

New York, NY and other centers in Germany, Belgium and the U.S. Symptoms manifested within or soon after the first year of life and muscle biopsies showed ragged red fibers and decreased respiratory chain activity. There was good correlation between clinical severity and degree of mtDNA depletion in muscle. An infant who died at 2 months had lactic acidosis and less than 2% of the normal level of mtDNA, while 4 children with relatively milder myopathy had no lactic acidosis and 8-34% residual mtDNA (Tritschler H-J et al. Mitochondrial myopathy of childhood associated with depletion of mitochondrial DNA. Neurology Jan 1992; 42:209-217). (Reprints: Dr. Eric A. Schon, Department of Neurology, Rm. BB324, Columbia University, 630 West 168th St., New York, NY 10032.)

**COMMENT.** Depletion of mtDNA is considered a distinct entity distinguished from other known mitochondrial disorders with COX deficiency or with multiple respiratory chain defects (fatal and benign infantile myopathies, Leigh's syndrome, Kearns-Sayre syndrome). The principal clinical features of patients with mtDNA depletion and mitochondrial myopathy are weakness, hypotonia and respiratory distress.

#### **MITOCHONDRIAL MYOPATHY WITH DNA DELETIONS**

Deletions of mitochondrial DNA (mtDNA) are reported in 19 of 56 patients with mitochondrial myopathy examined in the Department of Neurology and Neuromuscular Research Laboratory, Mayo Clinic, Rochester, MN. All 19 patients had progressive external ophthalmoplegia and 12 had complete or partial Kearns-Sayre syndrome. The age at onset varied from 4 to 48 years, 10 presenting in childhood. Patients with more than 50% deleted mtDNA had an earlier onset of symptoms and a higher proportion of ragged red fibers and cytochrome c oxidase negative fibers than patients with less than 50% deleted mtDNA (Yamamoto M et al. Mitochondrial DNA deletions in mitochondrial cytopathies: observations in 19 patients. Neurology Nov 1991; 41:1822-1828). (Reprints: Dr. Andrew G. Engel, Department of Neurology, Mayo Clinic, Rochester MN 55905.)

**COMMENT.** This paper confirms that large scale mtDNA deletions are present in a high proportion of patients with mitochondrial myopathy associated with progressive external ophthalmoplegia and that these deletions are a hallmark of Kearns-Sayre syndrome. Kearns-Sayre syndrome consists of progressive external ophthalmoplegia, pigmentary retinopathy, cardiac conduction abnormalities, and mitochondrial myopathy involving facial, cervical and limb muscles and increased CSF protein.

#### **LEIGH'S SYNDROME WITH TWO MITOCHONDRIAL DEFECTS**

A female infant with a biochemical defect of the respiratory chain and of  $\beta$ -oxidation and neuropathological changes typical for Leigh's disease is reported from the Department of Neurology, University of Würzburg, Departments of Pediatrics and Pathology, University of Homburg, and Department of Pediatrics, University of Freiburg, Germany. The infant was