AJNR

Annotated bibliography.

N Altman, J A Brunberg, A D Elster, A E George, D B Hackney, R B Lufkin, J S Ross, J D Swartz, J L Weissman and S M Wolpert

AJNR Am J Neuroradiol 1995, 16 (9) 1949-1952
http://www.ajnr.org/content/16/9/1949.citation

Annotated Bibliography

Nolan Altman, 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

Pediatric Neuroradiology and Congenital Malformations

Sugimoto T, Woo M, Nishida N, et al. **When do brain abnormalities in cerebral palsy occur? An MRI study.** *Dev Med Child Neurol* 1995;37:285–292

MR findings in 70 patients with cerebral palsy, age 2 to 16 years, are correlated with physical findings at the time of imaging, and are correlated with gestational age, history, and laboratory and physical findings relating to the perinatal period. The role of asphyxia (9 of 70), migration anomalies (26 of 70), vascular disorders (30 of 70), and intrauterine infection (5 of 70) in the occurrence of cerebral palsy is discussed briefly. Magnetic resonance (MR) findings are selectively illustrated.□J.A.B.

Traill Z, Pike M, Byrne J. **Sydenham's chorea: a case showing reversible striatal abnormalities on CT and MRI.** *Dev Med Child Neurol* 1995;37:270–273

MR and computed tomography (CT) findings in a 4-year-old child with Sydenham chorea diagnosed on the basis of clinical findings are presented. The pathogenesis of bilateral regions of decreased striatal CT attenuation and of similar regions of increased signal intensity on T2-weighted images is discussed. Findings are nicely illustrated, and there was resolution of these MR findings on a study 9 months after the onset of symptoms.□J.A.B.

Worley G, Hoffman JM, Paine SS, et al. **18-fluorodeoxyglucose positron emission tomography in children and adolescents with traumatic brain injury.** *Dev Med Child Neurol* 1995;37:213–220

Qualitative positron emission tomography (PET) studies with fludeoxyglucose F 18 were obtained in 22 children with nonpenetrating brain injury severe enough to cause loss of consciousness and the need for mechanical respiratory support. PET imaging a mean of 55 days after trauma was found to correlate with clinical outcome at a mean of 25 months, though the correlation was no better than a similar rating based on CT or MR imaging. PET images were scored on the basis of regions of decreased cerebral metabolic rate of glucose. MR and CT images were scored on the basis of regions of abnormality involving cortical, deep gray matter or brain stem structures.□J.A.B.

Ferrie CD, Jackson CD, Giannakodimos S, Panayiotopoulos CP. **Posterior agyria-pachygyria with polymicrogyria: evidence for an inherited neuronal migration disorder.** *Neurology* 1995;45:150–153

Agyria-pachygyria, diagnosed with MR, is not always sporadic. The authors describe two brothers 6 and 9 years of age with mental retardation and refractory epilepsy with the disorder.□S.M.W.

Degenerative and Metabolic Disease and Aging

Filipp M, Campi A, Dousset V, et al. **A magnetization transfer imaging study of normal-appearing white matter in multiple sclerosis.** *Neurology* 1995;45:478–482

The authors confirm what others have shown, that there are alterations of the magnetization transfer ratios of the normal-appearing white matter of patients with clinically definite multiple sclerosis. They theorize that astrocytic hyperplasia, patchy edema, and perivascular cellular infiltration can modify the relative proportion of mobile and immobile protons, thus inducing the lower magnetic transfer ratios. The changes, which were more severe around visible lesions, appeared greater in disabled patients and therefore may influence the course of the disease.□ S.M.W.

Rinne JO, Burn DJ, Mathias CJ, Quinn NP, Marsden CD, Brooks DJ. **Positron emission tomography studies on the dopaminergic system and striated opoid binding in the olivopontocerebellar atrophy variant of multiple system atrophy.** *Ann Neurol* 1995;37:568–573

Ten patients with cerebellar signs and some autonomic failure were studied with PET, using two different ligands, [^{11}C]diprenorphine, a nonspecific marker for opioid receptors, and [^{18}F]fluorodopa, a marker for nigrostriatal presynaptic terminals. These results are compared with the authors' previous findings and control subjects, patients with Parkinson disease and those with full-blown multisystem atrophy. Seven of 10 patients in the study had decreased fluorodopa, and most had decreased diprenorphine uptake in their putamina. Good correlation between the diprenorphine and fluorodopa PET changes were noted but not with the degree of parkinsonism in the patients. The study also shows that most, if not all, patients with sporadic olivopontocerebellar atrophy have subclinical striatal nigral degeneration, making them forme fruste cases of multisystem atrophy.□N.A.

