Atrophosclerodermic manifestations of lyme borreliosis

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This review summarizes the literature on scleratrophic skin lesions as a manifestation of a *Borrelia* infection. An association of morphea with Lyme *borreliosis* LB was mainly reported from Middle-European Countries, Japan and South America.

B. afzelii has been identified predominantly from the chronic skin lesions of acrodermatitis chronica atrophicans (ACA) and has been cultivated from morphea lesions in isolated cases. Scleratrophic skin lesions like morphea, lichen sclerosus etatrophicus (LSA) and anetoderma have been observed in coexistence with ACA. Since all these diseases show clinical and histological similarities, they might have a common origin. The laboratory results that point to a *borrelial* origin of these diseases, however, are contradictory.

Antibodies against *B. burgdorferi* were detected in up to 50% of patients. Borrelia DNA was detected in up to 33% of morphea and 50% of LSA patients. *Borreliae* were visualized on histological slides by polyclonal antibodies in up to 69% of morphea and 63% of LSA patients. In other reports, no evidence of *Borrelia* associated morphea or LSA has been reported.

For anetoderma, single case reports showed positive *Borrelia* serology and a response to antibiotic treatment. The response of scleratrophic skin lesions to antibiotic treatment varies and can be seen in patients with or without a proven association to a *Borrelia* infection. This suggests that scleratrophic diseases might be of heterogeneous origin, but a *Borrelia*

infection could be one cause of these dermatoses.

The pathologic changes in scleratrophic skin lesions point to connective tissues damage, which can be caused by *B. burgdorferi*. A high affinity of Borrelia to collagen and degradation of fibers is the central process that has not yet received attention.

It can be assumed that the scleratrophic skin lesions can be caused by *Borrelia* infection in certain countries where *B. afzelii* is endemic.

More information: Elisabeth Aberer et al, Atrophosclerodermic Manifestations of Lyme Borreliosis, *The Open Dermatology Journal* (2016). DOI: 10.2174/1874372201610010027

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