H-J, Suh E-S, et al. The role of neuroimaging in children and adolescents with recurrent headaches – multicenter study. **Headache** March 2011;51:403-408). (Respond: Dr Y-I Rho, Department of Pediatrics, Chosun University Hospital, 588 Seosukdung, Donggu, Gwangin 501-717, Korea).

COMMENT. Increased parental and physician demand, and fear of liability are some reasons listed for the excess use of neuroimaging in pediatric headache. Practice parameters include an abnormal neurological examination or history of neurologic dysfunction (Lewis DW et al. **Neurology** 2002;59:490-498). Routine imaging is not indicated in patients with a normal neurologic examination (Silberstein SD. **Neurology** 2000;55:754-762). Clinical predictors of space-occupying lesions include headaches of <1 month duration, absent family history of migraine, abnormal neurologic examination, gait abnormalities, and occurrence of seizures (Medina LS et al. **Radiology** 1997;202:819-824). MRI indications proposed by Maytal J et al (**Pediatrics** 1995;96:413-416) include atypical recurrent headaches, recent change in the character of the headache, persistent vomiting, abnormal neurologic findings, and occurrence in younger age groups. Straussberg R et al (Arch Neurol 1993;50:130) report 5 patients, ages 10 months to 4 years, with headache as the initial symptom of intracranial tumor, three having a normal neurologic exam. An abnormal neurologic examination is the strongest predictive factor for a brain tumor as a cause of headache but is not an essential criterion for MRI. Change in the type of headache is not a reliable factor.

DEMYELINATING DISEASES

CORTICAL LESIONS IN MULTIPLE SCLEROSIS

The presence and frequency of cortical lesions (CLs) in 24 pediatric patients with relapsing-remitting multiple sclerosis (RRMS) were compared to 15 adult patients with RRMS and 10 pediatric healthy controls, in a study at University Ospedale San Raffaele, Milan and other centers in Italy. Pediatric patients had shorter disease duration and lower disability than adults. On MRI DIR sequences 3-dimensional T1-weighted scans, white matter lesion number and volume did not differ between pediatric and adult patients. CLs occurred in 2 (8%) pediatric patients and 10 (66%) adult patients. After adjusting for age, gender, and disease duration, median CL volume and number of CLs were lower in pediatric than adult patients with RRMS (p=0.0003). All CLs in pediatric patients were located at the boundary between white and gray matter. CL formation is not likely to be an initial event in pediatric MS. (Absinta M, Rocca MA, Moiola L, et al. Cortical lesions in children with multiple sclerosis. **Neurology** March 2011;76:910-913). (Respond and reprints: Dr Massimo Filippi, Scientific Institute and University Ospedale San Raffaele, Via Olgettina 60, 20132 Milan, Italy. E-mail: massimo.filippi@hsr.it).

COMMENT. Cortical lesions are rare in pediatric patients with MS. Compared to adults, children with MS have a relative sparing of brain gray matter. Clinically, an earlier age of onset is associated with specific features including more frequent encephalopathy, seizures, and brainstem and cerebellar symptoms during the first event. (Waubant E, Chabas D. Pediatric multiple sclerosis. **Curr Treat Options Neurol.** 2009

May;11(3):203-10). These researchers at the UCSF MS Center report the initial brain MRI scan of younger patients shows more frequent involvement of the posterior fossa and higher numbers of ovoid, ill-defined T2-bright foci that often partially resolve on the follow-up scan. The spinal fluid in younger patients may fail to reveal oligoclonal bands or elevated IgG index at disease onset. No therapy for MS in children has been approved by the US Food and Drug Administration. As a result, physicians have started to use off-label drugs approved for adults.

VASCULAR DISORDERS

FACTORS ASSOCIATED WITH AGGRESSIVE CARE AND MORTALITY OF PEDIATRIC STROKE

Researchers at University of Utah, Salt Lake City, performed a retrospective study of 10,236 children hospitalized and discharged with a diagnosis of hemorrhagic or ischemic stroke in the USA during years 2000 and 2003. Demographics, predisposing conditions, and intensive or aggressive care were compared by type of stroke and hospital, Children's or non-Children's. Hemorrhagic stroke, occurring in 43% of stroke discharges, was more common in younger children (60% of all infant strokes), and had a higher mortality. Ischemic stroke was more common in older children (50% in children >10 years of age), and more frequently associated with a predisposing condition (leukemia, congenital heart disease, sickle cell anemia). Rates of intensive (mechanical ventilation, advanced monitoring) and aggressive (pharmacological therapy or invasive interventions) care were 30% at Children's and 15% at non-Children's Hospitals, and similar by stroke type. Older children, those with hemorrhagic stroke and predisposing conditions, and those treated at a Children's Hospital received aggressive care. In-hospital mortality (11% with hemorrhagic stroke and 7% ischemic stroke) was associated with hemorrhagic stroke and aggressive care. (Statler KD, Dong L, Nielsen DM, Bratton SL. Pediatric stroke: clinical characteristics, acute care utilization patterns, and mortality. **Childs Nerv Syst** April 2011;27:565-573). (Dr Statler, Department of Pediatrics, University of Utah, PO Box 2581289, 295 Chipeta Way, Salt Lake City, UT 84158. E-mail: kim.statler@hsc.utah.edu).

COMMENT. Pediatric stroke patients receive similar acute care for hemorrhagic or ischemic stroke. Intensive and aggressive care is provided infrequently but is more common at Children's than non-Children's Hospitals. Mortality is relatively high (7-11%) and might be reduced by implemention of recently published treatment recommendations (Roach ES et al. **Stroke** 2008;39:2644-2691; DeVeber G. **Lancet Neurol** 2005;4:432-436; Cardenas JF et al. **Childs Nerv Syst** Feb 2011;Epub).

Moyamoya disease in early infancy. (Amlie-Lefond C, et al. **Pediatr Neurol** April 2011;44:299-302). A 2-month-old boy presenting with stroke secondary to moyamoya disease, and successfully treated with revascularization surgery at age 3 months is reported from the Medical College of Wisconsin, Milwaukee, WI. A rare occurrence in infancy, moyamoya patients are at risk of further ischemic events.