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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

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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

Neck and Nasopharynx

Woodson GE. **Configuration of the glottis in laryngeal paralysis. I: Clinical study.** *Laryngoscope* 1993;103:1227-1234

Healthy control subjects and patients with recurrent laryngeal or vagus nerve paralysis were examined with respect to laryngeal configuration. No significant difference in laryngeal configuration was identified between the two states. □RBL

Interventional Neuroradiology

Grzyska U, Westphal M, Zanella F, Freckmann N, Herrmann H-D, Zeumer H. **A joint protocol for the neurosurgical and neuroradiologic treatment of cerebral arteriovenous malformations: indications, technique, and results in 76 cases.** *Surg Neurol* 1993;40:476-484

A rare view of 76 patients who had been treated with preoperative embolization. Overall recovery rate was 83%; in some 0.9% of the cases arteriovenous malformations were not totally removed. The overall complication rate was 9.2%. The authors conclude that preoperative embolization facilitates surgery and reduces the risk of severe morbidity and mortality, particularly with high-grade lesions. They also present results of the usefulness of Ethibloc (an emulsion of maize prolamins and oleum papaveris) as an embolizing agent. □JSR

Santhosh J, Rao VRK, Ravimandalam K, Gupta AK, Madhavan Unni N, Srinivasa Rao A. **Endovascular management of carotid cavernous fistulae: observation on angiographic and clinical results.** *Acta Neurol Scand* 1993;88:320-326

Twenty-five patients presented with symptomatic carotid-cavernous fistulas. Twenty-one patients with high-flow carotid-cavernous fistulas and direct communication between the internal carotid artery and cavernous sinus were treated with transarterial and transvenous detachable balloons. Angiographic and clinical cures were obtained in 20 patients with preservation of the carotid artery in 16 patients. One of the 21 patients died after an unsuccessful transvenous procedure. Four patients with meningeal blood supply to the fistulae were treated with manual carotid compression—two cured and two improved. Good angiographic images. □SMW

Stroke

Schievink WI, Mokri B, Whisnant JP. **Internal carotid artery dissection in a community: Rochester, Minnesota, 1987-1992.** *Stroke* 1993;24:1678-1680

The authors studied the incidence rate of spontaneous cervical internal carotid artery dissection in a defined population from Rochester, Minn. Ten patients with spontaneous carotid dissection were identified in the period 1987 to 1992, with an average annual incidence rate for all ages of 2.6 per 100000. □JSR

Davis SM, Chua MG, Lichtenstein M, Rossiter SC, Binns D, Hopper JL. **Cerebral hypoperfusion in stroke prognosis and brain recovery.** *Stroke* 1993;24:1691-1696

Study of whether acute perfusion deficits independently add to a validated clinical prognostic score in stroke. Volumetric analysis was performed in 38 patients with middle cerebral artery territory infarction using single-photon emission CT (technetium-99 m hexamethylpropylene amine oxime). The authors conclude that volumetric analysis of regional hypoperfusion within 72 hours of onset does predict stroke outcome after three months. However, they found that Allen "prognostic discriminate score" based on age, presence or absence of limb paralysis, loss of consciousness at onset, hemianopsia, and higher cortical dysfunction is a better prognostic method. Two color single-photon emission CT plates. □JSR

Tohgi H, Takahashi S, Chiba K, Hirata Y. **Cerebellar infarction. Clinical and neuroimaging analysis in 293 patients.** *Stroke* 1993;24:1697-1701

293 consecutive patients with cerebellar infarct were diagnosed by CT and/or MR during a 5-year period. The authors found that infarcts involving the superior cerebellar artery constituted 52%, the posterior inferior cerebellar artery 49% and anterior inferior cerebellar artery 20%. Outcomes were poorer with superior cerebellar artery infarcts than with anterior inferior cerebellar artery and posterior inferior cerebellar artery infarcts. This result is not consistent with previous studies which have reported a higher tendency for posterior inferior cerebellar artery infarcts to lead to severe mass effect and brain stem compression. □JSR

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.); NYU Medical Center, New York (A.E.G.); Hospital of the University of Pennsylvania, Philadelphia (D.B.H.); UCLA School of Medicine, Los Angeles (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.).

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Minematsu K, Fisher M, Li L, Sotak CH. **Diffusion and perfusion magnetic resonance imaging studies to evaluate a noncompetitive N-Methyl-D-aspartate antagonist and reperfusion in experimental stroke in rats.** *Stroke* 1993;24:2074-2081

The authors evaluated perfusion and diffusion MR to evaluate the in vivo effects of a N-methyl-D-aspartate antagonist in a temporary ischemia model in rats, using a 2-T imaging spectrometer system. With reperfusion, after 3 hours of temporary ischemia, the diffusion imaging documented a 29% reduction of ischemic lesion area in the treated group. One diffusion-weighted figure. □JSR

Mosely ME, deCrespigny AJS, Roberts TPL, Kozniowska E, Kucharczyk J. **Early detection of regional cerebral ischemia using high speed MRI.** *Stroke* 1993;24 (suppl 1):I-60-I-65

