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N Altman, J A Brunberg, A D Elster, A E George, D B Hackney,
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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

Efficacy and Use Studies

Frishberg BM. **The utility of neuroimaging in the evaluation of headache in patients with normal neurologic examinations.** *Neurology* 1994;44:1191–1197.

Discusses the value of neuroimaging in patients with headache and normal neurologic examinations. The conclusions drawn are that neuroimaging demonstrates a *very low* rate of intracranial disease (0.3% to 0.4%) in patients with migraine symptoms and a *low* rate of disease (2.4%) in patients with headaches in general. In the first category, the consensus panel concludes that neuroimaging is not warranted, whereas for patients in the second category neuroimaging may be indicated. The study is important as we wrestle with the issue of appropriate guidelines for neuroimaging studies. □SMW

Neck and Nasopharynx

Kountakis SE, Minotti AM, Maillard A, Stiernberg CM. **Teratomas of the head and neck.** *Am J Otolaryngol* 1994;15:292–296.

Teratomas are composed of tissues from all three germ layers with varying degrees of differentiation. This brief review classifies and categorizes these unusual lesions using embryologic considerations. No cross-sectional imaging. □JDS

McIlvor NP, Freeman JL, Salem S, Elden L, Noyek A, Bedard YC. **Ultrasonography and ultrasound guided fine-needle aspiration biopsy of head and neck lesions: a surgical perspective.** *Laryngoscope* 1994;104:669–674.

An ultrasound unit was used by surgeons in a head and neck clinic to guide aspiration cytology on 195 lesions in 203 patients. Ultrasound detected two or more lesions in 48% of patients with clinically solitary thyroid nodules; 8.8% of lesions thought to be in the parotid glands were determined to be external. Experience improved the adequacy of sampling with values of 71%, 89%, and 94% for consecutive 3-month periods. □RBL

Temporal Bone

Smullen S, Willcox T, Wetmore R, Zackai E. **Otologic manifestations of neurofibromatosis.** *Laryngoscope* 1994;104:663–665.

The studies of 440 pediatric patients with neurofibromatosis were reviewed with attention to otologic manifestations. The most common otologic finding was neurofibroma involving the external ears, seen exclusively in patients with neurofibromatosis type 1. The next most common finding was acoustic neuroma seen exclusively in patients with neurofibromatosis type 2. □RBL

Gacek RR, Gacek MR. **Vertigo secondary to postlabyrinthectomy neuroma.** *Am J Otolaryngol* 1994;15:301–306.

Coronal contrast-enhanced T1-weighted image demonstrates an enhancing intravestibular lesion 18 months after revision labyrinthectomy. Removal of the lesion and the vestibular ganglion relieved symptoms. Interesting review. □JDS

Smith LN. **Unilateral sensorineural hearing loss in Behcet's disease.** *Am J Otolaryngol* 1994;15:286–288.

Report of a patient with Behcet disease in whom mild to moderate unilateral sensorineural hearing loss developed. Literature review of persons with sensorineural hearing loss associated with other vasculitides did indeed indicate vasculitic changes in the cochlea. No images. □JDS

Seidman DA, Chute PM, Parisier S. **Temporal bone imaging for cochlear implantation.** *Laryngoscope* 1994;104:562–565.

Eighty-one patients who underwent cochlear implantation were reviewed. The computed tomographic (CT) scan significantly underrepresented the degree of cochlear obstruction in 22% of patients. In those patients with postmeningitic hearing loss the group missed was 47%. Authors speculate that this may be caused by the presence of metaplastic bone with deficient mineralization that is difficult to detect on CT. Limited numbers of patients studied with magnetic resonance (MR) suggest that this technique may have advantages over CT in this area. □RBL

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.).

Vascular Lesions and Malformations

Sismanis A, Smoker W. **Pulsatile tinnitus.** *Laryngoscope* 1994;104:681-688.

One hundred patients with pulsatile tinnitus were reviewed. MR angiography has had a major impact in the evaluation of this entity. Conventional cerebral angiography is now indicated in selected cases only. Intracranial hypertension, glomus tumors, and carotid atherosclerosis were the most common diagnoses in the series. □RBL

Diehl RR, Henkes H, Nahser H-C, Kuhne D, Berlit P. **Blood flow velocity and vasomotor reactivity in patients with arteriovenous malformations: a transcranial Doppler study.** *Stroke* 1994;25:1574-1580.

