ATTENTION DEFICIT DISORDERS

FINE MOTOR SKILLS IN ATTENTION DEFICIT HYPERACTIVITY DISORDER AND DEVELOPMENTAL COORDINATION DISORDER

The manual dexterity subtests of the Movement Assessment Battery for Children, and handwriting and computerized graphomotor tasks were used to investigate motor skills of a group of 12 children (11 males, 1 female; mean age 9 years 7 months) with attention deficit hyperactivity disorder (ADHD) and developmental coordination disorder (DCD) and 12 controls at University Medical Centre Groningen, the Netherlands, ADHD-DCD children had severely impaired fine motor abilities, they made more errors and were slower in completing manual dexterity tests (p=0.001), their handwriting was poorer (p=0.002), and on a flower trail graphomotor task, they drew more rapidly and fluently but were less accurate than controls (p=0.002). When treated with methylphenidate, manual dexterity was improved (p=0.003), handwriting quality improved (p=0.042), and lines on the graphomotor task were less fluent (p=0.028) but more accurate (p=0.01). It is estimated that 50% of children with ADHD have comorbid DCD. (Flapper BCT, Houwen S, Schoemaker MM, Fine motor skills and effects of methylphenidate in children with attention-deficit hyperactivity disorder and developmental coordination disorder. Dev Med Child Neurol March 2006;48:165-169). (Respond: Dr Boudien CT Flapper, Department of Pediatrics, University Medical Center Groningen, PO Box 30.001, 9700 RB Groningen, the Netherlands).

COMMENT. The prevalence of incoordination and other "subtle" neurologic abnormalities in hyperactive children with attention deficits (ADHD) was recognized by the NINDB Task force in 1966, when the term "minimal brain dysfunction (MBD)" was coined for the syndrome. Subtle abnormal neurological signs included dysgraphia, dyspraxias (clumsiness), and incoordination, and are now described under DCD. In the DSM criteria for the diagnosis of ADHD, reference to impaired motor performance, clumsiness, and incoordination has been omitted. The early concept of an organic or neurobiologic syndrome, as embraced by many neurologists, has been rejected in favor of a symptom diagnosis. In Scandinavia, the syndrome of DAMP emphasizes the association of neurological signs of motor dysfunction, perceptual dysfunction, and attention deficits. The overlap of ADHD and DAMP, the higher prevalence of DAMP among children with neurodevelopmental disorders (Landgren M et al. Dev Med Child Neurol 1996;38:891-906; Ped Neur Briefs Nov 1996), and the response of subtle signs of neurologic dysfunction to methylphenidate, are findings that should favor the inclusion of signs of neurologic and perceptual dysfunction in the criteria for diagnosis of ADHD. The term "attention deficit hyperactivity & coordination disorder (ADH&CD)" would seem more appropriate. This modification of diagnostic criteria would allow a more objective diagnosis of the syndrome, earlier recognition and treatment, and more effective remediation of the associated motor incoordination and perceptual deficits. Neurologists should be more involved with the ADHD diagnostic criteria and their management. Children with ADHD complicated by incoordination and other symptoms of DCD are at increased risk for learning and especially language and reading problems (Kadesjo B, Gillberg C. J Am Acad Child Adolesc Psychiatry 1999;38:820-828).

The relation of brain myelination to the development of language in 100 infants and toddlers is investigated using three dimensional MRI at the University of Barcelona, Spain. (Pujol J, et al. Neurology Feb (1 of 2) 2006;66:339-343). The volume of myelinated white matter was measured in language-related temporal and frontal regions and in the central sensorimotor region. A spurt in vocabulary coincided with the end of a rapid myelination stage in language areas at 18 to 24 months.

SEIZURE DISORDERS

LONG-TERM OUTCOME OF CHILDHOOD-ONSET EPILEPSY

A prospective, long-term population-based study was conducted to determine the evolution of drug resistance and remission in 144 patients with childhood-onset epilepsy followed at University of Turku, Finland, and Epilepsy Research Group, Berlin, Germany. At the end of 37-year follow-up (range 11-42 years) since their first seizure before age 16 years, 67% were in terminal remission, on or off antiepileptic drugs. Remission was early, within the first year of treatment in 31% of patients; it was late, with a mean delay of 9 years in 50%. The course was remitting-relapsing before achieving terminal remission in 19%. Twenty seven (19%) patients were drug resistant from onset and never entered 5-year remission during follow-up. The etiology of the epilepsy syndrome was important in outcome. Symptomatic, localization-related and generalized epilepsies were more often drug resistant than idiopathic epilepsies, either generalized or focal. (Sillanpaa M, Schmidt D. Natural history of treated childhood-onset epilepsy: prospective, long-term population-based study. **Brain** March 2006;129:617-624). (Respond: Prof Dr Dieter Schmidt, Epilepsy Research Group, Goethestrasse 5, D-14163 Berlin, Germany).

COMMENT. The study finds that initial success or failure to achieve remission is not a reliable indicator of long-term outcome of childhood-onset epilepsy. Remission, defined as a seizure-free period of 5 or more consecutive years, is achieved by the end of a long followup period in 50% of patients without relapse, and in 20% after relapse. One-third has a poor outcome, with persistent seizures after a remission or without any remission period.

QUALITY OF LIFE FOLLOWING EPILEPSY SURGERY

A prospective study of the families of 35 children with intractable epilepsy who underwent epilepsy surgery at Sydney Children's Hospital, NSW, Australia, found that those who were seizure-free had a greater improvement in the quality of life (QOL) than children with persistent seizures. The overall QOL questionnaire and subscales assessing cognitive, social, emotional, behavioral, and physical status, completed preoperatively and at 6 to 18 months after surgery, show significant improvement. (Sabaz M, Lawson JA, Cairns DR, et al. The impact of epilepsy surgery on quality of life in children. **Neurology** Feb (2 of 2) 2006;66:557-561). (Reprints: Dr Annie Bye, Department of Neurology, Sydney Children's Hospital, High Street, Randwick, NSW, 2031, Australia).

COMMENT. Epilepsy surgery improves QOL in children with seizures controlled.