

Borrelia infection – what next?

Thilo Schank, Naturopath, Ottweiler, Germany

Lyme Borreliosis

Lyme borreliosis or Lyme disease is a multisystemic infectious disease triggered by the *Borrelia burgdorferi* bacterium of the spirochete family. It can attack any organ, as well as the nervous system, joints and tissues. The disease occurs in humans and in all other mammals, as well as in birds. Transmission is chiefly by the wood tick of the genus *Ixodes*, and also in very rare cases by mosquitoes or horseflies.

Discovery and naming

The term 'Lyme borreliosis' stems from the names of the towns of Lyme and Old Lyme in the State of Connecticut in the USA, where the syndrome was first described in 1975 following the cumulative occurrence of joint inflammation in association with tick bites, as well as from the description of the disease as a borreliosis, which can be traced back to the systematic microbiological classification (genus) of the pathogen, named after the French bacteriologist Amédée Borrel.

Pathogen

The pathogen was named ***Borrelia burgdorferi*** after its Swiss discoverer Willy Burgdorfer, who in 1981 first traced the disease to ticks and in 1982 managed to culture the previously unknown pathogen.

A blood sample from the patient is examined for *Borrelia*- and co-infections in a special laboratory using biophysical methods. If live pathogens are detected, the test is positive. In addition to identifying the individual *Borrelia* species or co-infections, the severity of the infestation is determined according to a ten-level scale.

The bacteria ***Borrelia garnii*** and ***Borrelia afzelii*** are presumed to be further Lyme disease pathogens, and are likewise related to the syphilis pathogen.

Symptoms

The symptomatology of Lyme borreliosis is exceedingly complex. Many complaints caused by borreliosis can also occur in the case of other clinical pictures. For this reason, diagnosis is difficult.

Similarly to syphilis, which is caused by a related pathogen, the clinical symptoms of Lyme borreliosis are divided into **three** stages. It is important to bear in mind here that atypical progressions occur very frequently. It therefore makes sense not to rely too heavily on the division into stages. It should also be borne in mind that it can take weeks, months – indeed, in exceptional cases even years – for the disease to manifest. Between the individual stages of the disease, the patient may be completely free of complaints for weeks.

Legal obligation to notify the authorities

Unlike with tick-borne encephalitis, there is no obligation to notify the authorities in the case of Lyme disease. It may be, however, that a case of meningoencephalitis, which is a possible consequence of Lyme disease, has to be reported.

The Three Stages

Stage I

Erythema chronicum migrans, or Erythema migrans, may be termed the characteristic cardinal symptom of Stage I of the disease. Days to about 10 weeks after the tick bite,

a skin rash forms around the site of the bite. The rash spreads gradually in a circle, and may also appear on different parts of the body, which is why Erythema migrans is also called 'wandering rash'. Subsequently the erythema fades from the centre outwards, so that it is initially seen as a disc-shaped, and later as a ring-shaped redness.

Erythema migrans **only develops in about 50 per cent** of borreliosis diseases, but is a sure sign of a borrelia infection.

Further symptoms in stage I are, *inter alia*:

- Fever
- Myalgia (muscle pain)
- Headache
- Swelling of lymph nodes
- Severe sweating episodes
- Exhaustion
- Concentration problems
- Vertigo attacks
- 'Summer flu'

Stage II

In the second stage, severe organ symptoms may appear weeks to months after the tick bite. Inflammatory processes in peripheral nerves (neuritis) cause pseudoradicular syndromes with often unbearable pain. Bannwarth's meningoradiculitis may be viewed as a stage II cardinal symptom. Neurological deficits and strong pains may look like a slipped disc, with the patient experiencing pain particularly at night. The pain becomes worse under stress. Normal painkillers and non-steroidal anti-inflammatory drugs (NSAIDs) are of little help.

