

PEDIATRIC NEUROLOGY BRIEFS

A MONTHLY JOURNAL REVIEW

J. GORDON MILLICHAP, M.D., F.R.C.P., EDITOR

Vol. 7, No. 8

August 1993

BEHAVIOR AND ATTENTION DEFICITS

BRAIN DAMAGE AND VIOLENCE

The neurologist's role in understanding violence and brain damage as a neurological defense of violent crime are reviewed by neurologists at Georgetown University, Washington, DC. Pincus stresses the role of biological factors as contributory to aggressive behavior and notes that cognitive impairment, lapses of attention, and psychotic symptoms are more common among violent compared to nonviolent criminals. He concludes that programs of research targeting brain damage and child abuse as causes of violence might lead to more effective preventive methods of management than prison expansion. Resnak points out that the majority of violent criminals have no history or evidence of brain damage and concludes that neurology will not solve the mystery of violent behavior and murder. Admitting that many murderers have a higher incidence of epilepsy, head injury, child abuse, malnutrition, and learning disabilities, but the majority of epileptics, abused, and mentally retarded do not commit violence. Both experts agree that brain damage can decrease the threshold for violent, impulsive behavior, and serve as a mitigating factor in determining responsibility and defense for some crimes. (Pincus JH. Neurologist's role in understanding violence. Arch Neurol Aug 1993;50:867-869. Restak R. The neurological defense of violent crime. 'Insanity defense' retooled. Arch Neurol Aug 1993;50:869-871). (Reprints: Dr Resnak, Neurology Associates, 1800 R St NW C-3, Washington, DC; Dr Pincus, Georgetown University Hospital, 3800 Reservoir Rd NW, Washington, DC 20007).

COMMENT. Three criteria are required by law for alleged brain damage to serve as a mitigating factor in determining responsibility. 1) Is there

PEDIATRIC NEUROLOGY BRIEFS (ISSN 1043-3155) © 1993 covers selected articles from the world literature and is published monthly. Subscription requests (\$39 US; add \$12 for airmail outside North America) may be sent to: **Pediatric Neurology Briefs - J. Gordon Millichap, M.D., F.R.C.P.-Editor**, P.O. Box 11391, Chicago, IL 60611, USA. The Editor is Professor Emeritus at Northwestern Univ Medical School and Children's Memorial Hospital. **PNB** is a continuing education service designed to expedite and facilitate current scientific information for physicians and other health professionals.

evidence of *brain damage* (deviation from normal brain structure) and is it responsible for a *deficit* (impairment or loss or alteration of intelligence and emotion, and behavioral abnormality)?; 2) Is the deficit a contributing cause of the defendant's crime?; 3) Without the deficit and resulting behavior, would the crime not have happened? Of 14 death row juveniles who had committed capital crimes, 11 had suffered head trauma, 9 had abnormal EEGs or neurologic examinations, and 12 gave a history of physical or sexual abuse (Lewis DO, Pincus JH et al. Am J Psychiatry 1988;145:584). Brain damage may unleash violence, but it does not explain it, according to Hachinski V. (Arch Neurol Aug 1993;50:871).

A study of frontal lobe-subcortical circuits in the mediation of a wide range of human behavioral disorders, reported from the Departments of Neurology, Psychiatry and Biobehavioral Sciences, UCLA School of Medicine, Los Angeles, CA (Cummings JL. Arch Neurol Aug 1993;50:873-880) demonstrates that we should not entirely dismiss a possible role of brain damage in crimes of violence.

ADHD AND DRIVING RISKS

A 3- to 5- year follow-up survey of driving-related risks and outcomes in 35 adolescents and young adults with attention deficit hyperactivity disorder (ADHD) and 36 control subjects is reported from the Departments of Psychiatry, Neurology, and Pediatrics, University of Massachusetts Medical Center, Worcester, MA. ADHD subjects had a significantly greater risk than controls for traffic citations, especially for speeding, motor vehicle crashes, automobile injuries, and unsound driving habits. A subgroup of teenagers with ADHD complicated by oppositional defiant and conduct disorders were at highest risk for deviant driving skills/habits and negative driving-related outcomes. Even before receiving a license, the ADHD group was three times more likely to have driven without a valid license than the control group. During their brief driving careers, the ADHD group was involved in a total of 54 crashes compared with 16 for controls, and they were four times as likely to have been at fault. (Barkley RA et al. Driving-related risks and outcomes of attention deficit hyperactivity disorder in adolescents and young adults: A 3- to 5-year follow-up survey. Pediatrics Aug 1993;92:212-218). (Reprints: RA Barkley PhD, Dept of Psychiatry, University of Massachusetts Medical Center, 55 Lake Avenue North, Worcester, MA 01655).

COMMENT. These results corroborate previous studies showing a correlation between ADHD in adolescents and young adults and an increased rate of motor vehicle crashes, especially in those not treated with stimulant medication. (Weiss G, Hechtman LT. Hyperactive Children Grown Up. New York, NY: Guilford Press; 1986). ADHD patients who