

Abstract Selection

Are complex partial seizures a sequela of temporal lobe dysgenesis? Scheibel, A. B. Department of Anatomy, UCLA Center for the Health Sciences 90024. *Advances in Neurology* (1991) Vol. 55, pp. 59-77.

1. Complex partial seizures are closely associated with a group of discrete neuropathological entities which include focal lesions (such as hamartomas and heterotopias) and small vascular lesions, all of which are generally considered to have been present at birth. 2. The pathological change most frequently found in patients with temporal lobe epilepsy is mesiotemporal sclerosis. Although this pathological alteration in subicular and hippocampal structures has been attributed to any one of a number of perinatal or postnatal insults, we suggest that it also may represent a sequela of disturbed neuroembryogenesis. 3. We suggest that many, perhaps most, cases of temporal lobe epilepsy may resemble other major disorders of cognition and behaviour (such as schizophrenia) in representing the sequelae of temporal lobe dysgenesis. Author.

Extraction, orthodontic treatment, and craniomandibular dysfunction. Dibbets, J. M., van der Weele, L. T. Department of Orthodontics, School of Dentistry, University of Groningen, The Netherlands. *American Journal of Orthodontics and Dento-Facial Orthopedics* (1991) Mar. Vol. 99 (3), pp. 210-19.

Signs and symptoms attributed to craniomandibular dysfunction (CMD) were registered in the Groningen longitudinal prospective study over a 15-year period. It is concluded that none of the three treatment types—removable appliances, Begg mechanics, and chin cups—should be considered causal factors for the signs and symptoms registered many years later. Furthermore, a comparison was made among nonextraction, extraction of all first premolars, and extraction of other teeth with regard to CMD and it was concluded that the original growth pattern that caused the teeth to be selected for extraction—rather than the extraction itself—is the most likely factor responsible for the frequency of CMD reported years later. This conclusion agrees with one based on a previously postulated idea about the relationship between dysfunction symptoms and growth patterns. Author.

Histologic classification of sinonasal intestinal-type adenocarcinoma. Franquemont, D. W., Fechner, R. E., Mills, S. E. Department of Pathology, University of Virginia Health Sciences Center, Charlottesville 22908. *American Journal of Surgical Pathology* (1991) Apr. Vol. 15 (4), pp. 368-75.

Kleinsasser and Schroeder recently described a histologic classification system for woodworker-associated, intestinal-type adenocarcinomas of the sinonasal region. To determine if their approach is easily applied and prognostically meaningful for both woodworker-associated and sporadic intestinal-type adenocarcinomas in the sinonasal region, we analyzed 15 such cases. The 12 men and three women ranged in age from 37 to 75 years. Only four were woodworkers. All tumors arose in the nasal cavity or paranasal sinuses. The three authors independently classified the tumors with unanimous agreement in 11 (73 per cent) of 15 cases. Disagreements were resolved by group review and consensus. Ten tumors were papillary tubular cylinder cell type; these were subdivided into grades I (four cases) and II (six cases) on the basis of cytologic atypia. Three tumors were alveolar goblet cell type; one tumor was signet-ring type; and one had a mixed pattern. Median survivals were papillary tubular I, nine years; papillary tubular II, three years; and alveolar goblet-cell, seven years. It is concluded that this classification system is easy to apply, reproducible, and appears to identify a group of sinonasal intestinal-type adenocarcinomas (papillary tubular I) with a prolonged survival. Author.

Can nurses perform surgical cricothyrotomy with acceptable success and complication rates? Nugent, W. L., Rhee, K. J., Wisner, D. H. Department of Nursing Administration, University of Cal-

ifornia, Davis Medical Center, Sacramento 95817. *Annals of Emergency Medicine* (1991) Apr. Vol. 20 (4), pp. 367-70.

STUDY OBJECTIVE: This study was undertaken to determine whether flight nurses can perform surgical cricothyrotomies with acceptable success and complication rates. **METHODS:** This case series examined the survival, success, and complication rates of surgical cricothyrotomy. A specially trained flight nurse retrospectively reviewed all prehospital, emergency department, inpatient, autopsy, and outpatient follow-up records. **RESULTS:** Fifty-five consecutive patients in whom surgical cricothyrotomy was attempted by a flight nurse during a two-and-one-half-year period were studied. Patients ranged in age from nine to 76 years. The airway was not cannulated successfully by a flight nurse in two patients. In two patients, the tube was not in the cricothyroid space (one in the upper tracheal rings, and the other in the larynx). In three patients, packing was insufficient to stop bleeding from around the operative site; and in three the tube became occluded by blood in the emergency department. Finally, two patients developed subglottic stenosis. **CONCLUSION:** Surgical cricothyrotomy in the field can be performed reliably by specially trained nurses. Because only the most critically ill or injured patients with unmanageable airways are subjected to this procedure, a significant complication rate can be anticipated. Author.

