Human Lyme Culture Confirmed Persistence of Borrelia burgdorferi

Preac-Mursic, V., H. W. Pfister, et al. (1993). "First isolation of Borrelia burgdorferi from an iris biopsy." J Clin Neuroophthalmol **13**(3): 155-61; discussion 162.

The persistence of Borrelia burgdorferi in six patients is described. Borrelia burgdorferi has been cultivated from iris biopsy, skin biopsy, and cerebrospinal fluid also after antibiotic therapy for Lyme borreliosis. Lyme Serology: IgG antibodies to B. burgdorferi were positive, IgM negative in four patients; in two patients both IgM and IgG were negative. Antibiotic therapy may abrogate the antibody response to the infection as shown by our results. Patients may have subclinical or clinical disease without diagnostic antibody titers. Persistence of B. burgdorferi cannot be excluded when the serum is negative for antibodies against it.

Haupl, T., G. Hahn, et al. (1993). "Persistence of Borrelia burgdorferi in ligamentous tissue from a patient with chronic Lyme borreliosis." Arthritis Rheum **36**(11): 1621-6.

OBJECTIVE. To document the persistence of Borrelia burgdorferi in ligamentous tissue samples obtained from a woman with chronic Lyme borreliosis. METHODS. Spirochetes were isolated from samples of ligamentous tissue, and the spirochetes were characterized antigenetically and by molecular biology techniques. The ligamentous tissue was examined by electron microscopy. Humoral and cellular immune responses were analyzed. RESULTS. Choroiditis was the first recognized manifestation of Lyme disease in this patient. **Despite antibiotic therapy, there was progression to a chronic stage, with multisystem manifestations.** The initially significant immune system activation was followed by a loss of the specific humoral immune response and a decrease in the cellular immune response to B burgdorferi over the course of the disease. **"Trigger finger" developed, and a portion of the flexor retinaculum obtained at surgery was cultured. Viable spirochetes were identified. Ultramorphologically, the spirochetes were situated between collagen fibers and along fibroblasts, some of which were deeply invaginated by these organisms. The cultured bacteria were identified as B burgdorferi by reactions with specific immune sera and monoclonal antibodies, and by polymerase chain reaction amplification and Southern blot hybridization techniques.** CONCLUSION. To our knowledge, this is the first report of the isolation of B burgdorferi from ligamentous tissue. This suggests that tendon tissues serve as a specific site of spirochete residence in human hosts.

Oksi, J., M. Marjamaki, et al. (1999). "Borrelia burgdorferi detected by culture and PCR in clinical relapse of disseminated Lyme borreliosis." Ann Med **31**(3): 225-32.

A total of 165 patients with disseminated Lyme borreliosis (diagnosed in 1990-94, all seropositive except one culture-positive patient) were followed after antibiotic treatment, and 32 of them were regarded as having a clinically defined treatment failure. Of the 165 patients, 136 were tested by polymerase chain reaction (PCR) during the follow-up. PCR was positive from the plasma of 14 patients 0-30 months after discontinuation of the treatment, and 12 of these patients had a clinical relapse. In addition, **Borrelia burgdorferi was cultured from the blood of three patients during the follow-up. All three patients belonged to the group with relapse, and two of them were also PCR positive.**