

Abstract Selection

Evoked potentials and CSF-immunoglobulins in MS: relationship to disease duration, disability, and functional status. Sand T., Sulg I. A. Department of Neurology, Regionsykehuset, Trondheim, Norway. *Acta Neurologica Scandinavica* (1990) Sep, Vol: 82 (3), pp. 217–21.

In 100 MS patients, BAEP and tibial SEP abnormality rates increased significantly with disease duration and clinical disability. VEP correlated non-linearly with disease duration, and median nerve SEP correlated with disability. In multifactorial analysis, however, BAEP correlated significantly only with clinical brainstem and cerebellar signs. These results suggest that evoked potentials correlate more strongly with neurological status of the functional subsystems than either overall disability or disease duration. These findings indirectly suggest that evoked potentials may be useful monitors during large therapeutical trials in MS patients. Author.

Contrast enhancement of the labyrinth on MR scans in patients with sudden hearing loss and vertigo: evidence of labyrinthine disease (see comments). Seltzer, S., Mark, A. S. Department of Radiology, George Washington University, Washington, DC 20052. *American Journal of Neuro-Radiology* (1991) Jan–Feb; 12 (1), pp. 17–8.

The sudden onset of hearing loss and vertigo presents a difficult diagnostic problem. We describe the finding of labyrinthine enhancement on MR images in five patients with sudden unilateral hearing loss or vertigo or both and correlate the MR findings with audiologic and electronystagmographic studies. All patients were studied with T2-weighted axial images through the whole brain, contrast-enhanced 3-mm axial T1-weighted images through the temporal bone, and enhanced T1-weighted sagittal images through the whole brain. Cochlear enhancement, on the side of hearing loss only, was found in all five patients. The presence of associated vestibular enhancement correlates with objective measures of vestibular function on the electronystagmogram. In two patients, the resolution of symptoms 4–6 months later correlated with resolution of the enhancement on gadopentetate dimeglumine-enhanced MR images. Two patients had luctic labyrinthitis. No labyrinthine enhancement was seen in a series of 30 control subjects studied with gadopentetate dimeglumine-enhanced MR using the same protocol. Labyrinthine enhancement in patients with auditory and vestibular symptoms is a new finding and is indicative of labyrinthine disease. While abnormalities on electronystagmograms and audiograms are nonspecific and indicate only a sensorineural problem, gadopentetate dimeglumine-enhanced MR may separate patients with retrocochlear lesions, such as acoustic neuromas, from those in whom the abnormal process is in the labyrinth or is intraaxial. This group of patients underscores the importance of identifying and commenting on the structures of the membranous labyrinth when evaluating MR studies of the internal auditory canal and the cerebellopontine angle in individuals with hearing loss. Author.

Sinonasal psammomatoid ossifying fibromas: CT and MR manifestations. Han, M. H., Chang, K. H., Lee, C. H., Seo, J. W., Han, M. C., Kim, C. W. Department of Diagnostic Radiology, Seoul National University College of Medicine, Korea. *American Journal of Neuro-Radiology* (1991) Jan–Feb, Vol: 12 (1), pp. 25–30.

Five cases of pathologically proved psammomatoid ossifying fibromas of the sinonasal area are presented. All five cases were examined by CT and in three cases MR imaging was performed before and after injection of gadopentetate dimeglumine. The lesions were located in the sphenothmoidal area and extended over the nasal cavity or orbit in four cases. In one case, the lesion occurred at the perpendicular plate of the ethmoid bone with preservation of the ethmoidal sinus. On CT, all the lesions were expansile and circumscribed by a thick bony wall. Internal septations of bone

density (four cases) or enhancing soft-tissue density (one case) were seen and internal content was low in density in all but one from which blood was aspirated. On MR, the bony walls were iso-intense with gray matter on T1-weighted images and were seen as areas of low intensity on T2-weighted images. The lesions significantly enhanced after injection of contrast material. A well-circumscribed multiloculated expansile mass with a thick wall of bone density on CT scans and enhancement of this area on postcontrast MR images is strongly suggestive of psammomatoid ossifying fibroma. Author.

Relationship between vertical dentofacial morphology and respiration in adolescents. Fields, H. W., Warren, D. W., Black, K., Phillips, C. L. Department of Orthodontics, School of Dentistry, University of North Carolina, Chapel Hill. *American Journal of Orthodontics and Dento-facial Orthopedics* (1991) Feb, Vol: 99 (2), pp. 147–54.

The relationship between vertical dentofacial morphology and respiration has been debated and investigated from various approaches. The purpose of this study was to use contemporary respirometric techniques to compare the breathing behavior of normal and long-faced adolescents. Sixteen normal and 32 long-faced subjects 11 to 17 years of age were chosen clinically and verified by means of a discriminant function. Vertical and anteroposterior facial form was assessed from lateral cephalometric radiographs according to the following measurement criteria: six skeletal angular, eight skeletal linear, four dental linear, and three skeletal ratios. Breathing behavior was quantified according to tidal volume, minimum cross-sectional nasal area, and per cent of nasal breathing as assessed by pneumotachography, measurement of differential pressures, and inductive plethysmography. The data indicated that the normal and long-faced groups were significantly different with respect to lower face form, and each group in the study was comparable to groups that had been chosen by previous investigators. Multiple regression analysis demonstrated that the normal and long-faced groups had similar tidal volumes and minimum nasal cross-sectional areas, but the long-faced subjects had significantly smaller components of nasal respiration. These results illustrate that groups without significant differences in airway impairment can have significantly different breathing modes that may be behaviorally based, rather than airway-dependent. Author.

Solitary fibrous tumor of the nasal cavity and paranasal sinuses. Zukerberg, L. R., Rosenberg, A. E., Randolph, G., Pilch, B. Z., Goodman, M. L. Department of Pathology, Harvard Medical School, Boston, Massachusetts. *American Journal of Surgical Pathology* (1991) Feb, Vol: 15 (2), pp. 126–30.

