce spectacular regression of symptoms or sometimes be inefficient; ceftriaxone could be a more powerful therapy. Similarities between syphilis and Borreliosis are multiple: both of these spirochetes contain plasmids, can be transmitted through the placenta and progress for many years through successive stages, with multiorgan symptoms, including parenchymatous and vascular lesions of the central nervous system. Borrelia burgdorferi is the new great imitator.
Publication Types: Review Review, Academic
PMID: 3070690 [PubMed − indexed for MEDLINE]

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1: J Neurol 1988 Jan;235(3):140−2 Related Articles, Books, LinkOut

Chronic borrelia encephalomyeloradiculitis with severe mental disturbance: immunosuppressive versus antibiotic therapy.

Kollikowski HH, Schwendemann G, Schulz M, Wilhelm H, Lehmann HJ.

Neurologische Universitatsklinik und Poliklinik Essen, Federal Republic of Germany.

A 57−year−old male was repeatedly admitted to hospital because of complex neurological symptoms, including radicular pain, disturbance of micturition, seizures, and severely impaired mental state. The diagnosis was encephalomyeloradiculitis possibly of viral origin, and treatment with immunosuppressants was initiated. An alternating course with a tendency towards improvement ensued. Two and a half years after the occurrence of the initial symptoms, identification of specific antibodies in the blood and CSF led to the diagnosis of borreliosis with CNS involvement. High−dose therapy with penicillin rapidly reduced the symptoms, beginning with those of radicular pain and followed by an improvement of the mental state. Attention is directed to the wide spectrum of clinical symptoms of chronic borreliosis with CNS involvement. Previous reports that immunosuppression may result in some improvement but with a tendency towards relapse are confirmed. Our encouraging treatment results support those of other reports that penicillin therapy may lead to improvement even at late chronic stages in patients with severe CNS deficits.

PMID: 3367160 [PubMed − indexed for MEDLINE]

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1: Nervenarzt 1989 Nov;60(11):706−9 Related Articles, Books, LinkOut

[Life−threatening encephalomyelitis in the 2d stage of Borrelia burgdorferi infection]

[Article in German]

Lessmann JJ, Liedtke U, Nord L, Ackermann R.

Neurologische Abteilung, St. Johannes−Hospital, Arnsberg.

PMID: 2586693 [PubMed − indexed for MEDLINE]

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1: Curr Treat Options Neurol 1999 May;1(2):139−146 Related Articles, Books

Neuroborreliosis (Nervous System Lyme Disease).

Halperin JJ.
North Shore University Hospital, 300 Community Drive, Manhasset, NY 11030, USA.

Treatment of nervous system Lyme disease depends on the severity and site of involvement. Although some data indicate that uncomplicated Lyme meningitis can be treated effectively with oral doxycycline, central nervous system infection (meningitis, radiculitis, encephalomyelitis, and cranial neuritis) is usually treated with parenteral antibiotics for 14 to 30 days, depending on disease severity, as is severe and progressive peripheral nervous system involvement. Ceftriaxone, 2 g/d, is the most commonly used regimen; cefotaxime, 2 g every 8 hours, appears to be equally effective. Penicillin in meningeal doses is also effective, perhaps slightly less so than the third−generation cephalosporins, but it is less convenient to administer. For patients with prohibitive drug allergies, treatment with oral doxycycline in doses of 300 to 400 mg/d may be effective. In patients with facial palsy or with indolent peripheral neuropathies, a trial of oral medication (doxycycline, 100 mg two or three times a day, or amoxicillin, 500 to 1000 mg three times a day for 21 to 30 days) is reasonable. Patients for whom this fails are treated with parenteral medications.

PMID: 11096703 [PubMed − as supplied by publisher]

1: Pol Merkuriusz Lek 2000 Aug;9(50):584−8 Related Articles, Books

[Neurologic syndromes in Lyme disease]

[Article in Polish]

Zajkowska JM, Hermanowska−Szpakowicz T, Kondrusik M, Pancewicz SA.

Kliniki Chorob Pasozytniczych i Neuroinfekcji AM w Bialymstoku.

