

Annotated Bibliography

Nolan Altman, Richard S. Boyer, James A. Brunberg, Allen D. Elster, Ajax E. George, David B. Hackney, Robert B. Lufkin, Jeffrey S. Ross, Joel D. Swartz, Jane L. Weissman, and Samuel M. Wolpert

Brain Tumors and Cysts

Valdueza JM, Westphal M, Vortmeyer A, Muller D, Padberg B, Herrmann H-D. **Central neurocytoma: clinical, immunohistologic, and biologic findings of a human neuroglial progenitor tumor.** *Surg Neurol* 1996;45:49-56

The study presents clinical and immunohistologic findings of five patients with neurocytomas. These lesions are characterized by intraventricular location, occurrence in young adults, favorable prognosis, and histologic appearance similar to oligodendrogliomas. □J.S.R.

Phakomatoses

Joy P, Roberts C, North K, de Silva M. **Neuropsychological function and MRI abnormalities in neurofibromatosis type 1.** *Dev Med Child Neurol* 1995;37:906-914

Forty children (8 to 16 years of age) with neurofibromatosis type 1 but no clinical evidence of either neurologic abnormality or severe intellectual dysfunction underwent MR imaging of the brain. In 25, regions of increased signal intensity were demonstrated on T2-weighted images to involve the optic tract (n = 16), basal ganglia or thalamus (n = 15), brain stem (n = 11), cerebellum (n = 7), and cortex (n = 5). Neuropsychological testing demonstrated a correlation between the presence of these MR alterations and reductions in global IQ, attention, and visuospatial function as compared with patients not having these MR alterations. □J.A.B.

Pediatric Neuroradiology and Congenital Malformations

Choudhury AR, Bandey SA, Haleen A, Sharif H. **Glial heterotopias of the nose.** *Childs Nerv Syst* 1996;12:43-47

Two neonates with glial heterotopias of the nose, one with and the other without an intracranial connection, are presented. Distinction from a nasofrontal encephalocele was not always possible. One lesion had a fibrous stalk extending through a small supraorbital skull defect. □R.S.B.

Prasad VSSV, Reddy DR, Murty JMK. **Cervico-thoracic neurenteric cyst: clinicoradiological correlation of embryogenesis.** *Childs Nerv Syst* 1996;12:48-51

Two examples of cervicodorsal neurenteric cysts, one dorsal and the other ventral to the spinal cord, are presented. Associated malformations included Klippel-Feil anomaly, meningocele, and spinal dysraphism. □R.S.B.

Tresser N, Rolf C, Cohen M. **Plasma cell granulomas of the brain: pediatric case presentation and review of the literature.** *Childs Nerv Syst* 1996;12:52-57

A single case of a plasma cell granuloma (inflammatory pseudotumor) of the brain in a 5-year-old child is described with a review of the literature of this rare lesion. □R.S.B.

Turjman F, Xavier JL, Froment JC, Tran-Minh VA, David L, Lapras C. **Late MR follow-up of hypothalamic hamartomas.** *Childs Nerv Syst* 1996;12:63-68

Late MR evaluation (mean, 39 months after diagnosis) of five children with hypothalamic hamartoma showed no change in size, shape, or signal intensity of the mass, suggesting confirmation of the diagnosis. □R.S.B.

Piccirilli CB, Chaddock WM. **Cervical kyphotic myelopathy in a child with Morquio syndrome.** *Childs Nerv Syst* 1996;12:114-116

An unusual kyphotic deformity of the cervical spine in a child with Morquio syndrome produced cervical cord compression and myelopathy. □R.S.B.

Papaefthymiou G, Oberbauer R, Pendl G. **Cranio-cerebral birth trauma caused by vacuum extraction: a case of growing skull fracture as a perinatal complication.** *Childs Nerv Syst* 1996;12:117-120

An example of a growing fracture (leptomeningeal cyst) secondary to birth trauma via vacuum extraction. □R.S.B.

Behnke J, Mursch K, Bruck W, Christen HJ, Markakis E. **Intra-axial endophytic primitive neuroectodermal tumors in the pons: clinical, radiological, and immunohistochemical aspects in four children.** *Childs Nerv Syst* 1996;12:125-129

Four children had primitive neuroectodermal tumors in the pons, all of which were fatal within 13 months. □R.S.B.