We report two solitary fibrous tumors of the nasal cavity and paranasal sinuses that were histologically and immunohistochemically virtually identical to solitary fibrous tumors (Fibrous mesotheliomas) of the pleura. One tumor arose in a 48-year-old woman and the other in a 45-year-old woman. Both patients presented with nasal symptoms, and both patients are alive without evidence of disease six months and one year after excision. The tumors had a disorganized or 'patternless' arrangement of spindle cells in a collagenous background and prominent vascular channels of varying size. Immunoperoxidase stains on paraffin sections showed staining of the cells for vimentin only; there was no staining for keratin, S-100 protein, desmin, and actin. Both cases presented some degree of diagnostic difficulty and had to be distinguished from other spindle cell tumors of the nasal cavity and paranasal sinuses, such as hemangiopericytoma, angiofibroma, and fibrous histiocytoma. Author.

Spindle cell myoeptelioma of the nasal cavity. Begin, L. R.,

Rochon, L., Frenkiel, S. Department of Pathology, McGill University, Montreal, Quebec, Canada. *American Journal Surgical Pathology* (1991) Feb, Vol: 15 (2), pp. 184–90.

Minor salivary gland neoplasms with mesenchymal-like features are uncommon in the sinonasal tract. We herein report a case of spindle cell myoepithelioma of the nasal cavity in a 69-year-old woman who presented with a rapidly expanding tumor accompanied by episodes of epistaxis. Although initially considered as a mesenchymal neoplasm, ultrastructural and immunophenotypical characterization demonstrated its myoepithelial nature. In the sinonasal setting, this unusual neoplasm may be confused with soft tissue tumors showing spindle cell or myxoid features. Staining for cytokeratin is found to be the most useful adjunct to diagnosis. Author.

Nasal pulse oximetry overestimates oxygen saturation. Rosenberg, J., Pedersen, M. H. Department of Surgical Gastroenterology, Hvidovre University Hospital, Denmark. *Anaesthesia* (1990) Dec, Vol: 45 (12), pp. 1070–1.

Ten surgical patients were monitored with nasal and finger pulse oximetry (Nellcor N-200) for five study periods with alternating mouth and nasal breathing and switching of cables and sensors. Nasal pulse oximetry was found to over-estimate arterial oxygen saturation by 4.7 (SD 1.4 per cent) (bias and precision). Author.

Ototoxic reaction to erythromycin. Agusti, C., Ferran, F., Gea, J., Picado, C. Department of Pneumology, Hospital Clinic, Faculty of Medicine, Barcelona, Spain. *Archives of Internal Medicine* (1991) Feb, Vol: 151 (2), pp. 380.

We report a case of bilateral hearing loss in a patient treated with intravenous erythromycin lactobionate. The ototoxic reaction occurred despite the patient's having normal renal and hepatic function and the fact that serum erythromycin levels were within the predicted normal range. In addition to hearing loss, a marked labyrinthine hyporreflexia was also observed. Hearing loss improved after the treatment was discontinued, but labyrinthine abnormalities persisted suggesting that erythromycin had caused a permanent vestibular damage. Author.

Delayed evoked otoacoustic emissions—an ideal screening test for excluding hearing impairment in infants. Zwicker E., Schorn K. Institute of Electroacoustics, Technische Universität München, FRG. *Audiology* (1990), Vol: 29 (5), pp. 241–51.

A screening test is badly needed with which cochlear hearing impairment in small children and newborns can be detected. Delayed evoked otoacoustic emissions (DEOAEs) have been found in laboratory research to be a very useful tool to test the normality of cochlear preprocessing. The characteristics of a simple apparatus for clinical use to measure DEOAEs are described together with typical examples of emissions. Many case studies have already demonstrated the clinical usefulness of DEOAEs in neonates and small children. Five cases are explained in detail and the advantages of such an early screening test discussed. Author.

Changes of stapedius reflex and hearing threshold in patients receiving high-dose cisplatin treatment. Laurell, G., Skedinger, M. Department of Audiology, Karolinska Sjukhuset, Stockholm, Sweden. *Audiology* (1990), Vol: 29 (5), pp. 252–61.

The value of stapedius reflex (SR) measurement in the clinical management of the ototoxic side-effect of cisplatin was examined in 24 patients who had received a dose of 100–120 mg/m². The main finding was a frequent but inconsistent deterioration of the SR threshold (SRT) at 3 and/or 4 kHz, usually with a moderate rise of the hearing threshold (HT) in the frequency range 3–8 kHz. A hearing loss exceeding 60 dB HL is detected with high probability as an SRT deterioration. None of the patients showed any influence on the SRT before the HT rise could be detected. The SR test cannot replace pure-tone audiometry for the identification of cisplatin ototoxicity. The pathological SR results observed in this study indicated a cochlear lesion. It was not possible to identify those patients most susceptible to ototoxic changes from the pretreatment results of the SR test. Author.

A clinical test for the assessment of binaural speech perception in

noise. Bronkhorst, A. W., Plomp, R. Department of Otolaryngology, Free University Hospital, Amsterdam, The Netherlands. *Audiology* (1990), Vol: 29 (5), pp. 275–85.

The present paper describes a clinical test for the assessment of speech perception in noise. The test was designed to separate the effects of several relevant monaural and binaural cues. Results show that the performance of individual hearing-impaired listeners deviates significantly from normal for at least two of the following aspects: (1) perception of speech in steady-state noise; (2) relative binaural advantage due to directional cues; (3) relative advantage due to masker fluctuations. In contrast, both the hearing loss for reverberated speech and the relative binaural advantage due to interaural signal decorrelation, caused by reverberation, were essentially normal for almost all hearing impaired. Author.

Duration pattern recognition in normal subjects and patients with cerebral and cochlear lesions. Musiek, F. E., Baran, J. A., Pinheiro, M. L. Department of Surgery, Dartmouth-Hitchcock Medical Center, Hanover, N.H. *Audiology* (1990), Vol: 29 (6), pp. 304–13.

Three groups of subjects were tested on a duration pattern recognition task. The groups included normal subjects, subjects with cochlear hearing loss, and subjects with lesions involving but not limited to the auditory areas of the cerebrum. Results indicated no significant difference in pattern recognition between the normal subjects and subjects with cochlear hearing loss. However, the subjects with cerebral lesions performed significantly more poorly than either the normal subjects or those with cochlear hearing loss. In comparing pattern recognition performance for the ears ipsilateral and contralateral to the lesioned hemispheres no differences were noted. Rather, when a central lesion was present, both ears generally yielded abnormal scores. Author.