Evaluation of perfusion and diffusion imaging in a cat model with a balloon occlusion on a 2-T system. The authors conclude that the characterization of the ischemic events is improved when the apparent diffusion coefficient and perfusion are measured. Five figures showing both perfusion and diffusion. □JSR

Maeda A, Yamada M, Itoh Y, Otomo E, Hayakawa M, Miyatake T. **Computer-assisted three-dimensional image analysis of cerebral amyloid angiopathy.** *Stroke* 1993;24:1857-1864

Study of 500 serial sections from the brain tissue of a patient with severe amyloid angiopathy histologically and immunohistochemically. The authors suggest the sequential events of cerebral amyloid angiopathy vascular lesions are 1) damage of the media and adventitia with amyloid deposition, 2) vascular dilatation with thickening of the intima and disruption of the media, 3) plasma components invading the vascular wall, and finally 4) hemorrhage. With five color plates. □JSR

Graham GD, Blamire AM, Rothman DL, et al. **Early temporal variation of cerebral metabolites after human stroke.** *Stroke* 1993;24:1891-1896

Ten patients had localized proton MR spectroscopy within the first 60 hours after acute nonhemorrhagic stroke. Elevated lactate signal is reliably detected by MR spectroscopy after acute cerebral infarct. Lactate clearance occurs despite potential contribution of lactate producing leukocytes in the subacute stage. □JSR

Sturzenegger M, Mattle HP, Rivoir A, Rihs F, Schmid C. **Ultrasound findings in spontaneous extracranial vertebral artery dissection.** *Stroke* 1993;24:1910-1921

Analysis of the value of ultrasound in the diagnosis of vertebral artery dissection in 14 patients in whom the dissections were verified by angiography and/or MR. Concludes that there is no pathognomonic ultrasound finding for vertebral artery dissection. Three figures including conventional angiography, MR, and ultrasound. □JSR

Toriyama T, Tanizaki Y, Hongo K, Osawa M, Kobayashi S. **Functional image of dynamic computed tomography in diagnostic and prognostic evaluation of ischemic stroke within the first 6 hours.** *Stroke* 1992;24:1993-1944

Forty-seven patients with ischemic stroke were evaluated by dynamic CT within 6 hours of ictus. The authors divided the functional images into three categories: 1) cortical, 2) noncortical, and 3) normal. Cortical-type was associated with a significantly unfavorable outcome and was a good test for defining arterial trunk occlusion. Five figures including CT, time-to-peak image, corrected mean transit time images, and angiographic correlation. □JSR

Bapuraj JR, Mishra NK, Mohan KK, Goulatia RK, Maheshwari MC. **Hemiplegia in posterior cerebral artery strokes.** *Acta Neurol Scand* 1993;88:316-319

Occlusion of the P1 segments of the posterior cerebral artery with involvement of the thalamo-perforating arteries may result in hemiparesis. If the ambient (P2) segment and quadrigeminal (P3) segments are also involved, visual field defects occur. Moderately good CT images. □SMW

Spine

Shono Y, McAfee PC, Cunningham BW, Brantigan JW. **A biomechanical analysis of decompression and reconstruction methods in the cervical spine: emphasis on a carbon-fiber-composite cage.** *J Bone Joint Surg* 1993;75-A:1674-1684

Evaluation of three different patterns of instability (via anterior cervical discectomy and/or corpectomy) in calf spines. Authors also looked at three types of anterior reconstruction disease, anterior iliac strut grafting, carbon-fiber-composite cage packed with cancellous bone, and polymethylmethacrylate. They found that the carbon-fiber reinforced cage showed greater biomechanical potential as an alternative to bone strut alone or polymethylmethacrylate. □JSR

Nelson DK, Binkovitz LA, Lyons MK. **Case of the month: primary lymphoma of the spinal cord.** *Mayo Clin Proc* 1993;68:1097-1098

Lymphoma of the spinal cord is rare. The presentation of this case is somewhat misleading, because the patient also had a left cerebellar lesion which is not illustrated. Three axial MR images (of the spinal cord) show an enhancing, apparently intraaxial mass. The discussion could have devoted more space to multifocal central nervous system lesions and "drop metastases" but is a nice, brief review of central nervous system lymphoma. □JLW

Ophthalmologic Radiology

Char DH. **Symposium on ocular tumors (part II): management of orbital tumors.** *Mayo Clin Proc* 1993;68:1081-1096

This review contains interesting clinical facts (globe protrusion may be stable, pulsatile, or positional) and several detailed tables (causes of proptosis by age, differential diagnosis of orbital lesions in adults, etc). There are many MR images of varying quality, a few CTs, and clinical photographs. This article nicely complements the recent *New England Journal of Medicine* review of Graves ophthalmopathy (*N Engl J Med* 1993;329:1468-1475). □JLW

Temporal Bone

Yamasoba T, Kikuchi S, Higo R, O'uchi T, Tokumaru A. **Sudden sensorineural hearing loss associated with slow blood flow of the vertebrobasilar system.** *Ann Otol Rhinol Laryngol* 1993;102:873-877