Locomotion and motion sickness during horizontally and vertically reversed vision. Takahashi, M., Saito, A., Okada, Y., Takei, Y., Tomizawa, I., Uyama, K., Kanzaki, J. Department of Otolaryngology, Keio University School of Medicine, Tokyo, Japan. *Aviation, Space and Environmental Medicine* (1991) Feb. Vol. 62 (2), pp. 136-40.

Locomotion and motion sickness during reversed vision were studied in ten normal subjects and a patient with bilateral labyrinthine loss. Whereas horizontal reversal produced moderate to severe gait disturbances as well as motion sickness in all normal subjects, vertical reversal failed to induce such symptoms. The patient, being free of motion sickness during both reversals, could not walk straight during horizontal reversal. The difference in the strength of sensory mismatch between both directions seemed to result from a difference in the role of vision for spatial orientation which is produced by the proprioceptive as well as otolithic inputs of gravity. Author.

Dose reduction without loss of efficacy for 5-fluorouracil and cisplatin combined with folic acid. In vitro study on human head and neck carcinoma cell lines. Etienne, M. C., Bernard, S., Fischel, J. L., Formento, P., Gioanni, J., Santini, J., Demard, F., Schneider, M., Milano, G. Centre Antoine-Lacassagne, Nice, France. *British Journal of Cancer* (1991) Mar. Vol. 63 (3), pp. 372-7.

Folic acid (FA) and cisplatin (CDDP) both potentiate the cytotoxicity of 5-fluorouracil (5-FU). The activity of various drug combinations including 5-FU, CDDP and FA was tested on two human cell lines derived from squamous cell carcinomas of the head and neck. Cytotoxicity was assessed by the semi-automated colorimetric MTT test. The drugs were tested in clinically achievable conditions (concentrations and duration of exposure). The dose response curves for 5-FU (0-100 ng ml⁻¹) associated with FA (10(-7)-10(-5) M) reflected a progressive increase in 5-FU cytotoxicity with increasing FA concentrations. When CDDP (0-5 micrograms ml⁻¹) was associated with 5-FU, CDDP-mediated enhancement of 5-FU cytotoxicity was apparent only when CDDP was given before 5-FU. The triple association CDDP, 5-FU and FA was also tested. In this case, for an identical final cytotoxicity, the presence of FA (10(-6) M) permitted reduction of the 5-FU concentration between 24.2 and 42 per cent and reduction of the CDDP concentration between 13.8 and 72.7 per cent. These observations may be beneficial for the design of more rational therapeutic trials associating CDDP, 5-FU and FA. Author.

The lateral periodontal cyst. A histopathological and radiographic study of 32 cases. Rasmusson, L. G., Magnusson, B. C., Borrmann, H. Department of Oral Pathology, Faculty of Odontology, Gothenburg University, Sweden. *British Journal of Oral and Maxillofacial Surgery* (1991) Feb, Vol. 29 (1), pp. 54–7.

The lateral periodontal cyst is a developmental odontogenic cyst usually found in the premolar area of the lower jaw. The clinical, radiographic and histopathological features of 32 previously unreported lateral periodontal cysts were reviewed. In four cases the follow-up, which extended over several years, was also studied. Different theories of pathogenesis are discussed. Author.

Primary angiosarcoma of the oral cavity. Oliver, A. J., Gibbons, S. D., Radden, B. G., Busmanis, I., Cook, R. M. Oral Medicine and Oral Surgery, School of Dental Science, University of Melbourne, Australia. *British Journal of Oral and Maxillofacial Surgery* (1991) Feb, Vol. 29 (1), pp. 38–41.

Primary malignant vascular tumours of the oropharynx are rare. This report is of a 69-year-old Vietnamese female with a malignant vascular lesion involving the floor of the mouth and the pharynx. Author.

Hypercalcaemia and the synthesis of interleukin-1 by an ameloblastoma. Macpherson, D. W., Hopper, C., Meghji, S. Joint Department of Maxillofacial Surgery and Oral Medicine, Eastman Dental Hospital, London. *British Journal of Oral and Maxillofacial Surgery* (1991) Feb, Vol. 29 (1), pp. 29–33.

A case of hypercalcaemia secondary to a long-standing solitary ameloblastoma is presented with evidence to suggest that the raised plasma calcium was the result of the secretion of interleukin-1 and a parathyroid hormone-like substances by the tumour. The aetiology of humoral hypercalcaemia of malignancy is discussed in relation to the role played by these substances. Author.

Auditory canal haemorrhage following mandibular condylar fracture. Loh, F. C., Tan, K. B., Tan, K. K. Department of Oral and Maxillofacial Surgery, National University Hospital, Singapore. *British Journal of Oral and Maxillofacial Surgery* (1991) Feb, Vol. 29 (1), pp. 12–13.