Very often, sensory and neurological disorders occur. The neurological disorders may occasionally be confused with carpal tunnel syndrome; patients have in the past been operated on based on such a misdiagnosis. Complete motor failure occurs fairly rarely, however.

Occasionally, cranial-nerve failure occurs. This most often involves paralysis of the

facial nerve (Nervus facialis), so-called peripheral facial paresis. The frequency of facial paresis is overestimated, however, possibly because of the fact that in many cases, facial paresis prompts the suspicion of Lyme disease. The following also occur frequently:

- Headaches radiating out from the nape of the neck
- Vertigo attacks
- Visual disturbances
- An increased resting pulse

A number of sufferers sometimes wake up with palpitations. Acute Lyme carditis can lead to myocardial insufficiency with enlargement of the heart. A typical yet fairly infrequent cutaneous manifestation of stage II is Lymphadenosis benigna cutis Bäfverstedt (borrelia lymphocytoma). This manifests as a reddish-to-pale-bluish tumour, usually on the earlobes, nipples or scrotum.

Stage III

Months to years after the tick bite, late-stage symptoms may set in. The following are especially typical:

- Arthritises (Lyme arthritis – jumps from joint to joint)
- Myositis (muscle inflammation)
- Bone pain
- Fibromyalgia
- Acrodermatitis chronica atrophicans Herxheimer (ACA)
- Encephalomyelitis

ACA is characterised by 'doughy', swollen, purple skin, especially on the hands and feet. The extensor sides of the joints are particularly affected. Later, the skin progressively atrophies. It becomes as thin as tissue paper and looks increasingly transparent.

Chronic encephalomyelitis is a relatively rare late sequela of the disease. The clinical picture of a stroke may also be mimicked in the late stage. Actual vascular occlusions can even occur. Only the evidence of the

relevant antibodies in the cerebrospinal fluid can prove that a borrelia infection is the cause of these vascular occlusions. The angiogram shows no differences.

How are the Pathogens transmitted?

Borrelia burgdorferi is almost always transmitted by a tick bite.

Soft ticks and sheep ticks are shed from stalks and low bushes.

Soft ticks, however, deliberately make their way towards their victim.

Like all insects, ticks follow an attractant to reach their target.

The most important attractant for ticks is butyric acid, a decomposition product found particularly in fairly old human sweat.

Borrelia is primarily transmitted by the sheep tick (*Ixodes ricinus*) in Europe, by *Ixodes dammini* and *Ixodes pacificus* in America, and by *Ixodes persulcatus* in East Asia. Because the bacterium is found in the midgut of the tick, the pathogen is not transmitted immediately at the time of the tick bite, as is the case with the TBE pathogen. Normally, *Borrelia burgdorferi* passes into the human body at the very earliest approximately 12 to 24 hours after the tick bite, along with the excretions of the tick into the body of its human host.

If you spot a sucking tick on your body before this time period has elapsed, an infection is fairly unlikely. You should remove the tick as swiftly as possible, and in the proper way. This is important to prevent the gut contents of the tick from entering your body via the puncture channel when the tick is removed.

Under no circumstances should you throw away the tick; it can be examined for the presence of *Borrelia burgdorferi* (send the tick to the lab along with a blood sample from the patient).

Although other transmission pathways are

rare, they do occur. Hence, *Borrelia burgdorferi* also seems to be transmitted via a species of biting fly found chiefly in the vicinity of pastures. Transmission of Lyme disease through fly-, mosquito-, horsefly- and flea-bites as well as a wasp sting is thought to be possible. If a 'wandering rash' occurs after such a bite or sting, you should go to the doctor's at once.

How can I protect myself?

- Ideally, wear fresh, light-coloured clothing
- Long trousers
- Long socks – in forest areas pull up over trouser legs if necessary
- Long sleeves

Immediately after spending time outdoors you should change your clothes after first examining your body.

