Lyme disease in an experimental cat model

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Abstract

This report concerns the susceptibility of the domestic cat to Lyme disease. Three strains of Borrelia burgdorferi used in the study were administered intradermally (106 live cells) to three groups of cats, five cats in each group. At biweekly intervals, over a 23-week period, blood samples were obtained for hematologic and serologic analysis from each cat. Each 4 weeks during the study, one cat from each group was necropsied for gross- and histopathologic examination. Seroconversion was observed during weeks 3 and 4 in all inoculated animals. Cyclic changes, characterized by decrease in percentage of neutrophils accompanied by increase in percentage of lymphocytes and eosinophils, were observed 11 weeks after initial exposure to the agent and at 2–4-week intervals afterwards for the following 12 weeks of the study. Similar cyclic changes in the IgG levels corresponding to those of the white blood cells were also observed. Histopathologic changes were observed in the stifle joints and in all major organs of infected cats 16 weeks after initial exposure to B. burgdorferi. Overt clinical signs were minimal, but included mild pyrexia and lameness first observed 4–6 weeks following exposure to the agent.