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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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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

Stroke

Mittl RL Jr, Broderick M, Carpenter JP, et al. **Blinded-reader comparison of magnetic resonance angiography and duplex ultrasonography for carotid artery bifurcation stenosis.** *Stroke* 1994;25:4-10.

Comparison of two-dimensional MR angiography and duplex ultrasonography for severe stenoses of the carotid bifurcation in 38 patients. The sensitivity and specificities of MR angiography and duplex ultrasonography were not statistically different for various degrees of stenosis at the carotid bifurcation. The authors propose MR angiography as the screening test of choice. □JSR

Nighoghossian N, Ryvlin P, Trouillas P, Laharotte JC, Froment JC. **Pontine versus capsular pure motor hemiparesis.** *Neurology* 1993;43:2197-2201.

A pure motor hemiparesis may be caused by a pontine infarct (as opposed to a capsular infarct) in approximately one third of patients. MR is an excellent test to demonstrate the pontine infarct, which in the majority of cases is caused by lacunar lesions deep to the surface of the pons or pontine branch occlusions in which the pontine surface is involved (minority of cases). Convincing MR images. □SMW

Isensee C, Reul J, Thron A. **Magnetic resonance imaging of thrombosed dural sinuses.** *Stroke* 1994;25:29-34.

The authors present independent signal changes of thrombosed sinuses in 23 consecutive patients using spin-echo, gradient-echo, and MR angiography techniques. There are noted three stages: acute (days 1-5), subacute (up to day 15), and third stage (third week after clinical onset and the late stage for restitution of blood flow and persistence of thrombus). Dural sinus thrombosis can be established accurately with MR in the first two stages. Later stages may be difficult because of inhomogeneous recanalization and flow phenomenon. □JSR

Baird AE, Donnan GA, Austin MC, et al. **Reperfusion after thrombolytic therapy in ischemic stroke measured by single-proton emission computed tomography.** *Stroke* 1994;25:79-85.

Examination of reperfusion in patients who had received thrombolytic therapy and in a control group studied at the same time who were ineligible to receive the therapy by technetium-99m hexamethylpropyleneamine oxime single photon emission computed tomography. A greater number of patients who had received streptokinase had at least partial reperfusion on the second study, but this was not

significant. Patients who did not have reperfusion had higher mortality rates, less neurologic improvement, and more functional disability. There is a note that some reperfusion during the first 48 hours of ischemic stroke is a common natural occurrence and is of prognostic significance. □JSR

Brain Tumors and Cysts

Herholz K, Peitzyk U, Voges J, et al. **Correlation of glucose consumption and tumor cell density in astrocytomas.** *J Neurosurg* 1993;79:853-858.

Ten patients with grade 2 or 3 cerebral astrocytomas underwent FDG-positron emission tomography and stereotactic biopsy. Glucose consumption correlated significantly with cell density, but not with nuclear polymorphism. Positron emission tomography may therefore potentially be useful to direct needle biopsy to the areas of highest cell density and thus improve diagnostic yield in such procedures. □ADE

Miller DC, Lang FR, Epstein FJ. **Central nervous system gangliogliomas. Part 1: pathology.** *J Neurosurg* 1993;79:859-866.

Lang FF, Epstein FJ, Ransohoff J, et al. **Central nervous system gangliogliomas. Part 2: clinical outcome.** *J Neurosurg* 1993;79:867-873.

Two excellent review articles concerning the pathology and biologic behavior of gangliogliomas, supplemented by original clinical material in 58 patients treated at the New York University Medical Center from 1980 through 1990. □ADE

Kershisnik M, Callender DL, Batsakis JG. **Extracranial, Extraspinal Meningiomas of the Head and Neck.** *Ann Otol Rhinol Laryngol* 1993;102:967-970.

Meningiomas arising in an extracranial site constitute fewer than 2% of all meningiomas and are found most often in the head and neck, especially the orbit, sinonasal tract, parapharyngeal space, and the vicinity of the temporal bone. There is a predilection for areas of dural penetration by cranial nerves I, III, VII, IX, X, XI, and XII. This fascinating article contains no images. □JDS

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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Degenerative and Metabolic Disease and Aging

Oksenberg JR, Begovich AB, Erlich HA, Steinman L. **Genetic factors in multiple sclerosis.** *JAMA* 1993;270:2362-2369.

This literature review fails to uncover "putative MS genes." The "data synthesis" suggests "a polygenic model for disease predisposition." "Understanding the basis for autoimmune demyelination will offer new possibilities for the treatment" is undeniable, but it is not clear how this study led the authors to that conclusion. □JLW

MacCollin M, Mohny T, Trofatter J, et al. **DNA diagnosis of neurofibromatosis 2.** *JAMA* 1993;270:2316-2320.