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

AJNR 16:1949–1952, Oct 1995 0195-6108/95/1609–1949

Scheltens PH, Barkhof F, Leys D, Wolters EC, Ravid R, Kamphorst W. **Histopathologic correlates of white matter changes on MRI in Alzheimer's disease and normal aging.** *Neurology* 1995;45:883–888

The authors present histopathologic evidence that the white matter changes seen on MR in patients with Alzheimer disease and normal aging are attributable to loss of myelinated axons, probably caused by arterial changes and breakdown of the ventricular ependyma. Because the imaging/histopathologic correlation was similar in the Alzheimer patients and in the controls, the changes probably represent a form of accelerated aging.□S.M.W.

Caplan L. **Binswanger's disease—revisited.** *Neurology* 1995;45:626–633

This review discusses the historical, pathologic, neuroradiologic, clinical, and therapeutic considerations of Binswanger disease. The author suggests that Binswanger disease only be diagnosed when a patient exhibits a combination of characteristic risk factors as well as certain clinical and neuroradiologic features.□S.M.W.

Seizure Disorders

Fish DR. **MRI in focal lesions.** *Acta Neuro Scand* 1994; (suppl)152:101–104

This paper and the three that follow it discuss the value of standard spin-echo MR, volumetric MR, and MR spectroscopy in the evaluation of patients with epilepsy. The four papers, and the discussions that follow each, represent a concise evaluation of the current thought in Europe about epilepsy surgery (as reported at a workshop on the topic in April 1993).□S.M.W.

Yaffe K, Ferriero D, Barkovich AJ, Rowly H. **Reversible MRI abnormalities following seizures.** *Neurology* 1995; 45:104–108

Reversible MR changes-high signal on T2-weighted images may be seen after seizures. The authors describe eight patients (8 to 60 years of age) with bilateral changes mostly in the parietooccipital regions of the brain. The changes are thought to be attributable to edema in regions where less sympathetic vascular innervation occurs. Similar appearances may be seen in patients with migraine, preeclampsia hypoxemia, encephalopathy, cyclosporine toxicity, and acute intermittent porphyria.□S.M.W.

Stroke

Meyer JS, Muramatsu K, Mortel K, et al. **Prospective CT confirms differences between vascular and Alzheimer's dementia.** *Stroke* 1995;26:735–742

Cerebral atrophy, infarct ratio, ventricular volume, and xenon CT perfusion were compared longitudinally with cognitive capacity screening examinations in the evaluation of vascular versus Alzheimer dementia. They conclude that frequent silent strokes decrease cerebral perfusion in the frontal white matter, thalamus, and internal capsule, resulting in cognitive impairment. Silent strokes and ischemic disease often mimic Alzheimer dementia. Serial neuroimaging unveils the subtle cause of dementia.□J.S.R.

Chen ST, Chiang CY, Hsu CY, Lee TH, Tang LM. **Recurrent hypertensive intracerebral hemorrhage.** *Acta Neurol Scand* 1995;91:128–132

Hypertensive intracerebral hemorrhage is usually considered a "one-time" event. The authors describe recurrent hypertensive intracerebral hemorrhages in a series of 47 patients from a total of 892 consecutive patients with hypertensive hemorrhages. All the hemorrhages occurred at sites (basal ganglia, caudate, thalamic, cerebellum, pons) different from the original hemorrhage. The main differential is amyloid angiopathy, which usually is lobar in distribution and occurs in elderly patients.□S.M.W.

Jones EF, Kalman JM, Calafiore P, Tonkin AM, Donnan GA. **Proximal aortic atheroma: an independent risk factor for cerebral ischemia.** *Stroke* 1995;26:218–224

Two hundred fifteen patients were evaluated with transesophageal echocardiography to detect aortic atheroma. Atheroma in the ascending aorta and arch was detected in more stroke patients than control patients. Mobile protruding atheroma was a powerful risk factor for stroke on univariate analysis. Ascending aortic and arch atheroma are important new independent risk factors for cerebral ischemia.□J.S.R.

