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

Interventional Neuroradiology

Gurian JH, Viñuela F, Guglielmi G, Gobin YP, Duckwiler GR. **Endovascular embolization of superior hypophyseal artery aneurysms.** *Neurosurgery* 1996;39:1150–1156

The anatomy, clinical presentation, endovascular treatment, and outcomes relating to 11 patients with superior hypophyseal aneurysms are reviewed. Alternative therapeutic approaches to aneurysms at this location are included both in the article and in discussions that follow. □J.A.B.

Yokogami K, Nakano S, Ohta H, Goya T, Wakisaka S. **Prediction of hemorrhagic complications after thrombolytic therapy for middle cerebral artery occlusion: value of pre- and post-therapeutic computed tomographic findings and angiographic occlusive site.** *Neurosurgery* 1996; 39:1102–1107

CT findings from 35 patients before and after performance of intraarterial thrombolysis for middle cerebral artery occlusion are presented. Angiographic findings are classified and hemorrhagic outcome is related to prethrombolytic and postthrombolytic CT findings. The presence of prethrombolysis CT alteration and the presence of regional contrast extravasation on CT imaging obtained immediately after successful intraarterial thrombolysis were highly correlated with subsequent parenchymal hemorrhage. In no patient without postthrombolytic focal enhancement did such hemorrhage develop.□J.A.B.

Murayama Y, Usami S, Hata Y, et al. **Transvenous hemodynamic assessment of arteriovenous malformations and fistulas: preliminary clinical experience in Doppler guidewire monitoring of embolotherapy.** *Stroke* 1996;27:1358–1364

Preliminary clinical experience with transvenous monitoring of blood flow using a Doppler guidewire through a 2.1F microcatheter is described. This monitoring technique was evaluated in two patients with arteriovenous malformations and seven patients with dural fistulas. They conclude that the transvenous hemodynamic assessment of embolotherapy with Doppler guidewire may be helpful not only in monitoring the progression and effectiveness of treatment but also in determining the end point of therapy. Three figures, angiograms and Doppler ultrasonograms. □J.S.R.

Murayama Y, Massoud TF, Viñuela F. **Transvenous hemodynamic assessment of experimental arteriovenous malformations: Doppler guidewire monitoring of embolotherapy in a swine model.** *Stroke* 1996;27:1365–1372

Doppler guidewire monitoring was evaluated in 10 arteriovenous malformation models in swine. The transvenous Doppler guidewire assessment of two parameters, average peak velocity, and maximum minus minimum peak velocity, was useful in the hemodynamic evaluation of these experimental arteriovenous shunts.□J.S.R.

Yadav JS, Roubin GS, King P, Iyer S, Vitek J. **Angioplasty and stenting for restenosis after carotid endarterectomy: initial experience.** *Stroke* 1996;27:2075–2079

The authors stented 25 carotid arteries in 22 patients with postendarterectomy restenosis. Mean stenosis was reduced from 79% before to 1.8% after stenting. Eight patients returned after 6 months for angiography, with no significant restenosis occurring. One patient had a minor stroke.□J.S.R.

Stroke

Brisman MH, Bederson JB, Sen CN, Germano IM, Moore F, Post KD. **Intracerebral hemorrhage occurring remote from the craniotomy site.** *Neurosurgery* 1996;39:1114–1122

Intracerebral hemorrhage after surgery, remote from the site of craniotomy, was found to occur most commonly within the first few hours after surgery. These hemorrhages were unrelated to hypertension, coagulopathy, cerebrospinal fluid drainage, or the underlying disease for which the craniotomy was performed. Associated morbidity and mortality were high. Mechanical or vascular factors related to alteration in deep venous drainage are postulated to be the cause.□J.A.B.

Brint SU. **Acute stroke therapies.** *Surg Neurol* 1996;46: 446–449

A succinct summary of current therapeutic trials for the acute treatment of ischemic stroke. Twenty-one references. □J.S.R.

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.), Medical College of Wisconsin, Milwaukee (V.M.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.).

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Derdeyn CP, Powers WJ. **Cost-effectiveness of screening for asymptomatic carotid atherosclerotic disease.** *Stroke* 1996;27:1944–1950

The authors developed a computer model to simulate the cost-effectiveness of screening a cohort of 1000 men for asymptomatic carotid atherosclerotic disease during a 20-year period. They found that a one-time screening of an asymptomatic population with a high prevalence (greater than 60% stenosis) with Doppler ultrasound followed by arteriography and endarterectomy can be cost-effective. However, this is quite expensive. There does not appear to be a role for screening low-prevalence populations.□J.S.R.

