REINFECTION WITH BORRELIA BURGDORFERI

SIR—Lyme borreliosis, a tick-borne multisystem disorder caused by the spirochaete Borrelia burgdorferi, typically begins with erythema chronicum migrans and is sometimes followed by involvement of the heart, joints, and nervous system.\(^1\) Neurological manifestations include meningoradiculitis (Bannwarth's syndrome), meningitis, and encephalitis.\(^2\) The clinical diagnosis can be confirmed by finding antibodies to B burgdorferi by indirect immunofluorescence or ELISA.\(^5\) We describe here a serologically and bacteriologically confirmed case of possible reinfection.

In September, 1983, 2 weeks after a tick bite on the right arm, a 59-year-old woman had erythema migrans around the bite site. She presented on Nov 15 with a painful meningoradiculitis and bilateral papilloedema. CSF analysis showed a lymphocytic pleocytosis (330 cells/\(\mu\)l) and an increase in total protein (82 mg/dl). Her serum IgG antibody titre against B burgdorferi rose from less than 16 to 256 within 4 weeks (figure). IgM antibodies were not detected, and borreliae could not be isolated from the CSF. The patient was treated with intravenous penicillin (20 meganunits daily for 5 days, then 10 meganunits daily for 5 days) and oral methylprednisolone (70 mg daily over 2 weeks with decreasing dosage). On discharge (Dec 12) she was free of pain, with a slightly improved vision. Follow-up examinations showed residual bilateral papillatrophy. In October, 1984, the CSF was normal (1 cell/\(\mu\)l, total protein 37 mg/dl).

On Oct 2, 1985, the patient visited a forest. She did not recall any arthropod bites but on Oct 5 a painful redness developed on the right side of her chest. She presented on Oct 7 with an erythema chronicum migrans, about 20 \(\times\) 14 cm. Spirochaetes were isolated at biopsy of the skin around the lesion after 4 weeks\(^5\) incubation in modified Kelly's medium. Her serum IgG antibody titre against B burgdorferi had been 16 on June 27, 1985 but had risen to 64 on Oct 17 without a corresponding IgM increase. Treatment with minocycline 200 mg daily by mouth for 14 days was successfully by mouth for 14 days was successfully

In 1983 our patient had Lyme borreliosis with Bannwarth's syndrome. Her serum IgG titre against B burgdorferi became negative within 10 months. Erythema chronicum migrans recurred 2 years later. The absence of IgM antibodies in acute manifestations of Lyme borreliosis has been described before.\(^6\) The 1985 episode presented after the patient had stayed for a long time in a forest in an area known to be endemic for B burgdorferi infection. Despite the absence of a known tick bite we think that the second attack was a reinfection and not a recurrence. The skin sites involved were different in the two episodes.

Patients with Bannwarth's syndrome usually retain a significant IgG titre against B burgdorferi for several years.\(^8\) Our patient's antibody titre was insignificant by 10 months. The antibiotic and/or corticosteroid treatment given for that first attack may explain the short-lived immunity, permitting reinfection after only 2 years.

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