(4%) had leukoencephalitis. At the time of examination chronic neurologic abnormalities had been present from three months to 14 years, usually with little progression. Six months after a two week course of intravenous Ceftriaxine (2 g daily), 17 patients (63%) had improved, 6 (22%) had improved and then relapsed, and 4 (15%) had no change in their condition. The early signs of infection were erythema migrans (85%), and headache and neck stiffness in 41%. The most common early neurologic abnormality was a facial palsy in 30%. Arthritis had occurred in 70% before the chronic neurologic symptoms developed and it was still present in ten patients (37%) when the chronic neurologic abnormalities were noted. (Logigian EL et al. Chronic neurologic manifestations of Lyme disease). N Engl J Med Nov 22, 1990; 323: 1438-44).

COMMENT. The criteria for case inclusion in this study were previous signs of Lyme disease, neurologic symptoms lasting at least three months that could not be attributed to another cause, and current evidence of humoral or cellular immunity to B. burgdorferi, as shown by elevated serum IgG or IgM antibody titer of at least 1:400, five or more IgG antibody bands to spirochetal polypeptides, or a stimulation index of 10 or more in response to Borrelia antigens. The chronic neurologic abnormalities began months to years after the onset of infection, sometimes after long periods of latency and similar to the course of neurosyphilis. The most common form of chronic CNS involvement was subacute encephalopathy affecting memory, mood, and sleep sometimes with subtle disturbances in language. Diagnosis could be difficult because of the nonspecific nature of the symptoms. Although this report concerns adults, the findings might be pertinent to Lyme disease contracted during childhood.

MUSCLE DISEASE

DIAGNOSIS OF POLYMYOSITIS

The criteria for the diagnosis of polymyositis, the differential diagnosis, and treatment are reported from the Division of Rheumatology and Internal Medicine, Mayo Clinic, Rochester, MN. A muscle biopsy is considered the standard diagnostic procedure for polymyositis but it is not infallible. Characteristic features are inflammatory mononuclear cell infiltration, degenerating and regenerating muscle fibers, and central nuclei. Electromyographic findings are characteristic but not specific. They include insertional activity, fibrillation potentials, motor unit potentials of increased frequency and decreased duration, and normal conduction velocity in nerves. The most useful blood test in polymyositis is a serum CK determination but this may be normal in about 2% of patients. The MM fraction constitutes the majority of the CK in polymyositis, the MB fraction may be increased because of skeletal muscle regeneration and less often because of myocarditis. Treatment with high dose corticosteroids is administered as early as

possible in the course of the disease. The longer the delay before diagnosis and appropriate treatment, the worse the prognosis. The best known dermatological change is Gottron's sign, an erythema over the knuckles. Gottron's rash is a scaly, violaceous rash on various areas of the body including the hands, elbows, and knees as well as a heliotrope rash on the eyelids. Calcinosis occurs in 13% of childhood cases but in less than 5% of adult cases of polymyositis. No therapy has proved effective for calcinosis and occasionally, surgical excision of painful calcific areas has been necessary. When polymyositis develops during pregnancy the incidence of fetal loss is 32%. Women with a history of inactive polymyositis should be warned that pregnancy might exacerbate the disease. Myositis has been reported with human immune deficiency virus infection and may closely mimic the myopathic changes seen in polymyositis. (Bunch TW. Polymyositis: A case history approach to the differential diagnosis and treatment. Mayo Clin Proc Nov 1990; 65:1480-1497).

COMMENT. A good review of polymyositis and dermatomyositis in children is provided by Pachman LM (Juvenile dermatomyositis. Peditr Clin North Am 1986; 33:1097-1117). An edited summary of a combined clinical staff conference at the NIH (Plotz PH et al. Current concepts in the idiopathic inflammatory myopathies: Polymyositis, dermatomyositis, and related disorders. Ann Intern Med July 1989; 111:143-156) provides an excellent review of biopsy findings, causes, pathogenesis, studies on humoral immunity, and treatment.

MRI IN CHILDHOOD DERMATOMYOSITIS

The demonstration of muscle involvement using the MRI in four patients with dermatomyositis is reported from the Departments of Radiology and Pediatrics, University of Michigan Hospitals, Ann Arbor, MI. Ages ranged from 4½ to 18 years (median 8 years). The affected muscles had increased signal intensity on the T2 weighted images and normal appearance on the T1 weighted sequence. The mean intensity ratio for the patients with dermatomyositis differed significantly from that of four normal control children. Muscle groups with higher intensity ratios had lower scores on functional testing. Follow-up MRI scans demonstrated normal findings after treatment, coincident with progressive clinical improvement. (Hernandez RJ et al. Magnetic resonance imaging appearance of the muscles in childhood dermatomyositis. J Pediatr Oct 1990; 117:546-50).

COMMENT. The authors concluded that the MRI may be useful in the evaluation of dermatomyositis in children because it 1) is noninvasive, 2) has clear signal changes in affected muscle, 3) shows positive results at an early stage, 4) is a guide for biopsy, and 5) may assist in monitoring of the disease progress. The MRI appearances of muscles affected by hypotonic syndromes and muscular dystrophies differ from those of muscles affected by dermatomyositis. Ultrasound has been used in the diagnosis of patients with muscular dystrophy.