Howard G, Baker WH, Chambless LE, Howard VJ, Jones AM, Toole JF. **An approach for the use of Doppler ultrasound as a screening tool for hemodynamically significant stenosis (despite heterogeneity of Doppler performance: a multicenter experience).** *Stroke* 1996;27:1951–1957

The reliability of the Doppler ultrasound criteria was prospectively evaluated in the Asymptomatic Carotid Atherosclerosis Study (ACAS) trial. They found that the sensitivity and specificity of Doppler ultrasound are overstated in the literature. However, performance on individual devices can be sufficient to detect hemodynamically significant stenosis, and with standardization, ultrasound performance is clearly sufficient for admission to clinical trials and as a basis for carotid surgery. Technical details of the validation process are available from the ACAS operations office.□J.S.R.

Macko RF, Ameriso SF, Barndt R, Clough W, Weiner JM, Fisher M. **Precipitants of brain infarction: roles of preceding infection/inflammation and recent psychological stress.** *Stroke* 1996;27:1999–2004

Our psychologically stressful lifestyles do not appear to predispose us to cerebral infarction.□J.S.R.

van der Grond J, Eikelboom BC, Mali WP. **Flow-related anaerobic metabolic changes in patients with severe stenosis of the internal carotid artery.** *Stroke* 1996;27:2026–2032

MR proton spectroscopy and MR angiographic findings of 56 patients with unilateral severe stenosis of the internal carotid artery are compared with control subjects. The authors conclude that patients who have a combination of reduced ipsilateral arterial blood flow, low NAA/choline ratios, and increased lactate are probably at risk for infarction in the long term or if profusion increases further. They found MR techniques faster, easier, and more available than single-photon emission CT, positron emission tomography, and xenon techniques.□J.S.R.

Houkin K, Kamiyama H, Abe H, Takahashi A, Kuroda S. **Surgical therapy for adult moyamoya disease: can surgical revascularization prevent the recurrence of intracerebral hemorrhage?** *Stroke* 1996;27:1342–1346

Authors looked at 35 patients with adult moyamoya disease (24 with initial onset of hemorrhage, 11 with initial onset of cerebral ischemia) who underwent bypass surgery. They found that whereas the revascularization surgery does not always prevent rebleeding, it decreases the moyamoya vessels, which can reduce the overall risk of hemorrhage more effectively than conservative treatment. Four figures, with angiography and CT.□J.S.R.

Argentino C, DeMichele M, Fiorelli M, et al. **Posterior circulation infarcts simulating anterior circulation stroke: perspective of the acute phase.** *Stroke* 1996;27:1306–1309

The bedside differential diagnosis between anterior cerebral and nontypical posterior cerebral infarcts in the first few hours after stroke is unreliable, as is that of ischemic versus hemorrhagic stroke, and territorial versus lacunar infarct. Diagnoses such as hemispheric, anterior circulation, or middle cerebral stroke in the first few hours after onset are not valid eligibility criteria for clinical trials. □J.S.R.

Phakomatoses

Curatolo P. **Neurological manifestations of tuberous sclerosis complex.** *Childs Nerv Syst* 1996;12:515–521

A review of manifestations of tuberous sclerosis, including an extensive review of epilepsy, learning disabilities, mental retardation, behavioral problems, and complications such as hydrocephalus and subependymal giant cell astrocytomas. Thirty-four references.□J.S.R.

Anatomy

Türe U, Yasargil MG, Krisht AF. **The arteries of the corpus callosum: a microsurgical anatomic study.** *Neurosurgery* 1996;39:1075–1085

The anatomy of the blood supply of the corpus callosum is beautifully illustrated with specimen photographs and anatomic diagrams. Contributions of the anterior communicating artery, pericallosal artery, and posterior pericallosal artery are carefully defined. Although presented for purposes of improving the understanding of operative anatomy, the material is also optimal for learning angiographic correlation.□J.A.B.

Pediatric Neuroradiology and Congenital Malformations

Packer RJ. **Brain stem gliomas: therapeutic options at a time of recurrence.** *Pediatr Neurosurg* 1996;24:211–216

This paper from the New York University symposium on brain stem tumors in childhood discusses the treatment options available for children with recurrent brain stem gliomas. The author notes that there have been relatively few well-designed studies accruing adequate numbers of patients with this disease. He recommends that adequate studies with innovative approaches are needed for treatment of these patients.□R.S.B.

Packer RJ. **Alternative therapies for children with brain stem gliomas: immunotherapy and gene therapy.** *Pediatr Neurosurg* 1996;24:217–222

A paper from the New York symposium on brain stem tumors in childhood discusses the possible role for immunotherapy and gene therapy in future treatment of children with brain stem glioma. The author refers to one recently completed trial in which treatment with interferon beta and hyperfractionated radiation therapy did not improve the survival of newly diagnosed patients. Gene therapy is still in its infancy, but might have application to the treatment of children with brain stem gliomas.□R.S.B.