The three most commonly accepted causes of sudden sensorineural hearing loss are viral infections, circulatory disorders, and labyrinthine membrane rupture. The authors strongly believe that a slow or absent flow in the labyrinthine artery was the cause of sudden hearing loss in a significant percentage of their patients. Such decreased blood flow can be caused by occlusion/vasospasm in the labyrinthine artery itself or generalized decreased blood flow in the vertebral basilar system. A spin-echo MR image of questionable significance is used. MR angiography is not discussed. □JDS

Shpitzer T, Stern Y, Cohen O, Levy R, Segal K, Feinmesser R. **Malignant external otitis in nondiabetic patients.** *Ann Otol Rhinol Laryngol* 1993;102:870-872

This clinical article reviews the pathophysiologic process involved in malignant external otitis. The main thrust of the article is that nine of their 30 patients who presented over a 4-year interval with this disease were healthy adult nondiabetic patients. The authors emphasize not excluding malignant external otitis in the nonimmunocompromised group. □JDS

Roberts WH, Dinges DL, Hanly MG. **Inverted papilloma of the middle ear.** *Ann Otol Rhinol Laryngol* 1993;102:890-892

Moderate quality CT and axial enhanced MR demonstrate an enhancing left middle ear mass. To the authors' knowledge, this is the first reported inverted papilloma arising de novo in the middle ear. □JDS

Lyos AT, Malpika A, Estrada R, Katz CD, Jenkins HA. **Invasive aspergillosis of the temporal bone: an unusual manifestation of acquired immunodeficiency syndrome.** *Am J Otolaryngol* 1993;14:444-448

Invasive aspergillosis, most commonly involving the paranasal sinuses, is most frequently encountered in immunosuppressed patients. The authors report a patient with acquired immunodeficiency syndrome with invasive aspergillosis confined to the temporal bone presenting with acute facial paralysis and sensorineural hearing loss. Axial and coronal CT scans demonstrate debris throughout the external auditory canal, middle ear, and mastoid. The causes for facial paralysis and sensorineural hearing loss are unclear. □JDS

Pediatric Neuroradiology and Congenital Malformations

Garcia CE, Cunningham MJ, Clary RA, Joseph MP. **The etiologic role of frontal sinusitis and pediatric orbital abscesses.** *Am J Otolaryngol* 1993;14:449-452

Acute ethmoiditis is accepted as the usual inciting event leading to orbital infection in children. The authors report six patients in whom they believe the orbital inflammatory process was the result of frontal sinusitis. The authors cite the superior and lateral location of the orbital abscesses in their patients to support their theory. Potential mechanisms cited include thrombophlebitis along valveless veins, septic microemboli, and direct extension through three specific common sites of dehiscence. One case illustrated with CT. □JDS

Brown JK, Minns RA. **Non-accidental head injury, with particular reference to whiplash shaking injury and medico-legal aspects.** *Dev Med Child Neurol* 1993;35:849-869

Clinical and radiologic manifestations of nonaccidental injury are discussed in this excellent review of the scalp, skull, and gray and white matter sequela of physical abuse in children. Patterns of injury and the differential diagnosis of bruising and multiple fractures are included. The biomechanics of skull and cerebral injury are correlated with clinical, imaging, and pathologic alteration. The timing of radiographic alterations relative to the injury is discussed. References to imaging, clinical, and epidemiologic sources are numerous. □JAB

Baxter P, Gardner-Medwin D, Green SH, Moss C. **Congenital livedo reticularis and recurrent stroke-like episodes.** *Dev Med Child Neurol* 1993;35:917-926

The vasculopathy of congenital livedo reticularis and its association with cerebral infarction in childhood is discussed in this presentation of three cases. Symptoms included frequent recurrent alternating hemiparesis variably associated with ipsilateral pain, headache, seizures and intellectual decline. Other systemic vasculopathies associated with neurologic dysfunction are discussed. □JAB

Vascular Lesions and Malformations

Ujiie H, Sato K, Onda H, et al. **Clinical analysis of incidentally discovered unruptured aneurysms.** *Stroke* 1993;24:1850-1856

Forty-four cases of asymptomatic aneurysms in which the lesions had been fortuitously discovered by angiography. Unruptured aneurysms were frequently found in the internal carotid artery, with an incidence of 10.6% in the cavernous portion, 19.1% in the internal carotid-opthalmic artery, 19.1% in the internal carotid-posterior communicating artery. Mean diameter of the unruptured aneurysms was 4.8 mm. Aneurysms found at branching and bending points appear to bleed less than aneurysms seen at bifurcations. □JSR

Fogelholm R, Hernesniemi J, Vapalahti M. **Impact of early surgery on outcome after aneurysmal subarachnoid hemorrhage.** *Stroke* 1993;24:1649-1654

Evaluation of survival and functional outcome of two population-based patient groups. The authors conclude that an active treatment policy of subarachnoid hemorrhage including early surgery only marginally improves survival, but the quality of life of the survivors is significantly better. They also conclude that 60% of patients in the population with subarachnoid hemorrhage can theoretically benefit from surgical treatment. □JSR