Eighteen patients with untreated arteriovenous malformations evaluated with angiography with transcranial Doppler sonography. Transcranial Doppler was used during carbon dioxide breathing in a closed system to evaluate vasomotor reactivity for 1 minute. Authors conclude that arteriovenous malformation feeders are characterized by pathologic vasomotor reactivity values. They postulate that vasomotor reactivity measurements may help distinguish between the high-flow/high-pressure arteriovenous malformations with slightly reduced vasomotor reactivities, with an increased risk of hemorrhage and those arteriovenous malformations that are high flow/low pressure (with strongly reduced vasomotor reactivities), which are at risk for development of progressive neurologic deficits. □JSR

Stroke

Barinagarrementeria F, Cantu C. **Primary medullary hemorrhage: report of four cases and review of the literature.** *Stroke* 1994;25:1684-1687.

Four new cases of medullary hemorrhage and a review of the literature, for a total of 16 case reports. The fatality rate is approximately 19%, but survivors generally have nonincapacitating sequelae. Primary medullary hemorrhage presents with a syndrome of sudden onset of headache and vertigo and with various combinations of signs of medial and lateral medullary involvement. Two MR figures. □JSR

van Gijn J, Bromberg JEC, Lindsay KW, Hasan D, Vermeulen M. **Definition of initial grading, specific events, and overall outcome in patients with aneurysmal subarachnoid hemorrhage.** *Stroke* 1994;25:1623-1627.

Review of articles about subarachnoid hemorrhage published in nine neurosurgical and neurologic journals from 1985 through 1992. The survey uncovered frequent shortcomings in the precision of reporting on patients with subarachnoid hemorrhage. The four neurosurgical journals reported suitable definitions in only 20% of instances, whereas the neurology journals showed adequate criteria in 65%. □JSR

Smurawska LT, Alexandrov AV, Bladin CF, Norris JW. **Cost of acute stroke care in Toronto, Canada.** *Stroke* 1994;25:1628-1631.

The authors calculated the cost of acute stroke care for first admissions to teaching hospitals in Toronto, Canada, in 1991 and 1992. The average cost was approximately US\$21 000, with strokes in men costing less than in women. Mean cost per day was approximately US\$520. □JSR

Kim JS, Lee JH, Lee MC. **Small primary intracerebral hemorrhage: clinical presentation of 28 cases.** *Stroke* 1994;25:1500-1506.

Twenty-eight patients had primary intracerebral hemorrhages no larger than 1.5 cm in diameter by CT and/or MR imaging. Hemorrhages of this size most often occurred in the superior portion of the basal ganglia and posterior limb of the internal capsule tegmentum and in the area around the fourth ventricle. They tend to produce classic lacunar syndromes in which pure sensory stroke is common. They occur in association with hypertension and may result from the rupture of small end arteries. □JSR

Kim JS, Lee JH, Suh DC, Lee MC. **Spectrum of lateral medullary syndrome: correlation between clinical findings and magnetic resonance imaging in 33 subjects.** *Stroke* 1994;25:1405-1410.

The authors compared MR scans and clinical findings in 33 consecutive patients with lateral medullary infarction. They found that generally the rostral lesions are diagonally band shaped and correlated with dysphagia, hoarseness, and facial paresis. Caudal lesions seemed to correlate with marked nystagmus, vertigo, and gait ataxia. Nausea, vomiting, and Horner sign are common regardless of the location of the lesion. □JSR

Alexandrov AV, Bladin CF, Norris JW. **Intracranial blood flow velocities in acute ischemic stroke.** *Stroke* 1994;25:1378-1383.

Seventy-five consecutive stroke patients evaluated with transcranial Doppler as well as CT, technetium 99 hexamethylpropyleneamine oxime single-photon emission CT, and carotid duplex ultrasound. Transcranial Doppler showed 67% of patients with acute stroke had occluded middle cerebral arteries within 4 hours after onset, and by 2 weeks 86% of these had recanalized. Transcranial Doppler performed within 24 hours predicted short-term recovery. This has potentially important implications for thrombolytic therapy decisions. □JSR

Lindgren A, Norrving B, Rudling O, Johansson BB. **Comparison of clinical and neuroradiological findings in first-ever stroke.** *Stroke* 1994;25:1371-1377.

Two hundred twenty-eight patients with initial stroke were divided into: (a) total anterior circulation syndrome, (b) partial anterior circulation syndrome, (c) lacunar syndrome, and (d) posterior circulation syndrome and evaluated by CT and/or MR. The authors conclude that the classification suggested by Bamford (*Lancet* 1991;337:1521-1526) is significantly related to distinctive features on CT and MR, such as bleeding frequency, lesion volume, cortical involvement, and involvement of the posterior circulation territory. □JSR

Broderick JP, Brott TG, Duldner JE, Tomsick T, Leach A. **Initial and recurrent bleeding are the major causes of death following subarachnoid hemorrhage.** *Stroke* 1994;25:1342-1347.