Information, article, studies, interviews on Lyme disease and other diseases transmitted by ticks

Lyme borreliosis is a multiorgan systemic disease which in principle can attack any organ but which manifests chiefly in the skin, nerves, the joint, tendon and muscular system and the heart.

Despite the impression to the contrary – frequently given in public – the diagnosis and therapeutic monitoring of Lyme disease is characterised by numerous difficulties, which can lead to misdiagnoses both in terms of false-positive as well as false-negative findings.

The laboratory diagnosis of this disease is based primarily on indirect serological testing such as ELISA or EIA and Immunoblot (or Western Blot). These tests, however, can only identify the antibodies that have formed as a result of the conflict between host and pathogen. Consequently, no statement on pathogen activity can be made. This is also why these tests are not suitable for therapeutic monitoring. Direct detection of pathogens by culture, and

alternatively, DNA detection through PCR (polymerase chain reaction) are also used in cases where this examination would be indicated, but are not yet part of routine diagnostics. In addition, there is the matter of laboratory diagnosis not being standardised. For this reason, one laboratory's test can yield positive results whilst another's yields negative results. An assessment based on symptomatology can be difficult if no disease manifestations typical of borreliosis occur during the course, since Lyme borreliosis can also cause numerous disease manifestations that may also occur in the case of illnesses with other causes.

Since reliable therapy markers are absent with which a cure in the sense of the elimination of the pathogen can be determined with a sufficiently high degree of probability, the study material for treatment is also inadequate and contradictory in terms of results. In addition, placebo-controlled studies on the efficacy of the antibiotics normally used and of the therapy regime based on them are lacking. What constitutes the ideal antibiotic therapy (type of antibiotic, dosage, length of treatment, repeat courses) according to the form and stage of the disease is therefore a contentious subject.

Ticks can transmit a whole other range of pathogens to humans, *inter alia* the TBE (tick-borne encephalitis) virus as well as human-pathogen species of Babesia, Anaplasma (Ehrlichia) and Rickettsia. Lyme disease is often confused with TBE, which occurs endemically in only a few regions of Germany and leads to between 300 and 500 new cases per year. Whilst there is a vaccine for TBE, there is as yet no Lyme disease vaccine available.

Against this background, for almost two decades there have been wide-ranging medical controversies on the prevention, pathogenesis, diagnosis, treatment and therapeutic monitoring of this disease. Whilst in the USA these have for many

years led to massive public debates, these controversies do not seem to have penetrated public awareness in the German-speaking countries of Europe.

The care and research situation in Germany and the EU in this sphere can be described as extremely poor. Urgently needed improvements are attempted only hesitantly or half-heartedly, if at all.

Despite its epidemiological scope, Lyme disease leads a decidedly shadowy existence in terms of research promotion and health-policy prioritisation. Patients who have been diagnosed with Lyme disease or who are suspected of having it often become lost in a labyrinth of contradictory medical opinion.

The fact that around 100,000 people in Germany suffer from chronic Lyme disease and that approx. 50,000 to 120,000 acute new infections – of which one-third will become chronic – are added to that each year, should be reason enough to deal in greater depth with this insidious infection.

Removing ticks

Suitable tools for removing ticks can be purchased at the pharmacy. Anyone who is unsure how to use tick cards or tick tweezers should seek assistance from their doctor or therapist.

The general rule is: the quicker, the better!

The use of old home remedies such as glue or oil is to be completely discouraged. These methods cause the death of the tick through suffocation, before which it vomits into the wound. It is at this point that infectious material enters the bloodstream.

Borreliae in the immune system

As bacteria, Borreliae live in principle extracellularly; however, they can also survive intracellularly. For this, they do not prefer any particular host cell over another. In this way, they can temporarily elude the host's defences, since they become

'invisible' to the immune system when in the host's cell.