Lyme borreliosis, multisystem disease, when involve neurologic system is named neuroborrelosis. Symptomatology of neuroborreliosis is rich and various. Difficulties in recognition are connected usually with long period from tick bite to late neurological signs. Any headache and psychiatric disorder in the course of Lyme disease could be an early manifestation of invasion of the CNS by the spirochaetes. Each part of neurologic system could be involved. The most common clinical picture of neuroborreliosis is meningitis with cranial or peripheral neuropathies connected with radiculalgia, less common are encephalitis and myelitis, neuropathies and polyneuropathies, encephalopathies.

Encephalomyelitis is the most serious form of neuroborreliosis. From the pathophysiologic point of view all cranial and peripheral neuropathies are forms of mononeuritis multiplex. Vasculitis and autoimmunology processes are present. Encephalopathy is due to neuroimmunomodulators, like lymphokines and by toxico−metabolic effect could be connected with each form of systemic borreliosis. Spheroplast L−form of borrelia could be responsible for difficulties with their eradication. Diagnosis of neuroborreliosis is based on culturing of B. burgdorferi from CSF, detection of specific antispirochaetal antibodies produced in subarachnoid space, detection of activated lymphocytes, other antigens detection in CSF (also after dissociation of complexes) or borrelial DNA sequences.

Publication Types:
Review
Review, Tutorial

PMID: 11081332 [PubMed − indexed for MEDLINE]

h Fr Pediatr 1990 Jan;47(1):39−41 Related Articles, Books, LinkOut
[Meningo−encephalomyelitis in Lyme disease]
[Article in French]
Pincemaille O, Pin I, Wroblewski I, Francois P, Gratacap B, Joannard A, Bost M.
Service de Medecine Infantile, C.H.R.U. de Grenoble.

A case of isolated central nervous system involvement in Lyme disease is described. A 13 year−old boy developed progressive spastic quadraparesis, chronic lymphocytic meningitis with a low CSF glucose concentration and demyelinating lesions of the white matter on MRI. The diagnosis was proved serologically by high antibody titers against Borrelia burgdorferi (BB) in the serum (1:5, 120) and CSF (1:1,280). There was evidence of specific intrathecal immune response against the BB antigen. The patient was treated with penicillin G and then ceftriaxone. The CSF abnormalities quickly improved but improvement of the neurologic symptoms was gradual and to date still incomplete.

PMID: 2322077 [PubMed − indexed for MEDLINE]

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1: Arch Phys Med Rehabil 2000 Apr;81(4):519−21 Related Articles, Books, LinkOut

Lyme neuroborreliosis mimics stroke: a case report.
Zhang Y, Lafontant G, Bonner FJ Jr.

Department of Physical Medicine and Rehabilitation, Graduate Hospital, Philadelphia, PA, USA.

Lyme neuroborreliosis is diagnostically challenging because of its

diverse manifestations. The well−documented neurologic spectrum includes lymphocytic meningitis, cranial neuropathy, and radiculoneuritis in the early disseminated stage; and peripheral neuropathy, chronic encephalomyelitis, and mild encephalopathy in the late persistent stage. This case report describes a 74−year−old man who developed progressive left hemiparesis and facial palsy. The patient was hospitalized to rule out a cerebral vascular accident. The diagnosis of Lyme borreliosis was established with serologic studies. The patient was treated with intravenous ceftriaxone and responded with rapid clinical and functional recovery. Lyme neuroborreliosis presenting as hemiparesis has rarely been reported. Prompt diagnosis and treatment appear to facilitate symptomatic relief and prevent persistent neurologic deficits.

PMID: 10768546 [PubMed − indexed for MEDLINE]

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1: Folia Neuropathol 1999;37(1):43−51 Related Articles, Books, LinkOut

Central nervous system infection caused by Borrelia burgdorferi. Clinico−pathological correlation of three post−mortem cases.

Bertrand E, Szpak GM, Pilkowska E, Habib N, Lipczynska−Lojkowska W, Rudnicka A, Tylewska−Wierzbanowska S, Kulczycki J.

