Annotated Bibliography.

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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

Spine

Hurst RW, Kenyon LC, Lavi E, Raps EC, Marcotte P. **Spinal dural arteriovenous fistula: the pathology of venous hypertensive myelopathy.** *Neurology* 1995;45:1309–1313

This paper is one of the first reports to demonstrate the pathologic changes occurring in the spinal cord in a patient with a spinal dural arteriovenous fistula. Mural thickening with hyalinazation of both pial and intramedullary vessels reflects the effects of venous hypertension with associated damage to the underlying neuropil.□S.M.W.

Grob D, Humke T, Dvorak J. **Degenerative lumbar spinal stenosis.** *J Bone Joint Surg [Am]* 1995;77:1036–1041

The authors evaluated decompression of the spine with and without arthrodesis, for the treatment of lumbar spinal stenosis without instability. They conclude that arthrodesis is not necessary after decompression of the lumbar spine in patients who have degenerative stenosis, provided that stabilizing posterior elements are preserved during the operation. Clinical results also support the findings that symptomatic segmental instability does not develop after a partial medial facetectomy.□J.S.R.

Carey TS, Garrett J, Jackman A, McLaughlin C, Fryer J, Smucker DR. **The outcomes and costs of care for acute low back pain among patients seen by primary care practitioners, chiropractors, and orthopedic surgeons.** *N Engl J Med* 1995;333:913–917

Back pain is rampant. The cost is astronomical. Some of the results of this study were predictable (31% of patients have "incomplete" recovery). Some results were fascinating: visits to chiropractors (for "spinal manipulation") were cheaper than visits to MDs, and chiropractors charged less for X-ray films. However, chiropractors required so many more visits and X rays that they completely wiped out their financial advantage. Even though other outcome measures (days of work missed, etc) were the same for all patients, chiropractors' patients were more satisfied with their care than other patients. Interesting, but why? □J.L.W.

Yarde WL, Arnold PM, Kepes JJ, O'Boynick PL, Wilkinson SB, Batnitsky S. **Synovial cysts of the lumbar spine: diagnosis, surgical management, and pathogenesis: report of eight cases.** *Surg Neurol* 1995;43:459–465

A review of eight patients with diagnoses of lumbar spine synovial cysts, seven of whom had dramatic pain relief after resection. One MR, one CT, and six histopathologic images.□J.S.R.

Kohno M, Takahashi H, Kitanaka C, Sasaki T, Ishijima B. **Functional prognosis after treatment of spinal radiculomeningeal arteriovenous malformations.** *Surg Neurol* 1995;43:453–458

The authors evaluated the outcome of six patients with spinal radiculomeningeal arteriovenous malformations and 33 previously reported cases. Good functional prognosis is seen in patients who are less than 70 years of age, are treated within 2½ years after onset of symptoms, and have slight or moderate gait or urinary disturbance. They found no difference in outcome between surgical treatment and emobolization therapy.□J.S.R.

Vaccaro AR, Rizzolo SJ, Balderston RA, et al. **Placement of pedicle screws in the thoracic spine, II: an anatomical and radiographic assessment.** *J Bone Joint Surg [Am]* 1995;77:1200–1206

The authors had five experienced spine surgeons place 90 pedicle screws into the 4th through 12th thoracic vertebrae in fresh-frozen cadevera. They found 37 of these to have penetrated the cortex of the pedicle. The aorta and esophagus were at greatest risk for injury after advancement beyond the vertebral cortex margin anteriorly. They conclude that this procedure is technically difficult and fraught with complications. It should be used only in specific clinical circumstances.□J.S.R.

Delamarter RB, Sherman J, Carr JB. **Pathophysiology of spinal cord injury: recovery after immediate and delayed decompression.** *J Bone Joint Surg [Am]* 1995;77:1042–1049

The authors evaluated effects of timing of decompression of the spinal cord in dogs after a 50% reduction in diameter at the fourth lumbar level. There was a close association between the extent of neurologic recovery, the ability of the spinal cord to conduct electrophysiologic signals, and the neurohistologic characteristics and duration of the compression of the spinal cord. The study suggests that all the damage to the cord may not occur at the time of initial trauma, and depends on the duration of compression. Electron micrographs and histologic section.□J.S.R.