A case of haemorrhage from the external auditory meatus associated with condylar fracture is presented. It is important that haemorrhage from the ear following maxillofacial injuries be investigated thoroughly because displacement of the condyle into the middle cranial fossa also presents in this manner. The patient was treated by intermaxillary fixation and packing of the auditory canal. Packing is not only effective for haemostasis but is also important in preventing subsequent stenosis of the auditory canal. Author.

Comparative investigation of c-erbB2/neu expression in head and neck tumors and mammary cancer. Riviere, A., Becker, J., Loning, T. Institute of Pathology, University of Hamburg, West Germany. *Cancer* (1991) Apr, Vol. 67 (8), pp. 2142–9.

Normal tissues, primary tumors, and metastases of mammary and salivary glands and oral/laryngeal mucosa have been analyzed with Northern-blots employing 32P-labeled mRNA probes for the expression of the neu oncogene. Neu oncogene expression of a RNA species of 4.6 kilobases was found in all normal salivary (five) and mammary glands (four) as well as in two normal or inflamed samples of tongue mucosa. This expression was regarded as baseline activity of the neu gene for the respective tissues and was used as standard for the evaluation of benign and malignant tumors. None of 14 squamous cell carcinomas of the oral and laryngeal mucosa showed enhanced neu transcription level. Five fibroadenomas, one benign variant of phylloid tumor, one carcinosarcoma, and one of two proliferative fibrocystic diseases of the breast showed lacking or normal baseline expression of the neu oncogene, as did one monomorphous cystadenolymphoma of the parotid gland. In contrast, four parotid pleomorphic adenomas and one salivary gland adenocarcinoma showed enhanced neu expression. For mammary adenocarcinomas, increased neu oncogene expression concerned ten of 34 cases—all being variants of ductal carcinomas—and all metastases analyzed (six) deriving from three primaries. One adenoid cystic carcinoma also showed enhanced neu expression. Neu overexpression may reflect accidents of genomic reconstitutive events occurring regularly within the differentiation pathway of epithelial/myoepithelial cells. This

assumption was supported by further immunohistochemical analysis which showed stainings of myoepithelial and myoepithelia-like cell populations in tumors, especially pleomorphic adenomas and adjacent normal-looking tissues. Author.

Soluble interleukin-2 receptors in patients with nasopharyngeal carcinoma. Lai, K. N., Ho, S., Leung, J. C., Tsao, S. Y. Department of Medicine, Prince of Wales Hospital, Chinese University of Hong Kong, Shatin. *Cancer* (1991) Apr 15, Vol. 67 (8), pp. 2180–5.

The authors performed a retrospective analysis of serum soluble interleukin-2 receptor (sIL-2R) levels in 72 patients with nasopharyngeal carcinoma (NPC) using an enzyme immunoassay. Their objectives were to determine the value of serum sIL-2R in estimating the tumor burden, and its predictive value in response to therapy and prognosis. The data showed that serum sIL-2R levels in patients were significantly higher than that of healthy controls. The serum levels correlated with clinical staging and hence the tumor burden of NPC. Serial measurement of serum sIL-2R provided an accurate prognostic index of the clinical response to radiotherapy in at least 89 per cent of patients with raised serum sIL-2R at initial diagnosis (defined as mean + 2 SD of healthy controls) and reliable predictive index in all patients who subsequently developed distant metastasis despite initial radiotherapy. Simultaneous measurement of Epstein-Barr virus-related serology (IgA-VCA and IgG-EA) failed to demonstrate predictive value comparable with that of serum sIL-2R. The authors conclude that monitoring serum sIL-2R levels has clinical and prognostic significance in patients with NPC and that prospective studies are indicated. Author.

The relationship of nasopharyngeal carcinomas and second independent malignancies based on the Radiation Therapy Oncology Group experience. Cooper, J. S., Scott, C., Marcial, V., Griffin, T., Fazekas, J., Laramore, G., Hoffman, A. Radiation Therapy Oncology Group, Philadelphia, Pennsylvania. *Cancer* (1991) Mar 15, Vol. 67 (6), pp. 1673–7.

The authors sought to learn if the incidence of second independent malignancies after the irradiation of carcinomas of the nasopharynx is similar to that observed after treatment of tumors arising in other head and neck sites. One hundred twenty-one patients who had primary carcinomas of the nasopharynx who were treated solely by ionizing radiation (according to the specifications of a Radiation Therapy Oncology Group protocol) were identified and their subsequent well-being was reviewed. Overall there was a 4.1 per cent incidence of second malignancies (two per cent after three years, five per cent after five years, and eight per cent after eight years) with most arising in the upper aerodigestive tract. This rate is significantly less than the rate associated with other head and neck sites. It is not significantly different from the rate of first malignancies observed in an age-matched and sex-matched population. When only those patients who were free of all evidence of neoplastic disease six months after the completion of radiotherapy are considered, similar analysis leads to similar outcomes. The authors conclude that the risk of second malignancies after the successful irradiation of carcinomas of the nasopharynx is substantially less than after treatment of tumors at other head and neck sites. Author.