Department of Neuropathology, Institute of Psychiatry and Neurology, Warszawa.

The spirochete Borrelia burgdorferi (B. burgdorferi) may cause severe meningoencephalomyelitis as the sole manifestation of Lyme borreliosis. We would like to present three such cases, where definite neuroborreliosis was clinically diagnosed in two cases and possible neuroborreliosis was recognized in one case. Alive spirochetes were isolated and cultured from blood and cerebrospinal fluid (CSF) in both definite cases. B. burgdorferi as the causative agent of the infection was confirmed in CSF by polymerase chain reaction (PCR) in one definite case. In the possible case spirochetes were cultured from blood and CSF. Alive spirochetes were not isolated, however anti−B. burgdorferi antibody value in serum was significantly elevated. On necropsy gross examination brain edema without focal changes was detected in two cases. Cerebral atrophy was seen in Case 3. Microscopically, lymphocytic infiltrates, microglial diffuse and nodular activation, spongiform changes, diffuse demyelination of the cerebral and cerebellar white matter, and diffuse astrocytosis, were characteristic pathological features in all presented cases. Multifocal, perivascular degenerative changes in the cerebral and cerebellar white matter were observed in the first case. Inflammatory changes in the nuclei and

roots of cranial nerves were present in the third case.

PMID: 10337063 [PubMed − indexed for MEDLINE]

1: Neurol Neurochir Pol 1998 Jan−Feb;32(1):111−24 Related Articles, Books, LinkOut

[Neurologic borreliosis]

[Article in Polish]

Zajkowska JM, Pancewicz SA, Hermanowska−Szpakowicz T.

Kliniki Chorob Pasozytniczych i Neuroinfekcji AM, Bialymstoku.

Any headache in the course of Lyme disease could be an early manifestation of invasion of the CNS by spirochaetes. The most characteristic symptoms of early neuroborreliosis are meningitis with cranial or peripheral neuropathies connected with radiculopathies, less common are encephalitis and myelitis, neuropathies, polyneuropathies, encephalopathies. Encephalomyelitis is the most serious form of neuroborreliosis. From the pathophysiologic point of view all cranial and peripheral neuropathies are forms of mononeuritis multiplex. Encephalopathy is due to neuroimmunomodulators, like lymphokins and or by toxico−metabolic effect could be connected with each form of systemic borreliosis. Certain diagnosis of neuroborreliosis is based on culturing of B. burgdorferi from CSF, detection of specific antispirochaetal antibodies produced in the subarachnoid space, detection of activated lymphocytes B producing specific antibodies, detection in CSF of other antigens of B. burgdorferi or DNA sequences.

PMID: 9631383 [PubMed − indexed for MEDLINE]

1: Br Med J 1970 Jan 3;1(687):30−2 Related Articles, Books, LinkOut

Rickettsial antibodies in multiple sclerosis.

Field EJ, Chambers M.

PMID: 4983591 [PubMed − indexed for MEDLINE] 1: Acta Virol 1982 Sep;26(5):403 Related Articles, Books, LinkOut

Isolation of the tick−borne encephalitis virus from a patient with

multiple sclerosis.

Vagabov RM, Skvortsova TM, Gofman YuP, Barinsky IF.

PMID: 6128910 [PubMed − indexed for MEDLINE]

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1: J Neurol 1987 Jan;234(1):40−3 Related Articles, Books, LinkOut

Chronic progressive neurological involvement in Borrelia burgdorferi infection.

Weder B, Wiedersheim P, Matter L, Steck A, Otto F.

Five patients with chronic meningitis were hospitalized several times for progressive neurological symptoms. The clinical manifestations included cranial neuritis, radiculoneuritis, myelitis and encephalitis. In two cases cerebral infarction occurred. The course was commonly characterized by a tendency to deteriorate. From the clinical point of view, it was repeatedly difficult to exclude multiple sclerosis or tuberculous meningitis. Finally, specific antibodies against Borrelia burgdorferi were detected by indirect immunofluorescence assay. The diagnosis of a borreliosis was not considered initially because there was no history of tick−bite or erythema chronicum migrans, and the neurological involvement of the central nervous system seemed unusual. The latency between the first symptoms and diagnosis varied from 3 months to 5 years. After a parenteral, high−dose therapy with penicillin, there was a significant improvement in all patients. In two cases, there was evidence of intrathecally produced antibodies to myelin basic protein.