From Miami (Fla) 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 (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.).

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Temporal Bone

Post KD, Eisenberg MB, Catalano PJ. **Hearing preservation in vestibular schwannoma surgery: what factors influence outcome?** *J Neurosurg* 1995;83:191–196

Find these tumors early and small and the hearing outcome is better. Perhaps those of you still scanning for acoustic tumors with 10-mm-thick sections should reconsider your practice.□A.D.E.

Hardjasudarma M, Edwards RL, Ganley JP, Aarstad RF. **Magnetic resonance imaging features of Gradenigo's syndrome.** *Am J Otolaryngol* 1995;(16) 4:247–250

A patient had chronic otitis, fifth nerve anesthesia, and sixth nerve palsy. Six MR images reveal enhancing debris involving the left cavernous sinus and the cisternal segment of the ipsilateral fifth nerve and both sixth nerves. No CT included.□J.D.S.

Pollak A, Böhmer A, Spycher M, Fisch U. **Are papillary adenomas endolymphatic sac tumors?** *Ann Otol Rhinol Laryngol* 1995;104:613–619

A patient with Von Hippel-Lindau disease presents with bilateral papillary adenomas of the temporal bone. The authors refer to the extensive literature, which indicates that these lesions arise from the endolymphatic sac. Surgical and microscopic observations in their patients indicated that their neoplasms arose from the pneumatic spaces surrounding the jugular bulb rather than the endolymphatic sac. Limited-quality axial CT images appear to confirm this observation.□J.D.S.

Robertson K, Kumar A. **Atypical presentations of aural tuberculosis.** *Am J Otolaryngol* 1995;16:294–302

Review of five cases of temporal bone tuberculosis indicate that this disease has increased in incidence, corresponding to the overall increased incidence of tuberculosis in general. Three CT scans and two MR images demonstrate the destructive nature of the process as well as the tendency toward "peridural" granulation tissue and membranous labyrinthine involvement. The article is predominately clinical.□J.D.S.

Wiet RJ, Zappia JJ, Hecht CS, O'Connor CA. **Conservative management of patients with small acoustic tumors.** *Laryngoscope* 1995;105:795–800

Fifty-three cases of acoustic neuroma were managed with follow-up but no initial intervention. Twenty-one patients had tumor growth within 1.9 years and were treated. The remaining 32 (60%) had no demonstrable growth with a mean follow up of 2.13 years.□R.B.L.

van Leeuwen JPPM, Cremers WRJ, Thewissen NPMW, Harhangi BS, Meijer E. **Acoustic neuroma: correlation among tumor size, symptoms, and patient age.** *Laryngoscope* 1995;105:701–707

Data from 164 patients with acoustic neuroma over the last 13 years were reviewed to examine possible correlations among tumor size, patient age, signs and symptoms, and duration of symptoms. Comparisons were made between the findings in this study and reports in the literature. No support was found for any of the correlations mentioned in other studies and no relationships could be demonstrated between the parameters evaluated in this study. □R.B.L.

Stroke

Müller TB, Haraldseth O, Jones RA, et al. **Perfusion and diffusion-weighted MR imaging for in vivo evaluation of treatment with U74389G in a rat stroke model.** *Stroke* 1995;26:1453–1458

The authors used diffusion-weighted imaging and perfusion MR imaging (dynamic first-pass bolus tracking) to evaluate the efficacy of a free radical scavenger, U74389G, in a rat model of focal cerebral ischemia. The ischemic area seen on diffusion weighted imaging was significantly smaller in the treatment group than in the control group. The area of tissue injury defined with diffusion-weighted imaging closely paralleled that seen at histologic assessment.□J.S.R.

Hart RG, Boop BS, Anderson DC. **Oral anticoagulants and intracranial hemorrhage: facts and hypotheses.** *Stroke* 1995;26:1471–1477

Succinct review of frequency, predictors, and prognosis of intracranial hemorrhage associated with oral anticoagulation. Two CT figures and 63 references.□J.S.R.