Lazareff JA, Olmstead C, Bockhorst KHJ, Alger JR. **Proton magnetic resonance spectroscopic imaging of pediatric low-grade astrocytomas.** *Childs Nerv Syst* 1996;12:130-135

Proton MR spectroscopy was used in the evaluation of seven children with low-grade astrocytomas. The tumors were metabolically heterogeneous, which may help explain their variable biological behavior. □R.S.B.

Iannetti P, Marciani MG, Spalice A, et al. **Primary CNS demyelinating diseases in childhood: multiple sclerosis.** *Childs Nerv Syst* 1996;12:149-154

Clinical imaging findings of five children (11 to 16 years of age) with multiple sclerosis are presented. Symptoms and signs at initial presentation may be subtle and misleading. □R.S.B.

From Miami (Fla) Children's Hospital (N.A.), Primary Children's Medical Center, Salt Lake City, Utah (R.S.B.), University Hospital, Ann Arbor, Mich (J.A.B.), Bowman Gray School of Medicine, Winston-Salem, NC (A.D.E.), New York (NY) University Medical Center (A.E.G.), Hospital of the University of Pennsylvania, Philadelphia (D.B.H.), University of California at Los Angeles School of Medicine (R.B.L.), the Cleveland (Ohio) Clinic Foundation (J.S.R.), the Germantown Hospital and Medical Center, Philadelphia, Pa (J.D.S.), the University of Pittsburgh (Pa) School of Medicine (J.L.W.), and New England Medical Center Hospital, Boston, Mass (S.M.W.).

AJNR 17:1802-1804, Oct 1996 0195-6108/96/1709-1802 © American Society of Neuroradiology

Perlman JM, Risser R. **Can asphyxiated infants at risk for neonatal seizures be rapidly identified by current high-risk markers?** *Pediatrics* 1996;97:456–462

Ninety-six term infants considered at high risk for having neonatal seizures secondary to hypoxic/ischemic insult at birth were prospectively evaluated in the first hour of life to determine predictive indicators of seizure risk. The highest risk of seizures was with low 5-minute Apgar score, intubation, and severe fetal acidemia. □R.S.B.

Shugerman RP, Paez A, Grossman DC, Feldman KW, Grady MS. **Epidural hemorrhage: is it abuse?** *Pediatrics* 1996;97:664–668

Retrospective review of 93 children (3 years old or younger) with epidural or subdural hematoma showed that abuse was diagnosed in 47% of children with subdural and 6% of those with epidural hematoma. Epidural hematoma results from “brief linear contact forces” that commonly occur in unintentional falls, rarely from abuse. □R.S.B.

Degenerative and Metabolic Disease and Aging

Laasko MP, Partanen K, Riekkinen P Jr, et al. **Hippocampal volumes in Alzheimer's disease, Parkinson's disease with and without dementia, and in vascular dementia: an MRI Study.** *Neurology* 1996;46:678–681

Once thought to be characteristic of Alzheimer disease, hippocampal atrophy can also be seen in the dementia associated with idiopathic Parkinson disease and in the dementia caused by vascular disease. □S.M.W.

Stroke

Barnett HJM, Eliasziw M, Meldrum BA, Taylor DW. **Do the facts and figures warrant a 10-fold increase in the performance of carotid endarterectomy on asymptomatic patients?** *Neurology* 1996;46:603–608

Almost half of the endarterectomies being performed in the United States today are being carried out on asymptomatic patients. The authors explore this issue and conclude that the evidence for the surgical benefit of carotid endarterectomies for asymptomatic lesions continues to elude us. This is important reading for all of us who are involved in carotid and MR angiography. □S.M.W.

Provenzale JM, VanLandingham K. **Cerebral infarction associated with Kearns-Sayre syndrome-related cardiomyopathy.** *Neurology* 1996;46:826–828

MELAS syndrome is the most likely of the mitochondrial disorders to be associated with a stroke. Patients with the Kearns-Sayre syndrome (a disease with a mitochondrial disorder) characteristically have a bundle-branch block and usually die from cardiac failure. A patient with the Kearns-Sayre syndrome, treated with a pacemaker, experienced a middle cerebral artery stroke thought to be caused by cardiac embolism. This interesting case thus broadens the potential causes of stroke to be considered in patients with the mitochondrial disorders. □S.M.W.