40-Hz steady-state responses in newborns and in children. Maurizi, M., Almadori, G., Paludetti, G., Ottaviani, F., Rosignoli, M., Luciano, R. Institute of Otorhinolaryngology, Catholic University of the Sacred Heart, Rome, Italy. *Audiology* (1990), Vol: 29 (6), pp. 322–8.

The authors investigated the 40-Hz steady-state responses (SSR) in 32 full-term newborns and in 10 normal children (5–8 years old), using 500-Hz tone bursts. The 40-Hz SSR threshold is located at about 50 and 30 dB nHL in newborns and older children, respectively. The latencies of both P1 and N1 waves decreased significantly with age, while the amplitudes increased. No significant latency and amplitude intersex differences have been observed. Moreover, with age, the 40-Hz SSR became more stable, their test-retest replicability improved, and P1-N1 wave occurrence increased. The authors finally discuss the possible underlying mechanisms of these findings and conclude that the 40-Hz SSR are difficult to obtain and are scarcely reliable in defining the low-frequency threshold in newborns. The stability and reliability of the responses increase with age, and the electrophysiological and behavioral thresholds to low-frequency stimuli tend to overlap. Author.

Neurofibromatosis 2: report of an affected kindred, with a discussion of imaging strategy. Ferris, N. J., Siu, K. H. Department of Radiology, Alfred Hospital, Melbourne. *Australasian-Radiology* (1990) Aug, Vol: 34 (3), pp. 229–33.

Three cases of neurofibromatosis 2 occurring in one family are presented. Features distinguishing this condition from the more common neurofibromatosis 1 are discussed and the important role of radiological screening in case detection and follow-up is emphasized. Author.

Gastrin, cholecystokinin and their precursors in acoustic neuromas. Rehfeld, J. F., van Solinge, W. W., Tos, M., Thomsen, J. Department of Clinical Chemistry, Righospitalet, Copenhagen, Denmark. *Brain Research* (1990) Oct 22, Vol: 530 (2), pp. 235–8. Using sequence-specific radioimmunoassays the occurrence of four neuropeptides (cholecystokinin (CCK), gastrin, somatostatin, substance P and some of their precursors) was examined in 19 human acoustic nerve tumors and corresponding normal tissue. The normal acoustic nerve tissue obtained by autopsy contained traces of CCK, somatostatin, and substance P (less than or equal to 0.5 pmol/g), but neither proCCK, gastrin nor progastrin. In con-

trast eight tumors expressed proCCK (range 0.2–4.5 pmol/g), three tumors gastrin (0.1–7.3 pmol/g) and 14 tumours progastrin (0.6–2.2 pmol/g). Traces of somatostatin were present in two and substance P in one tumor. The results show that acoustic neuromas often express the homologous CCK and gastrin genes, but process their propeptides poorly to transmitter-active peptides. The tumor synthesis of gastrin/progastrin contrasts to the rare, sporadic expression of the gastrin gene in normal nerve tissue. Author.

Gentamicin impregnated polymethylmethacrylate (PMMA) beads in the treatment of primary chronic osteomyelitis of the mandible. Grime, P. D., Bowerman, J. E., Weller, P. J. Norman Rowe Maxillofacial Unit, Queen Mary's University Hospital, Roehampton. *British Journal of Oral Maxillofacial Surgery* (1990) Dec, Vol: 28 (6), pp. 367–74.

Primary chronic osteomyelitis (chronic diffuse sclerosing osteomyelitis) of the mandible is an uncommon condition, probably arising as a consequence of infection with bacteria of low virulence, in which bone deposition rather than bone resorption occurs. These bacteria are most likely derived from skin or oral mucosa gaining access to bone from the periodontium or through the circulation. Furthermore, delayed hypersensitivity and ischaemic changes within bone may contribute to the inflammatory response, which once initiated is very difficult to eradicate. When the likely aetiological factors are considered a logical approach to management includes the surgical removal of affected bone and the topical application of a broad spectrum antibiotic to the resultant surgical bed. Author.

Recurrence after radiotherapy for glottic carcinoma. Viani, L., Stell, P. M., Dalby, J. E. Department of Otorhinolaryngology, University of Liverpool, England. *Cancer* (1991) Feb 1, Vol: 67 (3), pp. 577–84.

A series of 478 patients with T1-3N0 glottic carcinoma treated by irradiation is presented. Of these patients, 320 were previously untreated, whereas 158 patients were referred for treatment of a recurrence after receiving radiotherapy elsewhere. The primary recurrence rate in the previously untreated patients was 10 per cent. The rate was higher in T2 and T3 tumors, poorly differentiated tumors, and in patients who were in poor general condition. Over 80 per cent of the recurrent tumors were Stage pT3 or pT4, whereas 12 per cent of total laryngectomy specimens showed necrosis only with no evidence of tumor. The necrosis rate in previously untreated patients was 1 per cent for T1 tumors, 4 per cent for T2 tumors, and 3 per cent for T3 tumors. Of all tumors, 60 per cent were transglottic when they recurred, whereas only 29 per cent were confined to the glottis at recurrence. Histologic diagnosis had a high sensitivity but a low specificity, indicating that a negative histologic report is unreliable. Of patients with a recurrent primary tumour, 13 per cent were untreatable. The five-year survival after a primary recurrence was 39 per cent, and the main prognostic factors were sex, T stage at recurrence, and time to recurrence. Of patients available for follow-up at five years 49 per cent were alive with a larynx, 5 per cent were alive without a larynx, 13 per cent were dead of the original cancer, and 33 per cent had died of other causes. In those suffering a primary recurrence, the commonest cause of death was a subsequent lymph node metastasis, followed in order of frequency by stomal recurrence and recurrence in the pharyngeal remnant. The hospital mortality rate after laryngectomy was 3 per cent, and 30 per cent of patients undergoing laryngectomy developed a pharyngocutaneous fistula. The recurrence rate in lymph nodes was 14 per cent at five years, general condition and T stage being the only significant predictors of recurrence. Only 17 per cent of patients had small (N1) nodes by the time the diagnosis of cervical lymph node recurrence was made, and 27 per cent of all patients were unsuitable for treatment. Host, tumor factors, and time to recurrence were not significant predictors of survival after node recurrence. The survival rate five years after node recurrence was 16 per cent, and the main cause of death in those who died was uncontrolled disease in the neck. The hospital mortality after salvage neck dissection was 4.7 per cent. Author.