Gillum RF. **Epidemiology of carotid endarterectomy and cerebral arteriography in the United States.** *Stroke* 1995; 26:1724–1728

Rates of carotid endarterectomy increased sharply after the 1991 publication of the results of the North American and European Trials of Carotid Endarterectomy. Marked racial disparities exist in this procedure, with white subjects having estimated rates of carotid endarterectomy more than four times higher than those of black subjects. □J.S.R.

Fisher M, Prichard JW, Warach S. **New magnetic resonance techniques for acute ischemic stroke.** *JAMA* 1995; 274:908–911

This abbreviation-riddled article discusses three "new" MR techniques: diffusion-weighted imaging (DWI), perfusion imaging (PI), and MR spectroscopy (MRS). From the Brownian (random) motion of water molecules, DWI helps calculate the apparent diffusion coefficient (ADR) of water in brain tissue. In (euphemistically-labelled) "stroke models," ADR drops promptly after ischemic injury, reflecting diminished cerebral blood flow. PI can help measure blood volume, blood transit time, and blood flow noninvasively. MRS helps evaluate biochemical abnormalities in the brain by measuring nonwater hydrogen (as opposed to the usual water protons of MR) and phosphorus. In spite of all the talk about water, the article is pretty dry.□J.L.W.

Passero S, Burgalassi L, D'Andrea P, et al. **Recurrence of bleeding in patients with primary intracerebral hemorrhage.** *Stroke* 1995;26:1189–1192

The authors followed 112 survivors of a first primary intracerebral hemorrhage for a mean period of 84 months after discharge. Twenty-four percent had one or more rebleeds during the follow-up period. Rebleeding also led to a high mortality rate, with 70% dying as a consequence of their second or third hemorrhage. Risk of rebleed was particularly high for gray-white junction hemorrhage, and with poor control of arterial hypertension.□J.S.R.

Valdueza JM, Schultz M, Harms L, Einhäupl KM. **Venous transcranial Doppler ultrasound monitoring in acute dural sinus thrombosis: report of two cases.** *Stroke* 1995;26: 1195–1199

The authors evaluated two patients with superior sagittal sinus thrombosis, and multiple healthy volunteers, using a range-gated 2-MHz transducer. Normal venous signal was at 40 to 72 mm, responding to basal vein of Rosenthal and deep middle cerebral vein. In the patients with superior sagittal thrombosis, there were elevated flow velocities. □J.S.R.

Konzen JP, Levin SR, Garcia JH. **Vasospasm and thrombus formation as possible mechanisms of stroke related to alkaloidal cocaine.** *Stroke* 1995;26:1114–1118

The authors present three patients who had angiographic and pathologic data suggesting that vasospasm and thrombus formation could be important mechanisms of crack cocaine–induced cerebral infarction. Hemorrhage may be secondary to reperfusion, rather than to primary hypertensive hemorrhage.□J.S.R.

Saunders DE, Howe FA, van den Boogaart A, McLean MA, Griffiths JR, Brown MM. **Continuing ischemic damage after acute middle cerebral artery infarction in humans demonstrated by short-echo proton spectroscopy.** *Stroke* 1995;26:1007–1013

Ten patients with acute middle cerebral artery infarct were studied within 28 hours of stroke onset and followed for a period of 3 months by short-echo-time MR spectroscopy on a 1.5-T system. Lactate and choline concentrations decreased during the first 7 to 10 days. The authors conclude that the continuing loss of metabolites within the infarcts suggest that further cell loss can occur up to 10 days after infarction. Four figures with two spectra.□J.S.R.

Proust F, Hannequin D, Langlois O, Freger P, Creissard P. **Causes of morbidity and mortality after ruptured aneurysm surgery in a series of 230 patients: the importance of control angiography.** *Stroke* 1995;26:1553–1557

Two hundred thirty consecutive patients were studied to determine the causes of morbidity and mortality after surgery for ruptured aneurysms. In patients in good condition before surgery, the major cause of complication was postoperative thrombosis. In patients with poor preoperative condition, the major complication was initial bleeding. Vasospasm was responsible for ischemic deficits in approximately 4% of the subjects. The authors conclude that angiography remains the best means of determining the cause of a poor postoperative course.□J.S.R.