The investigators found an inactivated tumor suppressor gene on chromosome 22 in "a large, well-studied neurofibromatosis 2 pedigree" (bilateral acoustic neurofibromatosis). They suggest screening the DNA of patients "at risk" rather than performing brain MR studies, as the altered gene is present before tumors appear. The details of SSCP gels and enzyme restriction digestion are fairly indigestible, but the introduction and discussion are interesting. □JLW

Albright AL, Barron WB, Fasick MP, Polinko P, Janosky J. **Continuous intrathecal baclofen infusion for spasticity of cerebral origin.** *JAMA* 1993;270:2475-2477.

More than half of the patients with cerebral palsy have spasticity. Rhizotomies reduce muscle tone but, as an all-or-nothing treatment, are not useful for patients who require some spasticity to walk. Baclofen is an agonist of γ -aminobutyric acid, which inhibits release of excitatory neurotransmitters. Oral baclofen is not very effective. The authors successfully treated spasticity with intrathecal baclofen administered continuously by a subcutaneous pump. Treatment could be titrated, and side effects were minimal. This article is short, clear, and very interesting. □JLW

Interventional Neuroradiology

Council on Scientific Affairs, AMA. **The use of pulse oximetry during conscious sedation.** *JAMA* 1993;270:1463-1467.

Hooked to a finger, a pulse oximeter provides a continuous, noninvasive estimate of arterial oxygen saturation. This article describes how pulse oximetry works, defines conscious sedation, describes settings in which pulse oximetry is used, tallies the cost of the equipment, presents other professional groups' recommendations, and identifies areas of controversy. Ultimately, however, the council hedges: their "recommendations" include "support for the development of guidelines and consensus statements by appropriate subspecialty societies . . ." Disappointing. □JLW

Ranjan A, Rajshekhar V, Joseph T, Chandy MJ, Chandi SM. **Nondiagnostic CT-guided stereotactic biopsies in a series of 407 cases: influence of CT morphology and operator experience.** *J Neurosurg* 1993;79:839-844.

Negative or nonspecific cerebral needle biopsy results were obtained in 29 (7%) of 407 cases. The incidence of negative findings was independent of the CT appearance of the lesion (ie, enhancing versus nonenhancing, dense versus hypodense) and the experience of the surgeon. □ADE

Kori SH. **Interventional neurology: a subspecialty whose time has come.** *Neurology* 1993;43:2395-2399.

The author advocates neurologists' taking an active role in carrying out CT-guided nerve blocks, intracarotid chemotherapy, local intraarterial fibrinolysis, angioplasty of cranial vessels, and embolization of aneurysms. (Further turf battles for neuroradiologists!) □SMW

Neck and Nasopharynx

Sato K, Kurita S, Hirano M. **Location of the preepiglottic space and its relationship to the paraglottic space.** *Ann Otol Rhinol Laryngol* 1993;102:930-934.

Whole-organ serial sections obtained in the sagittal, horizontal (axial), and coronal planes demonstrate the extent of the preepiglottic space and its relationship to the paraglottic space. They emphasize that the preepiglottic space exists not only anteriorly but also posterolateral and inferolateral to the epiglottis. The preepiglottic spaces are adjacent to the paraglottic space posteroinferiorly separated by the thyroglottic ligament. Posterosuperiorly, the two spaces are not clearly delineated from each other. This study uses no conventional CT or MR imaging. □JDS

Tertel KJ III, Beydoun NM, Thompson WC III. **Extracranial carotid artery aneurysm.** *Ann Otol Rhinol Laryngol* 1993;102:961-963.

Report of a 63-year-old man with a history of severe atherosclerosis and a 2- to 3-cm-high cervical palpable mass. Because there was a history of underlying carcinoma, the "mass" was thought by some observers to be a submandibular lymph node. Axial enhanced CT (and plain film examination) demonstrated calcification and intraluminal thrombus. The authors indicate that the common carotid artery at the bifurcation is the most frequently reported site of aneurysm formation in this vicinity. Morbidity can result from rupture, thrombosis, or embolism. Most patients have severe atherosclerosis and hypertension. Approximately 25% have other arterial aneurysms. Trauma and systemic syphilis are other reported causes. Mycotic aneurysms do also occur. Additionally, the authors emphasize that extensive intimal calcification can result in a firm mass that may masquerade as a lymph node. □JDS

Mandible and Maxilla

Trent C, Byl FM. **Aneurysmal bone cyst of the mandible.** *Ann Otol Rhinol Laryngol* 1993;102:917-924.