The role of infection in the morbidity and mortality of patients with head and neck cancer undergoing multimodality therapy. Hussain, M., Kish, J. A., Crane, L., Uwayda, A., Cummings, G., Ensley, J. F., Tapazoglou, E., Al-Sarraf, M. Division of Hematology and

Oncology, Wayne State University, Harper Grace Hospitals, Detroit, MI 48201. *Cancer* (1991) Feb 1, Vol: 67 (3), pp. 716–21. Cancer of the head and neck is a common cancer worldwide. The majority of patients present with locally advanced disease. Recently a great deal of improvement has been made in multimodality therapy of this disease, warranting more careful consideration of factors affecting quality of life, disease course, and treatment. Infection is clearly a factor. Analysis of 662 hospital admissions of 169 head and neck cancer patients was performed. A definite infection was documented in 86 febrile episodes, pneumonia contributed to 40 per cent, bacteremia to 13 per cent, skin and soft tissue infection to 12 per cent, and tracheobronchitis to 10 per cent. Among the evaluated risk factors, foreign bodies, specifically intravenous (IV) cannulae and gastrostomy tubes, race, performance status, alcohol intake, and nutritional status were statistically significant variables that predicted for or were associated with infection. Infection contributed to 44 per cent of the deaths. Author.

Relationship between histologic features, DNA flow cytometry, and clinical behavior of squamous cell carcinomas of the larynx. Rua, S., Comino, A., Fruttero, A., Cera, G., Semeria, C., Lanzillotta, L., Boffetta, P. Department of Pathological Anatomy and Histology, City Hospital of Cuneo, Italy. *Cancer* (1991) Jan 1, Vol: 67 (1), pp. 141–9.

Flow cytometric analysis of DNA content was done on 133 primary squamous cell carcinomas of the larynx. Overall, 76 tumors (57.1 per cent) were not diploid (aneuploid or tetraploid). The DNA index (DI) was calculated and grouped into three levels. Fifty-seven cases had a DI in a range of 1.85 to 2.15 (44 diploid and 13 tetraploid). The cases were grouped in relation to ploidy, proliferative index, and the tumor-node-metastasis (TNM) system. Every group was analysed with respect to survival rate. Ploidy was related to histocytologic grade. In well-differentiated tumors (G1) survival rates at 48 months were 41.7 per cent in diploid cases and 27.7 per cent in nondiploid ones (relative risk (RR), 2.01; 95 per cent confidence interval (CI), 0.89, 4.52). In NO cases that underwent surgery, survival rates at 48 months were, respectively, 81.8 per cent and 49.2 per cent (RR, 5.07; 95 per cent CI, 0.76, 33.93). These results suggest that ploidy may be a new independent parameter of prognosis in squamous cell carcinoma of the larynx. This is useful in clinical practice because it allows the clinician to recognize those cases with poorer prognosis among the early tumors at a stage where other prognostic parameters are not yet available. Author.

Radiosurgery of acoustic neurinomas. Flickinger, J. C., Lunsford, L. D., Coffey, R. J., Linskey, M. E., Bissonette, D. J., Maitz, A. H., Kondziolka, D. Department of Radiation Oncology, University of Pittsburgh School of Medicine, Joint Radiation Oncology Center. *Cancer* (1991) Jan 15, Vol: 67 (2), pp. 345–53. Eighty-five patients with acoustic neurinomas underwent stereotactic radiosurgery with the gamma unit at the University of Pittsburgh (Pittsburgh, PA) during its first 30 months of operation. Neuroimaging studies performed in 40 patients with more than 1 year follow-up showed that tumors were smaller in 22 (55 per cent), unchanged in 17 (43 per cent), and larger in one (2 per cent). The 2-year actuarial rates for preservation of useful hearing and any hearing were 46 per cent and 62 per cent, respectively. Previously undetected neuropathies of the trigeminal (n = 12) and facial nerves (n = 14) occurred one week to one year after radiosurgery (median, seven and six months, respectively), and improved at median intervals of 13 and eight months, respectively, after onset. Hearing loss was significantly associated with increasing average tumor diameter (p = 0.04). No deterioration of any cranial nerve function has yet developed in seven patients with average tumor diameters less than 10 mm. Radiosurgery is an important treatment alternative for selective acoustic neurinoma patients. Author.

Plasma cell granuloma of the nasal cavity treated by radiation therapy. Seider, M. J., Cleary, K. R., van Tassel, P., Alexanian, R., Schantz, S. P., Frias, A., Fuller, L. M. Department of Clinical Radiotherapy, University of Texas M.D., Anderson Cancer Center, Houston 77030. *Cancer* (1991) Feb 15, Vol: 67 (4), pp. 929–32. Plasma cell granuloma is a rare, benign tumor most commonly found in the lungs in patients younger than 30 years. Although

presentation has been reported at a number of other anatomic sites, this report is the first of plasma cell granuloma of the nasal cavity. The tumor was initially resected, but progression was seen at one-month follow-up. Because further surgery to completely eradicate the tumor would have been extensive and disfiguring, 40-Gy external beam radiation was given in 20 fractions using a three-field wedge technique. Most recent clinical follow-up at 27 months showed local control. Surgery remains the treatment of choice for plasma cell granuloma when the disease can be completely resected. However, irradiation can also be effective in patients with recurrent or inoperable local disease. Author.

Scintigraphic demonstration of a soft tissue cavernous hemangioma with Valsalva maneuver. Veluolu, P., Daniels, D. L., Collier, B. D., Isitman, A. T., Duncavage, J., Patel, N., Thakur, S., Joestgen, T. Medical College of Wisconsin, Division of Nuclear Medicine, Milwaukee 53226. *Clinical Nuclear Medicine* (1990) Dec, Vol: 15 (12), pp. 865-9.

