

Cast of Characters

Borrelia, Babesia, Bartonella and
Ehrlichiosis

Borrelia

- One of 8 genera of spirochetes
- 100ds of species in these 8 genera
- “Borrelia” is the genus, “Burgdorferi” the species
- Other famous spirochetes: *Treponema pallidum* (syphilis), *Leptospira* (*Leptospira interrogans* from animal feces contaminated drinking water, common in Maui, New Mexico, etc)
- Bb sensu lato includes *B. Afzelii*, *B. garinii*, *B. lonstari*, *B. andersonii* and many others
- Bb sensu stricto refers only to Bb, but includes many species that cause identical symptoms
- In Europe, 5 strains of Bb sensu lato, in Japan 61 strains
- Also be aware that microbes constantly exchange via plasmids DNA with each other and we found Bb microbes with properties usually only found in *Babesia* or *Mycoplasma*, etc. There are no fixed boundaries between many of these microbes.

Borrelia: 6 major sites of infection

1. **large joints** (*Bb sensu stricto*) and connective tissue: onset 4.3 months after insect bite, often self limited (4 years). Flare ups during Herxheimer reactions very common.
 - *Bb* has recently been found by us as one of the causes of spinal osteoporosis, disc degeneration and many other “orthopedic” problems.
2. **Skin** and connective tissue (*B. afzelii*):
 - acrodermatitis chronica atrophicans
 - general collagen breakdown (premature aging)
 - collagen diseases

Borrelia

3. CNS (B.garinii), PNS and ANS: after insect bite it only takes a few hours before spirochetes are found in CNS even though it takes on average 2 years before symptoms are established. Most common symptom: brain fog and short term memory loss. Later stages demyelination. Severe early changes in SPECT scan (functional), MRI changes much later (physical)

Borrelia: CNS problems

- Physical: epileptic seizures, **insomnia**, tremor, ataxia, movement disorders (torticollis, etc.)
- Emotional: irritability (key symptom in children), depression, bi-phasic behavior (manic depression), bouts of anger, listlessness;
- Mental: confusion, **difficulty thinking**, poor short term **memory**, increasingly messy household and desk, difficulty finding the right word, feeling of information overload;

Borrelia: CNS Mixed Pictures

- can resemble or imitate any known psychiatric illness.
- Chronic Fatigue (more severe in the early afternoon);
- Lack of endurance;
- Non-healing infections in the jaw bone, devitalized teeth, dental pain;
- Fibromyalgia;
- Multiple Chemical Sensitivity;
- loss of zest for life,
- sensitivity to electric appliances.

Borrelia: Peripheral Nervous System Problems:

- Paresthesia
- Burning
- vibration
- numbness
- shooting pains
- Cranial Nerve Problems:
 - Facial nerve: Bell's palsy (60 % are caused by Lyme disease, 30 % by one of six common viruses from the herpes family, such as EBV, Herpes simplex type I, type II, type 6 etc);
 - **Trigeminal nerve: sense of vibration in the face, TMJ and facial pain, headache, tension and cramps in the face/skull/jaw; dental pulpitis, formation of jaw bone cavitations**

Borrelia: Cranial Nerve Problems

- Ears (VII, VIII): tinnitus, vertigo, and hypersensitivity to noise;
- Eyes (II, III, IV, VI): decreasing and changing eye sight (fluctuates during the day), light sensitivity, floaters;
- Vagus (X), Glossopharyngeal nerve (IX) and Hypoglossus (XII): difficulty swallowing, faulty swallowing, reflux, hiatus hernia, heart palpitations, supraventricular arrhythmias.
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Borrelia

4. Heart:

Lyme carditis is difficult to diagnose with current methods (PET scan positive early on) and has multiple symptoms from arrhythmia to angina. Has to be taken serious with first symptoms

Borrelia

5. Kidney/Bladder: the highest concentration of tissue spirochetes has been found in kidney and bladder.

Symptoms often include

- interstitial cystitis
- prostatitis (Babesia often also involved)
- sexual dysfunction
- loss of libido
- pelvic pain
- menstrual disorders
- filtration problems in the kidney (low specific weight of urine)
- urethritis after intercourse (the spirochetes are attracted during intercourse to the urethra and cause acute inflammation).

Borrelia

- 6. Immune system infection** (white blood cells, thymus, brain, lymphnodes, adrenals, etc)
- non-healing infections in the jaw bone (also Babesia, Bartonella)
 - devitalized teeth
 - dental pain
 - Immune system failure: with all known secondary illnesses such as herpes virus infection, intestinal parasites, malaise, hair loss, hepatitis C
 - Treatment: Rizoles, KMT#1 and BioPure Herbs

Babesia

- intra-cellular Malaria like protozoal organism. Infects red-cells. 2/3rds of Lyme clients also have Babesia, which is hard to diagnose: over 17 antigen-different subspecies. Most common: B.microti, WA-1 strain in Western States and B. divergens and others in Europe
- Diagnosis: best is ART or long term observation of blood under darkfield microscope. Babesia tends to leave dying cells while under darkfield observation.

Babesia

- Vertigo
 - headache fatigue
 - **dental problems: accelerated tooth decay and cavitation formation**
 - **TMJ problems**
 - eye problems (floaters and blurry vision)
 - weight loss and abdominal problems (GERD)
 - fibromyalgia,
 - shortness of breath
 - malaise
 - drenching night sweats and fever/chills during Herxheimer reactions
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- Tx: think Rizoles, KMT #2, Mepron or Noni, Artemisinin and Oxo

Bartonella

- *B.henselae* is the most commonly found intracellular co-infection today found in rbc's, endothelial cells, bone marrow and macrophages. 70% of the cats in Italy are infected with it (cat scratch disease), cat-to-human transfer is common. *B.quintana* brought down Napoleon's troupes in Russia, the true cause for his defeat. The microbes are found today in his troupe's teeth in the mass graves.
- Other types are found on a regular basis.

Bartonella

Symptoms:

- swollen lymph glands
- endocarditis
- hepatitis
- neovascularization
- fatigue
- low grade fever
- jaw bone cavitations
- devitalized teeth
- often co-infection in ALS
- fibromyalgia and joint pain

for tx think:

Rizoles and KMT #1, Zithro, Doxy and Rifampin together or: Polygonum and Stephania root

Ehrlichiosis

- Human granulocytic Ehrlichiosis (HGE) is caused by *Anaplasma phagocytophila*
- Human monocytic Ehrlichiosis (HME) is caused by *Ehrlichia chaffeensis*
- Often found in clients that have contact with horses and farm animals
- Very common in dogs and their owners

Ehrlichiosis

Symptoms:

- Fever (only after initial infection, sometimes recurrent for years)
- Myalgia and arthralgia
- Headache
- Lymphopenia and thrombocytopenia
- Hyponatremia
- Mental confusion
- Skin rashes, genital and oral ulcers
- Severe pain syndromes
- Nausea and vomiting (acute flare-ups)

For tx think:

- Rifampin and doxycycline (elevates interferon gamma)
- and colchicine (read papers by Michael Rask – not to be used during dental surgery or pregnancy) or colchicum drops