This case report and literature review contains one good-quality axial CT image of a multiloculated lesion arising within the masticator space from the ramus of the mandible which impinges secondarily on the parapharyngeal space. Several interesting hypotheses regarding pathogenesis are included. □JDS

Nose, Paranasal Sinuses, Face, and Oral Cavity

Sichel JY, Chisin R. Tortuous internal carotid artery: a rare cause of oropharyngeal bulging diagnosed by magnetic resonance angiography. *Ann Otol Rhinol Laryngol* 1993;102:964-966.

Three limited-quality MR images demonstrate a tortuous internal carotid artery impinging on the oropharynx. The authors emphasize that this variation can result from elongation and a subsequent S-shaped curve or a sharp bend or kink in the vessel. It is important for us to recognize this as a cause of a clinically demonstrated oropharyngeal submucosal pulsating "mass." The authors emphasize the use of MR angiography; however, this anomaly can be diagnosed with CT or routine spin-echo MR. □JDS

Ophthalmologic Radiology

Fekrat S, Miller NR, Loury MC. Alveolar rhabdomyosarcoma that metastasize to the orbit. *Arch Ophthalmol* 1993;11:1662-1664.

Diplopia developed in a 22-year-old woman 2 years after removal of a paravaginal alveolar rhabdomyosarcoma. Biopsy revealed a metastatic intraorbital lesion. Two good-quality coronal CT scans demonstrated an extracoronary soft-tissue mass but failed to reveal evidence of bony involvement. Histopathologic proof is included. □JDS

Spine

Simpson JM, Silveri CP, Balderston RA, et al. The results of operations on the lumbar spine in patients who have diabetes mellitus. *J Bone Joint Surg* 1993;12:1823-1829.

Clinical results of 62 patients who had diabetes mellitus and lumbar disk disease or spinal stenosis are compared with those of 62 age- and sex-matched nondiabetic patients with similar surgeries. Diabetic patients who have symptoms of weakness or diabetic sensory neuropathy before decompression are not likely to do well after surgery. These patients are more likely to have wound infections. □JSR

Vascular Lesions and Malformations

Macdonald RL, Wallace C, Kestle JRW. Role of angiography following aneurysm surgery. *J Neurosurg* 1993;79:826-832.

Postoperative angiograms obtained in 66 patients undergoing aneurysm clipping at two major Canadian centers revealed a significant number of unexpected abnormalities: partially clipped aneurysms (4%), completely unclipped aneurysms (4%), and unintentional occlusions of major cerebral arteries (12%). These findings support the liberal use of intraoperative and postoperative cerebral angiography in patients undergoing aneurysm surgery. □ADE

Cerebral Blood Flow

Schoning M, Walter J, Scheel P. Estimation of cerebral blood flow through color duplex sonography of the carotid and vertebral arteries in healthy adults. *Stroke* 1994;25:17-22.

The authors noninvasively estimated cerebral blood volume using color duplex sonography of the carotid and vertebral arteries in healthy adults. They found total cerebral blood flow to be 701 mL/min with no variation in age or sex. They conclude that duplex sonography is potentially a method for estimating total cerebral blood flow. □JSR

Functional Neuroradiology

Rao SM, Binder MR, Bandettini PA, et al. Functional magnetic resonance imaging of complex human movements. *Neurology* 1993;43:2311-2318.

Using echoplanar techniques, authors have elegantly shown activation of primary motor cortex as well as supplementary motor cortex areas with complex motor tapping of the fingers, whereas *only* the primary motor cortex is activated with simple motor tapping of the fingers. Excellent images. □SMW

Pediatric Neuroradiology and Congenital Malformations

Powell FC, Hanigan WC, McCluney KW. Subcortical infarction in children. *Stroke* 1994;25:117-121.

Report of five children with subcortical infarction and review of the English literature of this uncommon illness. Risk factors include infection, trauma, hematologic disorders, or cardiac or vascular abnormalities. Children with subcortical infarction usually present with acute hemiparesis. Two figures with MR and MR angiogram. Table listing the risk factors associated with subcortical infarction in children. □JSR

History of Neuroradiology

Drake ME. Mozart's chronic subdural hematoma. *Neurology* 1993;43:2400-2403.

Interesting paper for history buffs. Author questions (on the basis of a skull in the collection of the Mozarteum museum) that Mozart had a left temporal fracture and a chronic subdural hematoma. □SMW