Hemangiomas are congenital vascular tumors frequently referred for Tc-^{99m} RBC imaging. A case of soft tissue cavernous hemangioma located in the right side of the face and neck is presented. The importance of the Valsalva maneuver in outlining this lesion is described, and a brief review of the literature is presented. Author.

Determinants of self-reported disability in older subjects. Gatehouse, S. MRC Institute of Hearing Research, Glasgow, Scotland. *Ear and Hearing* (1990) Oct, Vol: 11 (5 Suppl), pp. 57S-65S.

The effects of hearing threshold levels, age, personality, and IQ on indices of self-reported disability/handicap derived from the Hearing Performance Inventory and the Institute of Hearing Research Hearing Disability Questionnaire have been investigated in a sample of 240 individuals with bilateral, symmetric sensorineural hearing, which was efficiently balanced across hearing threshold level and age. The results show significant effects of age, IQ, and, in particular, personality on many aspects of reported disability/handicap, with different relative contributions for females and males. It is possible to account for between 42 and 50 per cent of the variance in most of the disability/handicap indices. Around 5 per cent is accounted for by age and between 12 and 22 per cent by aspects of personality. These findings suggest that the effects of age, IQ, and personality should be considered and incorporated into any practical application using self-assessment instruments. Author.

Enzymes of transmitter and energy metabolism in rat middle ear and extraocular muscles. Godfrey, D. A., Wiet, G. J., Parli, J. A., Beranek, K. L., Ross, C. D. Department of Otolaryngology, Head and Neck Surgery, Medical College of Ohio, Toledo 43699-0008. *Hearing Research* (1990) Oct, Vol: 48 (3), pp. 187-94.

To further investigate the peculiar characteristics of the middle ear and extraocular muscles, compared to the extensively studied skeletal muscles of the limbs, activities of enzymes of transmitter and energy metabolism are measured in homogenates of these muscles from albino and pigmented rats. These activities were compared to those for a masticatory muscle and for three hindlimb muscles chosen for their preponderance of either slow oxidative, fast glycolytic, or fast oxidative glycolytic fibers. Activities of the neuromuscular transmitter enzymes choline acetyltransferase and acetylcholinesterase were relatively very high in the extraocular, and middle ear muscles. The activity of malate dehydrogenase, an enzyme of oxidative energy metabolism, was as high in the extraocular, masticatory and stapedius muscles as in the oxidative hindlimb muscles, but was lower in tensor tympani. The activity of lactate dehydrogenase, an enzyme of glycolytic energy metabolism, was remarkably low in both middle ear muscles. The results are consistent with high innervation density in the extraocular and middle ear muscles, and highly oxidative metabolism in the extraocular and stapedius muscles. Metabolic differences between the stapedius and tensor tympani suggest a relatively more active role for the former in the function of the rat middle ear. Author.

Hypersensitivity of hydroptic ears, at frequencies with normal thresholds, to temporary threshold shifts. Horner, K. C. Inserm U229, Laboratoire d'Audiologie Experimentale, Hopital Pellegrin, Bordeaux, France. *Hearing Research* (1990) Oct, Vol: 48 (3), pp. 281-6.

We have shown that experimentally-induced hydroptic ears in the guinea pig systematically provokes an early low frequency (6.4 kHz and below) fluctuant hearing loss. The present study was aimed at investigating one aspect of the functioning of that part of the audiogram with normal CAP thresholds (mid and high frequencies) in early hydroptic ears. Temporary threshold shifts (TTS) as a function of pure tone stimulation level (8 kHz, 1 min 75-95 dB SPL), were investigated. The TTS was measured as a function of pure-tone exposure level. The different points on the input/output curve were determined on sequential days in order to allow full recuperation from the previous stimulation. The group of hydroptic ears (n = 5) proved to be more sensitive by about 6 dB than the group of control ears (n = 10). The data indicate that whilst short-term endolymphatic hydroptic ears can be characterized by a selective low frequency loss other auditory deficits exist throughout the cochlea and become manifest at supraliminal stimulus levels. Author.

Binaural interaction in a cochlear implant patient. Pelizzone, M., Kasper, A., Montandon, P. Department of Otolaryngology, Cantonal University Hospital, Geneva, Switzerland. *Hearing Research* (1990) Oct, Vol: 48 (3), pp. 287-90.

Binaural interaction was demonstrated in electrically evoked brainstem responses (EBRs) of a bilaterally implanted patient. A clear binaural difference waveform (BD), consisting of a negative peak near 3.6 ms followed by a positive peak near 4.4 ms, was found by subtracting the recordings with diotic stimulation from the sum of the recordings with monotic stimulation. These results are consistent with those reported for normal subjects and suggest that neural processing in this patient might resemble those ordinarily used in binaural hearing. They strengthen the argument that EBRs in cochlear implant patients do result from activity in auditory brainstem neurons and suggest a method for aligning the positions of the intracochlear electrodes. Author.

Modification of the fluorescent allergosorbent test as an inhibition assay for determination of cross-reactivity among aeroallergens. Perrick, D., Stafford, C. T., Armstrong, E., DuRant, R. H. Allergy/Immunology Section, Medical College of Georgia, Augusta 30912-3790. *Journal of Allergy and Clinical Immunology* (1991) Jan, Vol: 87 (1 Pt 1), pp. 98-103.

The fluorescent allergosorbent test was adapted as an inhibition assay to determine cross-reactivity between aeroallergens. With this method, similar antigenic determinants were found between short ragweed and giant ragweed, cocklebur, lamb's-quarter, rough pigweed, marsh elder, and goldenrod. Cocklebur and giant ragweed were highly potent in their ability to competitively bind to short ragweed IgE. The other pollens demonstrated lower potency of cross-reacting antigens. The fluorescent allergosorbent test-inhibition assay appears to be a useful method to determine cross-reactivity among aeroallergens. Author.