PMID: 3819785 [PubMed − indexed for MEDLINE]

1: Rev Neurol (Paris) 1988;144(6−7):416−20 Related Articles, Books, LinkOut

[Borrelia burgdorferi encephalomyelitis]

[Article in French]

Depre A, Sindic CJ, Bukasa K, Bigaignon G, Laterre C.

Laboratoire de Neurochimie, Cliniques Universitaires Saint−Luc, Universite
Catholique de Louvain, Bruxelles, Belgique.

We report two patients with chronic encephalomyelitis due to Borrelia burgdorferi in whom the definite diagnosis was delayed because of atypical
clinical features. The first patient presented with chronic spastic paraparesis, slight ataxia and nystagmus of several years' duration. A tentative diagnosis of multiple sclerosis was made in spite of important
abnormalities of the CSF biological characteristics. The second patient presented with an acute aphasia and a bilateral Babinski's sign. He was thought
to suffer from benign herpetic meningoencephalitis. Several months later, as
the patient experienced relapses with cerebellar and spinal cord involvement,
falsely positive tests for syphilis were found and an antibiotic treatment was
given. High protein content, low glucose levels, pleocytosis and oligoclonal
bands were observed in all CSF samples, but the definite diagnosis was based on
the detection of serum and CSF antibodies against B. burgdorferi.

PMID: 3187297 [PubMed − indexed for MEDLINE]

1: Ter Arkh 1996;68(5):41−4 Related Articles, Books, LinkOut

[Chronic neuroborreliosis in Lyme disease]

[Article in Russian]

Logigian EL.

Acute and chronic syndromes of Lyme neuroborreliosis are recognized. Acute syndromes are clinically pronounced and comprise meningitis, neuritis of the cranial nerve, radiculoneuritis. Chronic syndromes are less evident. These are moderate encephalopathy and radiculoneuropathy. The diagnosis of the chronic syndrome is based on the presence of early

classic signs of BL. CSF must be tested for routine procedure and in pair with serum in the test for selective accumulation of antibodies to Bb in the CSF. Neurophysiological studies help detect memory defects. Electrophysiological tests verify radiculoneuropathy. NMR investigation of the brain and SPECT−scanning may demonstrate damage to the white brain matter. We have much experience with i.v. administration of ceftriaxone (2 g/day for 4 weeks) which relieved neurological syndromes several months later.

PMID: 9082597 [PubMed − indexed for MEDLINE]
1: Glas Srp Akad Nauka [Med] 1993;(43):225−8 Related Articles, Books, LinkOut

[Chronic encephalomyelitis caused by Borrelia burgdorferi. Case report]

[Article in Serbo−Croatian (Cyrillic)]

Pavlovic D, Levic Z, Dmitrovic R, Ocic G.

We present a female patient with typical third stage neuroborreliosis with progressive chronic encephalomyelitis. One month after a tick bite, in the first stage of Lyme disease, she had myalgias during ten days and after one year polyarthralgias and polyarthritis. Neurological problems occurred 15 years after the tick bite with headache, nystagmus, intentional tremor and spastic paraparesis with sphincter disturbances. Etiological diagnosis was established after three years. Cytobiochemical findings in cerebrospinal liquor were normal but oligoclonal IgG bands were found. Fluorescent antibody test was positive in serum (1:75) as well as ELISA (1:447). The patient reacted favourably to intravenous crystal penicillin 20 x 10(6) units daily during 18 days. Till now, she is in remission and has only mild paresis of the left leg.

PMID: 8262411 [PubMed − indexed for MEDLINE]

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- Previous by thread: ***naseem***
- Next by thread: ***2005: Sequential magnetic resonance imaging follow−up of multiple sclerosis***
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