The authors identified the first-ever spontaneous subarachnoid hemorrhages in a large metropolitan population in 1988 and found that most deaths after subarachnoid hemorrhage are very rapid and caused by the initial hemorrhage. Rebleeding is an important preventable cause of death. Delayed arterial vasospasm plays a minor role in mortality. □JSR

Knight RA, Dereski MO, Helpert JA, et al. **Magnetic resonance imaging assessment of evolving focal cerebral ischemia: comparison with histopathology in rats.** *Stroke* 1994;25:1252-1262.

The authors evaluated cerebral ischemia in a rat model and correlated histologic changes with MR and diffusion-weighted imaging. They show that observed changes in water movement occur in regions with injured neurons that are destined to die. Correlation of histology with the diffusion-weighted imaging is good in most areas of injury. The water-diffusion coefficient was the only MR parameter studied, which showed significant alterations within the first 4 hours after arterial occlusion. □JSR

Barbour PJ, Castaldo JE, Rae-Grant AD, et al. **Internal carotid artery redundancy is significantly associated with dissection.** *Stroke* 1994;25:1201-1206.

The angiograms of 13 patients with spontaneous carotid dissection are compared with 108 percutaneous cerebral angiograms as controls. Sixty-five percent of the carotid arteries with spontaneous dissection had significant redundancies, kinks, coils, or loops. Of the control group, 12% of the vessels showed redundancy. Authors found a significant correlation between internal carotid artery redundancy and dissection. Three figures. □JSR

Streifler JY, Eliasziw M, Fox AJ, et al. **Angiographic detection of carotid plaque ulceration: comparison with surgical observations in a multicenter study.** *Stroke* 1994;25:1130-1132.

Detection of ulceration by angiography was compared with observations during endarterectomy in the first 500 patients recruited to the North American Symptomatic Carotid Endarterectomy Trial. Sensitivity and specificity for detecting ulcerated plaques were 45.9% and 74.1%, respectively. Little agreement exists between biplanar carotid angiography and surgical observation in detecting plaque ulceration. □JSR

Goldstein LB, McCrory DC, Landsman PB, et al. **Multi-center review of preoperative risk factors for carotid endarterectomy in patients with ipsilateral symptoms.** *Stroke* 1994;25:1116-1121.

The authors evaluated records from 1160 carotid endarterectomies at 12 medical centers and identified the preoperative clinical factors that increase the risk of complications after carotid endarterectomy in patients with ipsilateral hemispheric symptoms. A significant medical and demographic variable was age greater than 75 years. Significant angiographic variables included complete occlusion, evidence of intraluminal thrombus, and stenosis near the carotid siphon of the ipsilateral carotid artery. The data suggest that careful angiographic evaluation may be important to estimate surgical risk better, irrespective of its role in defining the degree of carotid stenosis for surgical candidates. □JSR

Babikian VL, Hyde C, Pochay V, Winter MR. **Clinical correlates of high-intensity transient signals detected on transcranial Doppler sonography in patients with cerebrovascular disease.** *Stroke* 1994;25:1570-1573.

Of 75 consecutive patients, 60 had histories of cerebral or retinal transient ischemic attacks or infarcts, and 15 were asymptomatic. Authors assessed whether high-intensity transient signals (reflecting particulate cerebral emboli) related to cerebral arterial stenosis. They detected signals in the territories of 28.3% of symptomatic and 1.6% of asymptomatic arteries, and concluded that transient signals are more common in territories of symptomatic arteries and distal to lesions causing more than 50% stenosis. □JSR

Spine

Crino PB, Zimmerman R, Laskowitz D, Raps EC, Rostami AM. **Magnetic resonance imaging of the cauda equina in Guillain-Barré syndrome.** *Neurology* 1994;44:1334-1336.

This report discusses three patients with the Guillain-Barré syndrome with gadolinium enhancement of the cauda equina 8 to 16 days after the onset of weakness. □SMW

Pediatric Neuroradiology and Congenital Malformations

Reiss AL, Lee J, Freund L. **Neuroanatomy of fragile X syndrome: the temporal lobe.** *Neurology* 1994;44:1317-1324.

Quantitative neuroimaging of the temporal lobes showed that the hippocampal volumes bilaterally are significantly larger in patients with the fragile X syndrome than in healthy control subjects. □SMW