Reviewing the unicystic ameloblastoma: report of two cases. Haug, R. H., Hauer, C. A., Smith, B., Indresano, A. T. Division of Oral and Maxillofacial Surgery, Cleveland Metrohealth Medical Center 44109. *Journal of American Dental Association* (1990) Dec, Vol. 121 (6), pp. 703-5.

Classification of ameloblastoma into solid, multicystic, unicystic, and peripheral types based on clinical appearance and effects has gained recent recognition. The unicystic ameloblastoma is a less encountered variant of the ameloblastoma. It appears more frequently in the second or third decade with no sexual or racial predilection. It is almost exclusively encountered asymptotically in the posterior mandible. The following report of two cases discusses the pathophysiology, demographics, histology, and prognosis of the unicystic ameloblastoma. Author.

Ten-year results of operations for rheumatoid cervical spine disorders. Santavirta, S., Kontinen, Y. T., Laasonen, E., Honkanen, V., Antti Poika, I., Kauppi, M. University Central Hospital, Helsinki, Finland. *Journal of Bone and Joint Surgery (Br)* (1991) Jan, Vol: 73 (1), pp. 116-20.

The outcome of operations performed on 38 patients for rheumatoid disorders of the cervical spine were analyzed 10 or more years later. The mean age of the patients at the time of operation was 56 years (35 to 77); 32 had seropositive disease. The mean

duration of the disease was 17 years (four to 36). Twenty-seven patients had painful anterior atlanto-axial subluxation (AAS), nine had subaxial subluxation alone and two had severe cranial subluxation of the odontoid, one also with subaxial subluxation. One patient died from postoperative staphylococcal septicaemia and another 18 died during the follow-up period. Patients with coincident cardiac or other diseases, and those with cranial subluxation of the odontoid of more than 3 mm had an increased mortality. Neither the patients' age nor the magnitude of AAS correlated with mortality. Of the 37 patients with occipitocervical pain, 30 were relieved and all the six patients with tetraparesis were improved. Of the 24 Gallie fusions only 12 were solidly united; patients with long-term cortisone treatment were more likely to develop pseudarthrosis. There was no correlation between clinical outcome and radiological result. Four patients had further operations to treat subluxation which developed below the fused segments. Author.

Noise-induced hearing loss in orthopaedic staff. Willett, K. M. Charing Cross Hospital, London, England. *Journal of Bone and Joint Surgery (Br)* (1991) Jan, Vol: 73 (1), pp. 113-5.

In the light of EEC proposals on the avoidance of damage to hearing caused by noise, a study was undertaken to determine the risk posed by powered orthopaedic instruments. The noise levels from a number of air-powered and electric tools were measured and analyzed and found to exceed the recommended levels. The predicted daily personal noise exposure was calculated and the potential for hearing damage confirmed. Twenty-seven senior orthopaedic staff were then assessed by audiometry; evidence of noise-induced hearing loss was found in half the subjects. The increasing use of powered instruments in elective orthopaedics and fracture fixation may present a significant cumulative risk to the hearing of orthopaedic surgeons and theatre personnel. The use of ear defenders should be promoted, and manufacturers should be encouraged to develop instruments with lower noise emission levels. Author.

Comparative in situ hybridization study of juvenile laryngeal papillomatosis in Papua New Guinea and Australia. Wright, R. G., Murthy, D. P., Gupta, A. C., Cox, N., Cooke, R. A. Royal Women's Hospital, Brisbane, Australia. *Journal of Clinical Pathology* (1990) Dec, Vol: 43 (12), pp. 1023-5.

A comparative study of cases of juvenile laryngeal papillomatosis from Papua New Guinea (n = 3) and Brisbane, Australia (n = 9) was carried out. In situ hybridization reactions for human papillomavirus (HPV) types 6 and 11 occurred in 11 cases. All three cases from Papua New Guinea and eight from Australia gave positive signals. A negative reaction was observed in one Australian case. The intensity of the reaction was strong in seven cases, moderate in one, and weak in three. An equivocal reaction was also noted with probes for types 16 and 18, and types 31, 33, and 35 in two cases from Australia and one from Papua New Guinea. It is concluded that as similar staining patterns and intensities occurred in cases from both areas, the aetiology is the same. The equivocal reactions noted in three cases were probably due to cross hybridization rather than multiple infection. Author.

Familial congenital laryngeal abductor paralysis: different expression in a family with one male and three females affected. Schinzel, A., Hof, E., Dangel, P., Robinson, W. Institut für Medizinische Genetik, Universität Zürich, Switzerland. *Journal of Medical Genetics* (1990) Nov, Vol: 27 (11), pp. 715-6.

A brother and two sisters of remotely consanguineous parents had congenital laryngeal abductor paralysis and moderate mental retardation. In the two older sibs, mental deficiency could have resulted from birth asphyxia, but the youngest girl was already microcephalic at birth and had no apparent asphyxia. The mother, who was healthy and of normal intelligence, was found on laryngoscopy to have unilateral laryngeal abductor paralysis. This is the first family with both mentally retarded and non-retarded affected members with congenital laryngeal abductor paralysis. Inheritance is most likely autosomal dominant with variable expression, but autosomal recessive inheritance, with both parents carriers and the mother an affected homozygote, and X linked inheritance are also possible. Author.

Status of cochlear implantation in children. American Academy of

Otolaryngology-Head and Neck Surgery Sub-committee on Cochlear implants. Kveton, J., Balkany, T. J. Yale University School of Medicine, Section of Otolaryngology, New Haven, CT 06510. *Journal of Pediatrics* (1991) Jan, Vol: 118 (1), pp 1-7.

The cochlear implant is a medical device, part of which is placed surgically, that uses electrical stimulation to provide hearing. For almost a decade, investigational studies have been ongoing to define its safety and efficacy in profoundly deaf children. During this period, more than 500 children aged 2 through 17 years have been implanted with either a single-electrode or multielectrode device. Extensive auditory, speech, educational, and psychologic testing has been performed before and after implantation. Results show that the cochlear implant provides auditory detection over much of the speech signal. Compared with the pre-implant period, there is significant improvement in auditory discrimination and speech production skills. Limited open-set word and sentence recognition is possible for at least some children. Complications with the device have been minimal. The cochlear implant can provide sound to deaf children unable to benefit from hearing aids. The complex assessment, rehabilitation, and parent counselling should be performed by centers with the multidisciplinary staffs necessary to provide effective care for patients with this specialized auditory prosthesis. Author.