Mohr JP, Biller J, Hilal SK, et al. **Magnetic resonance versus computed tomographic imaging in acute stroke.** *Stroke* 1995;26:807–812

Eight patients were seen within the first 24 hours after ischemic symptoms and imaged with repeat CT and MR at 24 hours, 3 to 5 days, and 3 months. Routine MR imaging was performed; perfusion of diffusion imaging was not used. CT scanning was better than baseline MR in predicting 24-hour outcome. After 24 hours, both CT and MR defined the lesion limits. Neither CT nor MR imaging prove superior in the detection of earlier signs of stroke.□J.S.R.

van der Grond J, Balm R, Kappelle LJ, et al. **Cerebral metabolism of patients with stenosis or occlusion of the internal carotid artery.** *Stroke* 1995;26:822–828

The authors evaluated 10 control subjects and 55 patients with transient or nondisabling cerebral ischemia. Patients underwent MR imaging and proton spectroscopy. Decreasing the diameter of the internal carotid artery affected cerebral metabolism in noninfarcted regions. This was seen as decreased *N*-acetyl aspartate/choline ratio and increased cerebral lactate. Four figures with one proton spectrum.□J.S.R.

Brain Tumors and Cysts

Asari S, Maeshiro T, Tomita S, et al. **Meningiomas arising from the falcotentorial junction: clinical features, neuroimaging studies, and surgical treatment.** *J Neurosurg* 1995;82:726–738

Meningiomas in this uncommon location present some unique surgical challenges in light of the numerous venous structures in this region. This paper may be helpful to neuroradiologists who need to know what information should be included in a CT or MR report to the surgeon operating in this region.□A.D.E.

Gallen CC, Schwartz BJ, Bucholz RD, et al. **Presurgical localization of functional cortex using magnetic source imaging.** *J Neurosurg* 1995;82:988–994

A detailed discussion of the use of this technology in six patients with tumors or vascular malformations near the motor strip.□A.D.E.

Interventional Neuroradiology

Touho H. **Percutaneous transluminal angioplasty in the treatment of atherosclerotic disease of the anterior cerebral circulation and hemodynamic evaluation.** *J Neurosurg* 1995;82:953–960

The author reports experience with percutaneous transluminal angioplasty of the anterior cerebral circulation in 19 patients with stroke or crescendo transient ischemic attacks; 8 in the cervical internal carotid artery, 9 in the middle cerebral artery, and 2 in the anterior cerebral artery territory. Seven patients showed immediate favorable clinical response. This technique appears to be best suited for patients with subnormal cerebral perfusion and low vasodilatory response to acetazolamide on cerebral single-photon emission CT study.□A.D.E.

Spine

Mihorat TH, Capcelli AL, Anzil AP, Kotzen RM, Milhorat RH. **Pathological basis of spinal cord cavitation in syringomyelia: analysis of 105 autopsy cases.** *J Neurosurg* 1995;82:802–812

This somewhat skewed autopsy series includes syrinxes that communicated with the fourth ventricle in 45%, isolated noncommunicating central canal dilatation in 20%, and extracanalicular syrinxes originating in the spinal cord parenchyma in about 35%. The article contains a good review of different features of syringomyelia with radiologic implications.□A.D.E.

Ebersold MJ, Pare MC, Quast LM. **Surgical treatment for spondylitic myelopathy.** *J Neurosurg* 1995;82:745–751

The long-term outcome of cervical spondylitic myelopathy after surgical decompression is retrospectively reviewed in 84 patients. Age, severity of disease, number of operated levels, and preoperative grade were not predictive of outcome. Continued clinical deterioration occurred in about 20% of patients treated with anterior decompression and in 40% of those treated with posterior decompression.□A.D.E.

Ueki K, Parisi JE, Onofrio BM. **Schistosoma mansoni infection involving the spinal cord.** *J Neurosurg* 1995;82:1065–1067

You may never see a case like this unless you practice in the Third World, but here is one for your files.□A.D.E.