Acartürk E, Özeren A, Sarica Y. **Detection of aortic plaques by transesophageal echocardiography in patients with ischemic stroke.** *Acta Neurol Scand* 1995;92:170–172

In 20% to 40% of all cerebral infarctions, the possible mechanism of the stroke can not be established. The authors found that in 6 of 28 consecutive patients with suspected embolic stroke with normal carotid artery Doppler ultrasonography, transesophageal echocardiography revealed protruding masses in the aortic lumen. The authors conclude that transesophageal echocardiography is the method of choice for detecting such lesions at present. □S.M.W.

Pediatric Neuroradiology and Congenital Malformations

Govaert P, Bridger J, Wigglesworth J. **Nature of the brain lesion in fetal allo-immune thrombocytopenia.** *Dev Med Child Neurol* 1995;37:485–495

In infants with intraparenchymal cerebral hemorrhage, the diagnosis of alloimmune thrombocytopenia arising in utero needs to be one diagnostic consideration. The occurrence of pial, subarachnoid, intraparenchymal, or intraventricular hemorrhage with this disorder is described, and a sequence of hemorrhagic events is proposed. The origin of this hemorrhagic process in utero or during delivery, and the development of sequelae including hydrocephalus, cystic encephalomalacia, and porencephaly is discussed.□J.A.B.

Gordon N. **Alternating hemiplegia of childhood.** *Dev Med Child Neurol* 1995;37:464–468

Clinical manifestations of alternating hemiplegia of childhood, and possible mechanisms underlying the development of these symptoms are reviewed. Migraine and several metabolic disorders that can present with similar patterns of alternating hemiplegia are briefly reviewed. There's not much mention of imaging findings.□J.A.B.

Krägeloh-Mann I, Petersen D, Hagberg G, Vollmer B, Hagberg B, Michaelis R. **Bilateral spastic cerebral palsy: MRI pathology and origin: analysis from a representative series of 56 cases.** *Dev Med Child Neurol* 1995;37:379–397

In 56 children with bilateral spastic cerebral palsy, the authors correlate MR findings with duration of pregnancy, known perinatal risk factors, birth weight, eventual motor disability, and results of psychological testing. The high MR correlation of periventricular leukomalacia with bilateral spastic cerebral palsy in preterm and term infants is described. Imaging alterations in the basal ganglia and in the cerebral cortex as parasagittal injury, lissencephaly, and multicystic encephalomalacia are also discussed. Findings are presented in relation to stages of brain development and to maturation of cerebrovascular regulation at the time of antenatal or perinatal insult.□J.A.B.

Burke CJ, Tannenberg AE. **Prenatal brain damage and placental infarction: an autopsy study.** *Dev Med Child Neurol* 1995;37:555–562

Autopsy study of the brains and placentas of 175 stillborn fetuses that were more than 20 weeks of gestational age. The authors describe a high correlation between histologic evidence of ischemic cerebral injury and structural evidence of placental infarction, and a significant but lower correlation with accelerated villous maturation. Possible relationships between placental dysfunction and cerebral ischemia in neonates with clinical neurologic dysfunction are discussed.□J.A.B.

Degenerative and Metabolic Disease and Aging

Ylikoski A, Erkinjuntti T, Raininko R, Sarna S, Sulkava R, Tilvis R. **White matter hyperintensities on MRI in the neurologically nondiseased elderly: analysis of cohorts of consecutive subjects aged 55 to 85 years living at home.** *Stroke* 1995;26:1171–1177

The authors examined a cohort of neurologically healthy elderly subjects and evaluated the frequency of hyperintensities on T2-weighted images using a 4-point scale. In this normal group, the frequency on MR of these white matter changes is frequent but of a mild degree. The frequency increases with age. Hyperintensities with correlated presence of centrum atrophy and silent infarcts and centrum simovale hyperintensities correlated to cardiac arrhythmias. The authors underscore the point that the factors explain only part of the variation; yet-unidentified age-related factors are likely to be linked to these signal intensity changes.□J.S.R.

Peterson K, Clark HB, Hall WA, Truwit CL. **Multifocal enhancing magnetic resonance imaging lesions following cranial irradiation.** *Ann Neurol* 1995;38:237–244

Six adult patients who received external cranial radiation for treatment of primary brain tumors had multiple enhancing lesions on MR 8 to 31 months after completion of radiation therapy. The lesions were multifocal, involved both gray and white matter, and changed in appearance over time. In two patients the lesion resolved completely over the course of 1 year, in three the lesions remained present but stabilized, and in one the lesion developed into frank necrosis and led to the patient's death.□N.A.