Correlation between antibodies to type II collagen and treatment outcome in bilateral progressive sensorineural hearing loss. Hefgott, S. M., Moscicki, R. A., San-Martin, J., Lorenzo, C., Kieval, R., McKenna, M., Nadol, J., Trentham, D. E. Department of Medicine, Beth Israel Hospital, Boston, Massachusetts 02215. *Lancet* (1991) Feb 16, Vol: 337 (8738), pp. 387-9.

Our aim was to assess whether 'idiopathic' bilateral progressive sensorineural hearing loss (BPSHL) has an immunological cause in some patients; antibodies to native type II collagen were sought by an ELISA in eighteen patients with BPSHL, before and after corticosteroid treatment, and in 12 patients with Meniere's disease, 15 with otosclerosis, 18 with rheumatoid arthritis, nine with fibrositis, and nine healthy controls. A positive result was defined as a mean dilution titre of two or more. Eight of 18 BPSHL patients had positive titres—significantly (p less than 0.005) more than in any other group (one Meniere's disease, two otosclerosis, and no others). The mean antibody titre was higher in the BPSHL group than in any other group (2.02 (SEM) 0.62 vs 0.17 (0.17)) Meniere's disease, 0.44 (0.32) otosclerosis, 0 all others; p less than 0.005). The nine BPSHL patients who showed a clinical response to corticosteroids (improvement in at least one tone by audiogram or 25 dB in speech discrimination score) had the highest mean antibody titre (3.46 (0.88) vs 0.59 (0.59) for the nine non-responsive patients; p less than 0.04). We suggest that in some patients with BPSHL, immunity to type II collagen, a major constituent of the inner ear, may be important in the pathogenesis of the disorder. Author.

Delayed hearing loss after neurovascular decompression. McDonnell, D. E., Jabbari, B., Spinella, G., Mueller, H. G., Klara, P. M. Section of Neurosurgery, Medical College of Georgia, Augusta. *Neurosurgery* (1990) Dec, Vol: 27 (6), pp. 997-1003.

We report two unusual cases of delayed hearing loss after neurovascular decompression of structures within the cerebellopontine angle. In the first case, the patient noted a unilateral hearing loss three weeks after undergoing vascular decompression of the trigeminal nerve for tic douloureux. This gradually improved over an 18-month period. In the second case, the patient awoke on the 4th day after vascular decompression of the facial nerve for hemifacial spasm with a bilateral hearing loss that has remained unchanged after the onset. These are examples of delayed acoustic dysfunction occurring with a shift in surgically freed vessels and may have been induced by newly directed neurovascular compression or distortion. Author.

Acoustic reflectometry for assessment of hearing loss in children with middle ear effusion. Teele, D. W., Stewart, I. A., Teele, J. H., Smith, D. K., Tregonning, S. J. Department of Paediatrics and Child Health, Otago Medical School, University of Otago, Dunedin, New Zealand. *Pediatric Infectious and Diseases Journal* (1990) Dec, Vol: 9 (12), pp. 870-2.

We sought associations between acoustic reflectometry and hear-

ing loss in ears with and without middle ear effusion in 137 New Zealand children ages 3 to 16 years. Reflectometry was significantly associated with conductive hearing loss. These associations were present in the entire sample; correlation coefficients varied between 0.31 to 2000 Hz (p less than 0.001) and 0.55 for a three frequency pure tone average (p less than 0.001). The associations persisted for the sample of ears deemed to be filled entirely by effusion; correlation coefficients varied between 0.27 at 4000 Hz (p = 0.026) and 0.47 at 500 Hz (p less than 0.001). Using a reflectivity of 6.0 or greater to detect a three frequency pure tone average loss of 30 dB or more, the sensitivity was 88 per cent and the specificity was 44 per cent. The technique of acoustic reflectometry should be explored and extended to permit rational decisions about management of middle ear effusions. Author.

Use of gadolinium-enhanced MR imaging for differentiating mucocoeles from neoplasms in the paranasal sinuses. Lanzieri, C. F., Shah, M., Krauss, D., Lavertu, P. Department of Radiology, Case Western Reserve University, University Hospital of Cleveland, OH 44106. *Radiology* (1991) Feb, Vol: 178(2), pp. 425–8.

The purpose of this study was to determine whether additional clinically useful information could be obtained from gadolinium-enhanced magnetic resonance (MR) imaging compared with the information obtained from nonenhanced MR imaging and computed tomography (CT). Therefore, the authors selected 41 patients, whose results at CT examinations demonstrated a variety of pathologic conditions of the paranasal sinuses, to undergo MR imaging both with and without the use of gadopentetate dimeglumine for contrast enhancement. In 22 of 35 cases of neoplasms and mucocoeles occurring separately, the lesions were correctly differentiated by established MR signal criteria alone. However, 32 of these 35 cases were accurately differentiated when gadolinium-enhanced MR images were obtained. Six cases demonstrated co-existing neoplasm and mucocoele: Gadolinium-enhanced MR enabled correct differentiation of five of these lesions, while unenhanced MR enabled correct differentiation of three. On the basis of these results, the authors conclude that the use of gadopentetate dimeglumine for contrast enhancement at MR imaging is useful for differentiating mucocoeles from neoplasms in the sinonasal tract. Author.

Bacterial colonization of the upper respiratory tract and its association with acute lower respiratory tract infections in Highland children of Papua New Guinea. Montgomery, J. M., Lehmann, D., Smith, T., Michael, A., Joseph, B., Lupiwa, T., Coakley, C., Spooner, V., Best, B., Riley, I. D., *et al.* Papua New Guinea Institute of Medical Research, Goroka. *Review of Infectious Diseases* (1990) Nov–Dec, Vol: 12 Suppl 8, pp. S1006–16.