Carpenter JP, Lexa FJ, Davis JT. **Determination of duplex Doppler ultrasound criteria appropriate to the North American symptomatic carotid endarterectomy trial.** *Stroke* 1996;27:695–699

The authors wanted to evaluate duplex criteria for determining greater than or equal to 70% carotid stenosis, and they evaluated 110 patients with duplex scans and arteriograms. They found that greater than or equal to 70% stenosis can be reliably detected with duplex Doppler, and interobserver agreement was almost perfect. They used a peak systolic velocity in the internal carotid artery of more than 210 cm/s as the criterion for determination of that degree of stenosis. □J.S.R.

Goldman RS, Hartz AJ, Lanska DJ, Guse CE. **Results of a computerized screening of stroke patients for unjustified hospital stay.** *Stroke* 1996;26:639–644

An algorithm was developed to look at medically justified and unjustified stays for patients with a primary diagnosis of stroke. Surprise, surprise: there is a considerably unjustified length of stay for stroke patients, which mainly falls into waiting for rehabilitation placement. □J.S.R.

Fazekas F, Fazekas G, Schmidt R, Kapeller P, Offenbacher H. **Magnetic resonance imaging correlates of transient cerebral ischemic attacks.** *Stroke* 1996;27:607–611

Sixty-two patients with hemispheric transient ischemic attack were evaluated with MR. Acute ischemic lesions were seen in 31% of patients, an incidence similar to that previously reported for CT. MR does not show a dramatically higher number of acute transient ischemic attack-related infarcts, although it does demonstrate a higher proportion of cortical ischemic damage. Three figures. □J.S.R.

Marchal G, Beaudouin V, Rioux P, et al. **Prolonged persistence of substantial volumes of potentially viable brain tissue after stroke: a correlative PET-CT study with voxel-based data analysis.** *Stroke* 1996;27:599–606

Eight patients were evaluated with PET imaging within 17 hours after stroke onset, and a second, chronic-stage PET examination up to 41 days later. Registration was performed using CT. The authors document that within the area of the ultimate infarct, there exists a substantial volume of tissue with penumbral characteristics up to 17 hours after stroke onset. This could represent at-risk tissue that could be saved with appropriate therapy, and they hypothesize that this could mean extending the therapeutic window to 17 hours in appropriately selected patients. □J.S.R.

Vascular Lesions and Malformations

Gewirtz RJ, Awad IA. **Giant aneurysms of the anterior circle of Willis: management outcome of open microsurgical treatment.** *Surg Neurol* 1996;45:409–421

A review of 38 consecutive patients with symptomatic giant aneurysms of the anterior circle of Willis, treated with direct clip reconstruction or trapping, using intraoperative angiographic control. Good or excellent clinical outcome was obtained in 71%. Four figures with CT and angiograms. □J.S.R.

Kim P, Castellani R, Tresser N. **Cerebral venous malformation complicated by spontaneous thrombosis.** *Childs Nerv Syst* 1996;12:172-175

A 13-year-old boy had spontaneous thrombosis of a cerebral venous malformation that led to infarction and death. This case illustrates that these malformations are not always benign. □R.S.B.

Functional Neuroradiology

Atlas SW, Howard RS II, Maldjian J, et al. **Functional magnetic resonance imaging of regional brain activity in patients with intracerebral gliomas: findings and implications for clinical management.** *Neurosurgery* 1996;38:329-338

The results of functional MR evaluations obtained during motor or language task activation as a component of pre-operative surgical planning are reported in five patients with intracranial gliomas. Activated regions adjacent to tumor were found to be displaced by mass effect, and diminished levels of activation were noted to correspond

to the presence of neurologic defect in some patients. MR echo-planar technique, activation paradigms, and procedures for data analysis are presented. □J.A.B.

Magnetic Resonance Spectroscopy

Higuchi T, Fernandez EJ, Maudsley AA, Shimizu H, Weiner MW, Weinstein PR. **Mapping of lactate and N-acetyl-L-aspartate predicts infarction during acute focal ischemia: in vivo ¹H magnetic resonance spectroscopy in rats.** *Neurosurgery* 1996;38:121-130

In vivo proton MR spectroscopy and single-voxel spectral analysis were used in rats to characterize N-acetyl-aspartate (NAA), lactate, and other spectroscopically visible metabolites over a period of 72 hours after temporary or permanent middle cerebral artery occlusion. Rapid depletion of NAA within 1.3 hours of ischemia identified areas that were destined for infarction. Increased lactate levels were a sensitive early marker of ischemia. Findings are illustrated and discussed both in relation to underlying histologic alteration and in relation to potential therapeutic strategies. □J.A.B.