Case records of the Massachusetts General Hospital: weekly clinicopathological exercises. *N Engl J Med* 1995; 333:1135. Case 33-1995

This is the story of a 43-year-old right-handed mortician. He had a long (complex, confusing) history of waxing and waning abnormalities, both neurologic (diplopia, ataxia, paraplegia) and MR (hyperintense pons, midbrain, and cerebellar white matter on T2-weighted images); he also had a hemorrhagic frontal lobe infarction. Some of his symptoms responded to steroids. His most recent MR studies showed dramatic "miliary" foci throughout the brain, hyperintense on T2-weighted images and enhancing with gadolinium. His profession turns out to be an attention-grabbing red herring. No, not kuru: his disease was granulomatous angiitis, a rare vasculopathy of the central nervous system that affects small arteries and veins of the gray and white matter and leptomeninges. The diagnosis can be made only at biopsy and, in the words of one discussant, is often "a surprise." I'll second that. □J.L.W.

Pantoni L, Garcia JH. **The significance of cerebral white matter abnormalities 100 years after Binswanger's report: a review.** *Stroke* 1995;26:1293–1301

Nice review of Binswanger disease, focused on the more recent terminology of leukoaraiosis.□J.S.R.

Johns DR. **Mitochondrial DNA and disease.** *N Engl J Med* 1995;333:638

Blame your mother: you inherited your mitochondrial DNA from her. Greg LeMond's mitochondria are famous. Mutated mitochondrial DNA causes many, many mitochondrial encephalomyopathies. Examples include optic neuropathy, chronic, progressive external ophthalmoplegia, neuropathy, ataxia, and retinitis pigmentosa associated with maternally-inherited Leigh disease. Mitochondrial DNA are more susceptible to mutations than nuclear DNA and lack repair mechanisms. Greg LeMond retired from professional bicycle racing because of a mitochondrial myopathy. Blame his mother, too.□J.L.W.

Neck and Nasopharynx

Takeuchi Y, Numata T, Suzuki H, Konno A, Kaneko T. **Differential diagnosis of pulsatile neck masses by Doppler color flow imaging.** *Ann Otol Rhinol Laryngol* 1995; 104:633–638

The authors evaluated nine pulsatile neck masses with multiple imaging modalities. Seven lesions were eventually proved to be vascular lesions and two were nonvascular. Using Doppler color flow imaging, the authors were able to ascertain this distinction correctly. Multiple high-quality Doppler color and angiographic images illustrate the authors' major points.□J.D.S.

Don DM, Anzai Y, Lufkin RB, Fu Y-S, Calcaterra TC. **Evaluation of cervical lymph node metastases in squamous cell carcinoma of the head and neck.** *Laryngoscope* 1995; 105:669–674

The morphological characteristics of 957 lymph nodes from 36 neck dissections from patients with squamous cell carcinoma were examined microscopically. A large number of malignant nodes were found to have diameters of less than 10 mm. Extranodal spread also occurred in a substantial percentage of smaller nodes. Because the present radiological criteria for assessing cervical lymph node status are based largely on size, findings indicate major limitations in the capabilities of detecting metastatic disease.□R.B.L.

Ward RF, Jones J, Arnold JA. **Surgical management of congenital saccular cysts of the larynx.** *Ann Otol Rhinol Laryngol* 1995;104:707–710

Congenital saccular cysts are a cause of respiratory obstruction in infants and children. The authors emphasize that they are similar to laryngoceles in that they represent an abnormal dilatation or herniation of the saccule of the laryngeal ventricle. However, they are distinct from laryngoceles in that there is no opening to the ventricle and that they are filled with mucus. They can be further subclassified into anterior saccular cysts (intruding on the laryngeal lumen between the true and false cords) or lateral saccular cysts (between the false cord and aryepiglottic fold). In our literature, I believe they are referred to as "obstructed laryngoceles," with the anterior and posterior variety referred to as "internal" and "external," respectively. Drawings and endoscopic view only. No images. Interesting discussion.□J.D.S.