Singhal BS, Gursahani RD, Udani VP, Biniwale AA. **Megalencephalic leukodystrophy in an Asian Indian ethnic group.** *Pediatr Neurol* 1996;14:291–296

Thirty patients over 10 years in India had megalencephaly, leukodystrophy, and a relatively benign course. Most of these patients were from a single, distinctive ethnic group, the Agrawals. The pattern of genetic transmission suggests autosomal recessive inheritance. Diffuse white matter abnormality is shown on CT and MR images. □R.S.B.

Kojo M, Ogawa T, Yamada K. **Normal developmental changes in carotid arterial blood flow measured by Doppler flowmetry in children.** *Pediatr Neurol* 1996;14:313–316

Using a Doppler flowmeter, serial changes in carotid arterial blood flow were measured in neonates, infants, and children. Carotid arterial blood flow increases steadily in neonates through infancy reaching a plateau at 2 to 4 years of age. These changes early in life reflect the changing physiology of cardiac contraction and carotid-cerebral circulation.□R.S.B.

Kato M, Mizuguchi M, Sakuta R, Takashima S. **Hypertrophy of the cerebral white matter in hemimegalencephaly.** *Pediatr Neurol* 1996;14:335–338

Using the cut brains of four patients with hemimegalencephaly and an immunohistochemical marker for epidermal growth factor (EGF), the authors found that, on the affected side, the area of cerebral white matter was more than twice as large as on the unaffected side, while the area of cerebral cortex on the affected side was relatively small. EGF immunoreactivity was demonstrated in both cortical neurons and glial astrocytes in the affected hemispheres, suggesting that excessive proliferation in hemimegalencephaly might relate to stimulation by EGF.□R.S.B.

Ozek E, Ozek M, Bilgen H, Kilic T, Pamir N. **Neonatal intracranial hemorrhage due to rupture of arteriovenous malformation.** *Pediatr Neurol* 1996;15:53–56

Two cases of neonatal intracerebral hemorrhage secondary to rupture of an arteriovenous malformation are illustrated with CT and MR. After surgical removal, the outcome of these neonates was more favorable than anticipated.□R.S.B.

Alper G, Crumrine PK, Hamilton RL, Albright AL, Wald ER. **Unusual case of inflammatory spinal epidural mass (Castleman syndrome).** *Pediatr Neurol* 1996;15:60–62

Castleman syndrome (giant lymph node hyperplasia) is a "rare, heterogeneous lymphoproliferative disorder of unknown etiology and pathogenesis." This is a report of a 10-year-old boy who had an enhancing epidural mass on MR imaging impinging on the spinal cord at the cervicothoracic junction. Interestingly, the mass demonstrated both T1 and T2 shortening. Histopathology of the partially resected mass showed lymphoplasmocytic infiltration compatible with Castleman syndrome.□R.S.B.

Yokochi K, Iwase K. **Bilateral internal carotid artery agenesis in a child with psychomotor developmental delays.** *Pediatr Neurol* 1996;15:76–78

A case of a 2-year-old boy with the rare occurrence of agenesis of both internal carotid arteries demonstrated by MR imaging and MR angiography. The middle cerebral arteries were fed from the posterior communicating arteries bilaterally. The anterior cerebral arteries were fed by a single A1 segment. Mild periventricular white matter abnormality was present but there were no areas of arterial-distribution infarction.□R.S.B.

Korenke GC, Pouwels PJW, Frahm J, et al. **Arrested cerebral adrenoleukodystrophy: a clinical and proton magnetic resonance spectroscopy study in three patients.** *Pediatr Neurol* 1996;15:103–107

A report of three boys with X-linked adrenoleukodystrophy (ALD) who, after typical onset between 7 and 11 years of age, showed no apparent deterioration over the next 5 to 12 years. CT and MR images show no progression of demyelinating process. Proton MR spectroscopy showed a different metabolic pattern in these patients than the pattern seen in boys with typically progressive cerebral ALD. □R.S.B.

Nardocci N, Zorzi G, Grisoli M, Rumi V, Broggi G, Angelini L. **Acquired hemidystonia in childhood: a clinical and neuroradiological study of thirteen patients.** *Pediatr Neurol* 1996;15:108–113

This paper reports 13 pediatric patients with acquired hemidystonia. The hemidystonia was secondary to ischemic infarction from perinatal trauma, stroke, or primary antiphospholipid syndrome. Basal ganglia abnormalities were bilateral in 10 children and unilateral in three. Abnormalities are shown on CT and MR. This study provides additional evidence that lesions of the corpus striatum can induce dystonia, supporting the theory of striatopallido-thalamic disconnection.□R.S.B.

