VASCULAR DISORDERS

ROLE OF TESTOSTERONE IN PEDIATRIC STROKE

To elucidate the male preponderance in pediatric stroke, researchers at University of Munster, Germany, Hospital for Sick Children Toronto, Canada, and other centers measured total testosterone in 72 children with arterial ischemic stroke (AIS), 52 with cerebral sinovenous thrombosis (CSVT), and in 109 healthy controls. Testosterone levels above the 90th percentile for age and gender were detected in 10 (13.9%) children with AIS and 10 (19.2%) with CSVT, totaling 16.7% with stroke, as compared with 2 (1.8%) controls (p=0.002). Adjusting for variables, elevated testosterone was independently associated with a 4-5-fold increased risk of stroke. The odds of cerebral thromboembolism in boys was increased 1.3-fold for each 1nm/L increase in testosterone. Testosterone levels were elevated less often in girls compared with boys (10.5% vs 20.9%) and not correlated with the risk of stroke. (Normann S, de Veber G, Fobker M, et al. Role of endogenous testosterone concentration in pediatric stroke. **Ann Neurol** Dec 2009;66:754-758). (Respond: Dr Nowak-Gottl. E-mail: leagottl@uni-muenster.de).

COMMENT. The male preponderance of pediatric stroke is associated with elevated endogenous testosterone levels. Studies in adults with increased risk of stroke related to anabolic/androgenic steroid abuse point to a testosterone-mediated hypercoaguability and platelet aggregation as a mechanism.

Investigation of mortality from childhood stroke in UK, 1921-2000, using the National Statistics database, found an initial decline followed by a steep rise in the 1940s. Subsequently, rates declined from the late 1960s onwards. Males had a higher mortality rate than females. Infants <1 year old had the highest rate that fell sharply in early childhood and rose again in late adolescence. Hemorrhagic stroke accounted for 71% stroke deaths. Mortality declined with each successive generation since the 1950s, suggesting the influence of prenatal or perinatal factors. (Mallick AA. **Arch Dis Child** Jan 2010;95:12-19).

INTRACRANIAL SPACE-OCCUPYING LESIONS

ENDOSCOPIC TREATMENT OF MIDDLE FOSSA ARACHNOID CYSTS

Clinical and radiological presentation, indications to treat, surgical complications, and follow-up were investigated in 40 children with middle fossa arachnoid cysts (MFAC) treated at two centers in Florence, Italy, and Liverpool, UK. Thirty were male and 10 female, mean age 7.8 years, mean follow-up 21 months. Cysts were unilateral, left sided in 28 and right in 12. All underwent endoscopic cystocisternal fenestration as first line surgical treatment. At presentation, intracranial hypertension occurred in 18 (45%), with headache in 15 (37.5%); functional symptoms occurred in 11 (27%) and included

head bobbing and speech delay; epilepsy occurred in 8 (20%), and developmental delay in 6 (15%), skull deformity in 9 (22.5%), and focal neurological signs in 8 (20%). Indications for surgery included focal neurological deficits, skull deformities, and/or symptoms or signs of increased intracranial pressure. Epilepsy was an indication only if refractory to medication, if associated with radiological evidence of mass effect and/or increase in size of cyst. Complete resolution of signs and/or symptoms was obtained in 25 (62.5%), and significant improvement in 12 (30%). Headache was relieved in 10 (66%) and improved in 4 (26%), skull deformity improved in all 9 cases (100%), and epilepsy control was improved in 7 (87%). Postoperative complications included subdural hygroma in 5 (12.5%), subdural hemorrhage in 4 (10%) at 3 to 60 months after surgery, and failure of surgery in 4 (10%). Endoscopic fenestration was as effective and safe but less invasive than cyst shunting. (Spacca B, Kandasamy J, Mallucci CL, Genitori L. Endoscopic treatment of middle fossa arachnoid cysts: a series of 40 patients treated endoscopically in two centres. **Childs Nerv Syst** Feb 2010;26:163-172). (Respond: Dr CL Mallucci, Department of Paediatric Neurosurgery, Royal Liverpool Children's Hospital "Alder Hey", Liverpool, UK. E-mail. mallucci@ntlworld.com).

COMMENT. A critical analysis of the surgical treatment of arachnoid cysts is provided in a commentary by Dr C Di Rocco, Rome, Italy (**Childs Nerv System** 2010;26:172-175). When analyzed objectively, the cause-effect relationship of the "classical" clinical manifestations of temporal arachnoid cyst is questionable. Headaches, reported in about 70% symptomatic cases, are almost always nonspecific and unrelated to cyst volume and intracystic pressure. In patients with epilepsy, the concordance between cyst location and semiology of seizures is rare whereas contralateral EEG abnormalities are common. Intracranial bleeding occurs in 2.2% of patients with MFAC, and this risk was not prevented by surgical operation in the present series. The rate of postoperative subdural hygroma requiring shunt or other surgical treatment is at least 2-fold that reported for spontaneous or posttraumatic hygromas. Other neurosurgeons have expressed similar reservations regarding surgery and especially prophylactic surgery for temporal arachnoid cyst.

PRIMARY CARE UK RECORDS OF BRAIN TUMOR SIGNS AND SYMPTOMS

Symptoms and signs of brain tumor in children with and without brain tumors were compared in a UK population-based retrospective analysis of primary care records by researchers at University of York and other centers in the UK. Participants were 195 children, mean age 7.31 (range 1-14 years), newly diagnosed with brain tumors and 285 controls. Between birth and diagnosis with brain tumor symptoms and signs, cases with tumor consulted more often than controls, and their consultation rate with >1 suggestive symptom increased in the 2 years before diagnosis Symptom prevalence was higher among cases than controls, with 3.29 times as many consultations with >1 suggestive symptom. Suggestive symptoms in case children in order of prevalence included vomiting (74% cases), headache (59%), visual problems (44%), unsteadiness (42%), and anorexia (31%). In controls, suggestive symptoms were vomiting (43%), anorexia (18%), headache (15%), and visual (15%) and hearing (11%) problems. In 4 years before