Neck and Nasopharynx

Nosan DK, Martin DS, Stith JA. **Lymphangioma presenting as a delayed posttraumatic expanding neck mass.** *Am J Otolaryngol* 1995;(16)3:186–189

Lymphangiomas are described with several histologic subtypes including cystic hygroma. This is a report of a 4-year-old boy with a preexistent nonevaluated neck mass that enlarged dramatically after a traumatic episode. Satisfactory-quality precontrast and postcontrast CT scans demonstrate a transspacial mass arising primarily in the posterior cervical space. A short clinical discussion is included.□J.D.S.

Tavill MA, Wetmore RF, Poje CP, Faro SH. **Plunging ranulas in children.** *Ann Otol Rhinol Laryngol* 1995;104:405–408

Good-quality MR images demonstrate plunging ranulas in two patients. The authors reemphasize the importance of the mylohyoid muscle with respect to subdivision of the sublingual and submandibular spaces. A satisfactory discussion is included.□J.D.S.

Salivary Glands

Kandiloros D, Segas J, Papadimitriou K, et al. **Malignant oncocytoma of the parotid with oncocytic change of the contralateral gland.** *Am J Otolaryngol* 1995;(16)3:200–204

Unfortunately, there are no images in this report. However, there is an excellent succinct discussion of this unusual neoplasm, which consistently appears in the differential diagnosis when a salivary gland lesion is identified. The authors indicate that this lesion occurs in the minor as well as major salivary glands.□J.D.S.

Phakomatoses

Reich DS, Wiatrak BJ. **Upper airway obstruction in Sturge-Weber and Klippel-Trenaunay-Weber syndromes.** *Ann Otol Rhinol Laryngol* 1995;104:364–368

The authors report two patients who presented with upper airway obstruction. Both patients had clinical findings indicating coexistent Sturge-Weber and Klippel-Trenaunay-Weber syndromes. Axial CT image in patient 1 demonstrates pronounced enlargement of the maxilla attributable to an aggressively enlarging expansile hemangioma. The second patient had severe hypotonia of the pharynx and a high arched palate. This clinical report includes a review of clinical findings seen in these rare congenital angiomatoses.□J.D.S.

Nose, Paranasal Sinuses, Face, and Oral Cavity

Lerner DN, Zalzal GH, Choi SS, Johnson DL. **Intracranial complications of sinusitis in childhood.** *Ann Otol Rhinol Laryngol* 1995;104:288–293

The authors encounter 14 intracranial abscesses in 443 pediatric patients admitted for treatment of sinusitis. They emphasize that the frontal sinus is the most common source of intracranial complication. A review of Figure 1, which depicts the extensive communication between diploic, emissary, and cortical veins, would be of value to imaging specialists. They reiterate that extension of infection from the sinuses is primarily attributable to retrograde thrombophlebitis because the diploic veins are valveless.□J.D.S.

Ophthalmologic Radiology

Spirnak JP, Nieves N, Hollsten DA, et al. **Gadolinium-enhanced magnetic resonance imaging assessment of hydroxyapatite orbital implants.** *Am J Ophthalmol* 1995; 119:431–440

Hydroxyapatite grafts are used in some centers as ocular implants. The authors consistently demonstrated centrally advancing, peripheral enhancement identical to the histologically proved fibrovascular ingrowth pattern. They believed these data to be useful as a guide to surgical planning, preventing the morbidity encountered by drilling into an avascular hydroxyapatite implant.□J.D.S.

Temporal Bone

vanDie A, de Groot JAM, Zonneveld HW, et al. **Dehiscence of the jugular bulb in Crouzon's disease.** *Laryngoscope* 1995;105:432–435

A review of CT scans in 21 ears of 11 patients with Crouzon disease showed that 12 of the jugular bulbs (in 9 of the patients) were protruding or dehiscent. Because Crouzon patients with the distorted nasopharynx frequently have retained middle ear secretions and require myringotomy, CT scans obtained before this procedure may be helpful in detecting dehiscent or protruding jugular bulbs.□R.B.L.

Skull and Craniovertebral Junction

Martin DS, Awwad EE, Maves MD. **Imaging facial pain of trigeminal origin.** *Am J Otolaryngol* 1995;16(2):132–137

Nine good-quality MR and one MR angiography images demonstrate several different causes of facial pain. This interesting series includes examples of multiple sclerosis, Tolosa-Hunt syndrome, spindle cell tumor, primitive trigeminal artery, acoustic neuroma, and adenoid cystic carcinoma. Limited but useful discussion. Very interesting cases.□J.D.S.