Acute lower respiratory tract infection (ALRI) is the major cause of death among children in Papua New Guinea. This longitudinal study reports the bacteriologic findings for children observed in their hamlets. A total of 1,449 nasal swab specimens from 158 children less than 5 years of age who were studied intensively for 18 months were examined. Non-serotypable strains of *Haemophilus influenzae* were isolated from 91 per cent of specimens, and serotypable strains were isolated from 35 per cent (8 per cent *H. influenzae* type b) of specimens. All children had acquired *Streptococcus pneumoniae* by the age of 3 months. The most frequently occurring serotypes of *S. pneumoniae* were six, 19 and 23. Children more frequently carried invasive pneumococci during an episode of ALRI than when they were healthy. Also, children more frequently carried serotypable strains of *H. influenzae* during the two weeks preceding an episode of ALRI than when they were healthy. Between-children analyses showed that children who were susceptible to attacks of ALRI and those who were not susceptible had similar rates of a carriage of bacteria. Author.

Rheumatoid arthritis of the larynx: the importance of early diagnosis and corticosteroid therapy. Dockery, K. M., Sismanis, A., Abedi, E. Department of Otolaryngology-Head and Neck Surgery, Medical College of Virginia, Virginia Commonwealth University, Richmond 23298. *Southern Medical Journal* (1991) Jan, Vol: 84 (1), pp. 95–6.

Rheumatoid arthritis is a destructive systemic disorder characterized by remissions and exacerbations. The larynx is involved in approximately 25 per cent of these patients. The importance of

early detection of laryngeal involvement by this disease and treatment with corticosteroids has not been adequately addressed in the literature. We have described five patients who had early diagnosis and successful treatment with systemic corticosteroids and/or corticosteroid injection of the cricoarytenoid joint. Author.

Literacy and laryngectomy: how should one treat head and neck cancer in patients who cannot read or write? Anscher, M. S., Gold, D. T. Division of Radiation Oncology, Duke University Medical Center, Durham, NC 27710. *Southern Medical Journal* (1991) Feb, Vol: 84 (2), pp. 209–13.

The entire population of otolaryngologists and radiation oncologists (n = 192) in active practice in the state of North Carolina were surveyed to assess their level of awareness of illiteracy among adults in the United States and to determine whether these physicians consider illiteracy in the treatment decision process for patients with head and neck cancer. Excluding respondents who did not treat patients with head and neck cancer and physicians practicing outside of the state of North Carolina, the response rate was 115 of 182, or 63 per cent. Only 26 per cent of respondents were able to estimate correctly the prevalence of illiteracy in the US adult population. Forty-one per cent of respondents, however, stated that they did consider their patient's ability to read and/or write before making treatment recommendations for head and neck cancer. This survey and accompanying literature review suggest that physicians perceive illiteracy as a problem that may have a significant impact on patients with head and neck cancer, but lack the data needed to enable them to quantify the effect of illiteracy on treatment outcome. The study reported is the first step in examining ways in which illiteracy might negatively affect patient outcomes. Author.

Clinical value of magnetic resonance imaging for cervical myelopathy. Nagata, K., Kiyonaga, K., Ohashi, T., Sagara, M., Miyazaki, S., Inoue, A. Department of Orthopaedic Surgery, Kurume University, School of Medicine, Japan. *Spine* (1990) Nov, Vol: 15 (11), pp. 1088–96.

The magnetic resonance imaging (MRI) findings in 115 cases of cervical myelopathy, 121 cases of cervical radiculopathy, and 64 cases of neck pain with no neurologic deficit were prospectively studied to investigate the clinical value of MRI for cervical myelopathy. The MRI findings in the T1-weighted sagittal projection were classified into four groups according to the degree of the compressed deformities of the cervical cord. The degree of compression of the cervical cord on MRI findings showed a significant correlation with the severity of myelopathy, the anteroposterior diameter of the spinal column, and the degree of compression of the dural tube in the myelograms (p less than 0.01). Fifty-one patients of cervical myelopathy had undergone both preoperative and postoperative MRI. Of these, the spinal canal of 47 patients that was well decompressed was recognized according to plain computed tomography (CT). However, 24 (51 per cent) of these 47 patients showed on MRI a deformity in the spinal cord amounting to cord atrophy. The correlation between the clinical function of the spinal cord and the recovery of the cord deformity on MRI at the operative levels was accurately investigated in 34 patients who had no cord deformities in the adjacent intervertebral levels. Twenty patients with cord atrophy had slightly poor clinical results, although no significant difference was found between these 20 and 14 patients with recovery in the cord deformities. From these results, it was evident that T1-weighted MRI is useful in the accurate diagnosis of compression myelopathy, in accurately deciding the level of the disease focus, and in the accurate assessment of the surgical results. Author.

Coexistence of cervical and lumbar disc disease. Jacobs, B., Ghelman, B., Marchisello, P. Hospital for Special Surgery, Cornell University Medical College, New York, New York. *Spine* (1990) Dec, Vol: 15 (12), pp. 1261–4.

A retrospective analysis of 200 patients requiring cervical disc surgery was performed to determine the frequency of coexistent lumbar disc or spine abnormalities. The duration of follow-up ranged from five to 25 years, averaging 14 years. Sixty per cent were women and 40 per cent were men, their ages ranging from 25–73 years. Antecedent motor vehicle injury had occurred in 49 cases and work injury to the spine in 23. Sixty four per cent had no history

of prior back injury. It was found that over 31 per cent had undergone lumbar disc surgery, and a high number of patients demonstrated abnormal lumbar radiographs or myelograms, including 78 with bulging discs, 100 with major root defects, 78 with minor root defects, eight with spinal stenosis, and seven with spondylolisthesis. Myelograms were normal in 22 cases. The sites of lumbar abnormalities included L4-5 (110), L5-S1 (90), and multilevel

(eight). There was a higher incidence of lumbar disc abnormalities associated with multilevel cervical spondylosis. There also was a relationship between residual symptoms and myelographic abnormalities. Two studies in the authors' institution suggest an autoimmune basis for the frequent coexistence of cervical and lumbar disc disease, namely the demonstration of antigenic properties in the nucleus pulposus and high serum immunoglobulins. Author.