Cabañas F, Pellicer A, Valverde E, Morales C, Quero J. **Central nervous system vasculopathy in neonatal lupus erythematosus.** *Pediatr Neurol* 1996;15:124–126

Four patients with neonatal lupus erythematosus had complete congenital heart block. Color Doppler flow imaging studies demonstrate a linear pattern of hyperechogenic areas in the thalamic and/or basal ganglia vessels indicative of vasculopathy. Short-term follow-up of these infants showed no progression of vasculopathy, evidence of focal ischemia, or neurologic impairment. The authors suggest that all neonates with congenital heart block should be evaluated for vascular abnormalities of the basal ganglia.□R.S.B.

Leviton A, Gilles F. **Ventriculomegaly, delayed myelination, white matter hypoplasia, and "periventricular" leukomalacia: how are they related?** *Pediatr Neurol* 1996;15: 127–136

This provocative paper reviews the relationship between ventriculomegaly, hydrocephalus, and loss of periventricular white matter in premature neonates. The authors hypothesize that ventriculomegaly and delayed myelination in some premature infants are a consequence of injury to precursor cells of oligodendroglia or to rapidly growing axons. This injury might reflect diminished availability of growth/survival factors or vulnerability to toxins or physiologic perturbations. They conclude that ventriculomegaly in the premature neonate, even with intracranial hemorrhage, is not necessarily due to impaired cerebrospinal fluid dynamics.□R.S.B.

Lu C-Y, Hou J-W, Wang P-J, Chiu H-H, Wang T-R. **Homocystinuria presenting as fatal common carotid artery occlusion.** *Pediatr Neurol* 1996;15:159–162

A 13-year-old girl had sudden onset of occlusion of the left common carotid artery associated with stenoses of the right common carotid artery and both vertebral arteries. The patient was initially thought to have Takayasu arteritis, but laboratory investigations revealed homocystinuria as the cause. Homocystinuria should be considered in the differential diagnosis of acute vascular occlusions in children.□R.S.B.

Peacock WJ, Wehby-Grant MC, Shields WD, et al. **Hemispherectomy for intractable seizures in children: a report of 58 cases.** *Childs Nerv Syst* 1996;12:376–384

This paper reports the UCLA experience with hemispherectomy for intractable seizures in children from 1986 to 1995. Fifty-eight children underwent anatomic, functional, or modified anatomic hemispherectomies. At 1 year after surgery, a 90% or better reduction in seizure frequency was found in 88% of the children. Motor function in the involved extremities either improved or was unchanged in 76% of the children. A review of complications and a comparison of techniques are presented.□R.S.B.

Zuccaro G, Jaimovich R, Mantese B, Monges J. **Complications in paediatric craniopharyngioma treatment.** *Childs Nerv Syst* 1996;12:385–191

This paper reports experience with 48 consecutive children treated for craniopharyngioma over a 7-year period. Survival and quality of life were better in the patients undergoing total resection alone than those treated with subtotal or partial resection plus radiation therapy. Complications included endocrine problems, postsurgical subdural hematomas, vascular occlusions, and shunt malfunction.□R.S.B.

Djientcheu, VdP, Rilliet B, Delavelle J, Argyropoulo M, Gudinchet F, de Tribolet N. **Leptomeningeal cyst in newborns due to vacuum extraction: report of two cases.** *Childs Nerv Syst* 1996;12:399–403

In two neonates delivered by vacuum extraction, who large cerebrospinal fluid-filled ("leptomeningeal") cysts developed over diastatic coronal sutures. Both neonates had a tear in the dura requiring surgical repair. One patient had an underlying porencephalic cyst.□R.S.B.

Sgouros S, John P, Walsh AR, Hockley AD. **The value of colour Doppler imaging in assessing flow through ventriculo-peritoneal shunts.** *Childs Nerv Syst* 1996;12:454–459

This paper introduces evaluation of shunt flow as a novel application of Doppler ultrasonography. The authors were able to identify correctly the presence or absence of cerebrospinal fluid flow through a ventriculoperitoneal shunt in 80% of 20 examinations. Doppler signals were best seen at areas of turbulence secondary to junction points in the shunt system or at the exit of the peritoneal catheter. □R.S.B.

Sharma MC, Mahapatra AK, Gaikwad S, Biswal A. **Primary extramedullary orbital plasmacytoma in a child.** *Childs Nerv Syst* 1996;12:470–472

An 11-year-old boy had an enhancing extraconal mass of the lateral orbit that proved to be an extramedullary plasmacytoma. No bone marrow abnormality was present. The tumor stained positively for IgG and κ chain.□R.S.B.