Borrelia can vary from a highly active spiral form to a fairly inactive spherical form. It is thus capable of surviving unfavourable situations such as a rise in temperature owing to fever, pH fluctuations in the colloidal fluid and antibiotics treatment. This inactive spherical form can be maintained for about 3 weeks. For this reason, treatment must be of the appropriate length in the case of targeted antibiotic treatment. *Borrelia*'s shape-shifting ability might also explain the typical course of the disease in phases, sometimes with long symptom-free periods.

When *Borreliae* are in their active – i.e. spiral – form, they can move through tissue, just like our defence cells. This means that they can spread very rapidly, even in tissue with a very limited blood supply.

In their spherical, fairly inactive variant, they are spread – virtually unrecognised by the body's defence mechanisms – via the bloodstream, and hence extremely quickly.

The pathogen is capable of modifying our antibodies, the cytokines. Thus, the regulatory relationship of aggression and suppression mechanisms in our immune system is modified to the detriment of aggression. From this alone, Lyme disease's essential tendency towards chronicity can be explained.

It would appear that *Borreliae* are able to alter their surface proteins at frequent intervals. This would modify the specific recognition code, leaving our defences only able to react belatedly and slowly.

The body's own cells, i.e. those belonging to the system, have a standard recognition code relating to their own antibodies and defence cells (factor H).

Borreliae are apparently able to bind this factor H to themselves. In this way, they

appear to the defence system to be a part of the body, and are not therefore attacked. In this situation, the immune system must increase both the irritability and the sensitivity of its defences in order to overcome the pathogen. This could be the reason why Lyme disease is even nowadays still often misdiagnosed as a 'rheumatic' ailment.

Treatment of Lyme disease

Successful treatment of Lyme disease is seldom to be achieved via a single treatment or a single medication. That's why in my practice I work according to a broad concept of different measures which work in tandem and complement one another.

Essentially, I approach the problem from different angles simultaneously.

Usually, patients come to my practice having already undergone antibiotic treatment for Lyme disease.

Where acute infections are involved, I work together with the patients' GPs!

Generally speaking, the patients are then given sufficient antibiotics for 4–6 weeks.

At the same time, patients are given one or more preparations for colon therapy for the duration of the antibiotic treatment. Not every patient has problems when taking an antibiotic, but to protect the intestinal mucosa I like to prescribe one or more preparations after testing via Bicom, tensor or EAV.

At the same time, I give the patients teasel-root extract for a period of 6 months.

Twenty-five drops of this should be taken daily in a litre of water.

Homeopathic *Borrelia* may also be helpful when administered in a high potency, depending on potency testing (usually C 200, C 400 or C 1000).

With the aid of the Bicom device, the exact location of the current infection (think of the spiral and spherical forms) can be tested out. Here, the use of just one measuring point is not sufficient.

Therefore, I always check the following EAV points **on both hands and both feet!**

- Lymph
- Nerve degeneration
- Triple warmer
- Spleen
- Joints
- Kidneys
- Bladder
- Connective tissue

If one of the tested points then displays an infection, the main infection of the body or meridian can then be determined via a kinesiological and/or tensor test.

For elimination, I then use a drop of blood and saliva from the person in question, as well as the 'Borreliae' ampoule. Where possible, the tick itself may also be placed in the input cup.

For this I use little glass vials, which the patient can bring along time and again.

The program should also be fine-tuned to the patient and precisely tested.

The following approach has proved its worth:

1. Stimulate intestine and kidneys
2. Stimulate meridian showing the main infection with the standard program
3. Test the individual therapy types (Ai, Di, H+Di, etc.) on the Bicom device
4. Test frequency
5. Wobble **Yes** (can also be tested, but is usually 'Yes')
6. Test out amplification (64 up to 0.025)
7. Set bandpass sweep speed
8. Test therapy time (usually 25 to 30 minutes)
9. Test inputs and outputs
10. Include globules, Bicom minerals or oil for support

In particular, the testing of the inputs and outputs is important here. Even just the treatment of a single meridian can be very helpful – so test, test, and test again.

