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Possible Role of *Borrelia burgdorferi* Sensu Lato Infection in Lichen Sclerosus

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Objective To assess the evidence for *Borrelia burgdorferi* sensu lato infection in patients with lichen sclerosus by focus-floating microscopy.

Setting Dermatology department of a university hospital.

Design Tissue sections were stained with a polyclonal *B burgdorferi* antibody using standard histological equipment and then scanned simultaneously in 2 planes: horizontally in a serpentinelike pattern and vertically by focusing through the thickness of the section, ie, focus-floating microscopy. Part of the material was also investigated by *Borrelia*-specific polymerase chain reaction.

Patients The study population comprised 61 cases of lichen sclerosus and 118 controls (60 negative controls and 68 positive controls).

Main Outcome Measure The presence of *B burgdorferi* sensu lato within tissue specimens.

Results Using focus-floating microscopy, we detected *Borrelia* species in 38 of 60 cases (63%) of lichen sclerosus and in 61 of 68 (90%) of positive controls of classic borreliosis, but *Borrelia* species were absent in all negative controls. *Borrelia* species were detected significantly more often in early inflammatory-rich (31 of 39 [80%]) than in late inflammatory-poor (7 of 21 [33.3%]) cases ($P = .001$). Polymerase chain reaction findings were positive in 25 of 68 positive controls (37%) and negative in all 11 cases of lichen sclerosus and all 15 negative controls.

Conclusions Focus-floating microscopy is a reliable method to detect *Borrelia* species in tissue sections. The frequent detection of this microorganism, especially in early lichen sclerosus, points to a specific involvement of *B burgdorferi* or other similar strains in the development or as a trigger of this disease.

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