Those who have the CTT test kit can also perform an elimination with the 'ticks' ampoule in further sessions. Apply program 197, but test for amplification and time/speed too.

In addition, the pink elimination ampoule 'Elimination/Detoxification' can be used in further sessions with program 198 in order to stabilise the body.

Important: Don't eliminate too much in a single session, and always check the detoxifying organs!!

I hope that I've managed to capture your interest and attention on this important subject, and wish you much success in treating Lyme disease.

Kindest regards,

Naturopath Thilo Schank

CASE STUDIES

Case 1: 24-year-old female patient

Food allergy and rheumatic complaints.

Treatment

After successful food elimination and finally a return to normal eating, the patient found that the following symptoms persisted:

- Both hands falling asleep, as with carpal tunnel syndrome
- Swollen wrists
- Knee, toe and wrist pain
- Fatigue (noticeably better after food elimination)

I tested all the meridians with the borreliae ampoule and recorded a positive result everywhere.

After about 6 sessions most of the meridians were no longer infected, but the symptoms were still present.

When I then treated the joint meridian the symptoms all but disappeared. (The patient is still coming for treatment.)

Case 2: 68-year-old male patient

Knee complaints of unknown origin. Patient was transferred by orthopaedic surgeon with a prescription for physiotherapy.

Treatment

After testing the usual physiotherapy measures I could find no injury at the root of the knee complaints.

Symptoms:

- Unexplained swelling in the entire knee-joint area
- Obvious restriction of movement
- Pain under load
- Muscle cramps in the knee area
- Sensory disorders in the knee area

EAV testing proved positive for Lyme disease. Afterwards the patient recalled a tick bite some 5 years earlier which had been treated with antibiotics.

Blood-test results from the GP confirmed the suspicion.

The patient did not want to be treated with antibiotics, so I was able to begin with the elimination at once.

After the 5th treatment (as described above) there was obvious improvement in mobility and in pain under load. Simultaneous lymph drainage and physiotherapy therefore brought about quicker success.

Case 3: 43-year-old female patient

Swelling of the knee after a fall on a slippery floor.

Treatment

Initially, purely orthopaedic/physiotherapeutic treatment, which, however, had brought no success after 7 months. No improvement after arthroscopy either, although nothing striking with regard to the complaints.

After 'Borrelia' ampoule tested positive on joint and connective-tissue meridian and appropriate treatment was given, there was an obvious improvement in her condition.

I set treatment frequency at twice weekly, and was able to discontinue the therapy after 5 weeks.

The complaints improved visibly and testing showed that none of the meridians was now infected.

The patient had had no previous complaints whatsoever! Presumably, the fall had triggered the symptoms.

Case 4: 60-year-old female patient

Constantly recurring joint complaints and bilateral carpal tunnel syndrome.

The patient reported several tick bites over the last 10 years and fairly frequent antibiotic treatment by her GP for typical Erythema migrans.

Both orthopaedic and physiotherapy treatments on various occasions.

Treatment

After examining the entire spinal column and the joints, I tested the body for

infection and found positive 'Borreliae' in almost all meridians.

The patient was treated a total of twelve times with the Bicom device at one-week intervals.

After a further six sessions to support the organs of elimination as well as physiotherapy, the complaints disappeared.

Case 5: 35-year-old male patient, acute tick bite

The patient came to the surgery in the evening and reported that he had been working in a forest for the past two days, during which time he had received several tick bites.

Treatment

After a full-body examination I detected two remaining ticks, which I removed and kept for elimination. The patient came back the following day and showed me a conspicuous spot, with a clearly recognisable red circle around the tick bite.

After a visit to the GP and a blood test, antibiotics were administered and treatment with the tick and the 'Borreliae' ampoule simultaneously given.

After just three sessions, no conspicuous-looking areas of skin remained; likewise, testing revealed no further infection.

Check-ups after four and twelve weeks also failed to reveal anything conspicuous.