Role of bone scanning in detection of subclinical bone metastasis in nasopharyngeal carcinoma. Sham, J. S., Tong, C. M., Choy, D., Yeung, D. W. Department of Radiotherapy, Queen Mary Hospital, Pokfulam, Hong Kong. *Clinical Nuclear Medicine* (1991) Jan, Vol. 16 (1), pp. 27–9.

One hundred thirty-two new patients with nasopharyngeal carcinoma and no evidence of distant metastases were evaluated for bone metastases with bone scanning. Forty-four patients had abnormal hypercaptation. These abnormal findings were considered related to benign diseases in 39 patients after correlating clinical examinations and skeletal radiographs. The remaining five patients had positive bone scanning which was suggestive of bone metastasis. There were 13 patients who developed symptomatic bone metastases over a follow-up period of 0.2–41 months. In three of these, the bone metastases corresponded to the sites of abnormal hypercaptation in the initial positive bone scanning. In view of the low sensitivity and specificity of bone scanning in this setting, routine bone scanning for staging nasopharyngeal carcinoma is not recommended. But in the research setting, baseline scanning is useful to make subsequent scanning more valuable, and it reduces false-positive results. Author.

Psychophysical measures of central auditory dysfunction in multiple sclerosis: neurophysiological and neuroanatomical correlates. Handler, T., Squires, N. K., Emmerich, D. S. Department of Psychology, State University of New York, Stony Brook. *Ear and Hearing* (1990) Dec, Vol. 11 (6), pp. 403–16.

Central auditory function was assessed in 15 patients with multiple sclerosis (MS) to determine whether the demyelinating lesions resulted in disruption of temporal processing. Auditory evoked potential (AEP) recordings included all three latency regions: Auditory brain stem responses (ABRs), midlatency responses (MLRs), and long-latency responses (LLRs). Two psychophysical tasks thought to involve temporal processing were used: a monaural-processing task (gap-detection) and a binaural-processing task (masking level difference; MLD). Further, AEP abnormalities and psychophysical performance deficits were related to lesion location, based on magnetic resonance imaging (MRI) scans. Reduced MLDs were seen in six MS subjects. Abnormal MLDs were always accompanied by abnormal ABRs and MLRs, and compared to subjects with normal MLDs, the subjects with abnormal MLDs were more likely to have bilateral abnormalities in the AEPs. Further, MLR indices of abnormal binaural interaction appeared to be specifically related to the psychophysical measure of binaural processing. The MRI data of these patients indicated widespread involvement of the auditory pathway. MS subjects with abnormal MRI signals restricted to levels caudal to the lateral lemniscus did not have abnormal MLDs. Gap-detection thresholds were more resistant to the effects of the demyelinating lesions; only two subjects had abnormal gap-detection thresholds. These subjects had extensive AEP abnormalities (bilaterally, in all three latency regions). The gap-detection thresholds were most specifically related to abnormalities of the LLRs. In addition, the subjects with elevated gap-detection thresholds were the only ones with a prolonged interval between the ABRs and MLRs. Thus, efficient neural conduction between the upper brain stem and auditory cortex appears to be crucial for normal monaural temporal processing. The results indicate that demyelinating lesions can cause deficits in temporal processing in the central auditory pathway. However, auditory temporal processing is not a unitary phenomenon since abnormalities at different levels of the auditory system disrupt different types of temporal processing. Finally, abnormal psychophysical performance was not seen in all subjects with AEP and MRI evidence of involvement of the auditory pathway; rather, these psychophysical measures appeared to be sensitive to disruption only in specific portions of the auditory system. Author.

The psychometric properties of a tinnitus handicap questionnaire. Kuk, F. K., Tyler, R. S., Russell, D., Jordan, H. Department of Otolaryngology-Head and Neck Surgery, University of Illinois, Chicago. *Ear and Hearing* (1990) Dec, Vol. 11 (6), pp. 434–45.

The psychometric properties of a tinnitus handicap questionnaire are reported. There were two phases in this study. In Phase I, 87 questions were administered to 100 tinnitus patients. From their responses, 59 items that were either redundant, insensitive, or had low item-total correlations were eliminated. In Phase II, the resulting 27-item questionnaire was administered to 319 patients. Fifty-three of these patients also completed psychological and psychophysical measures that were used to validate the questionnaire. A factor analysis of patients' responses revealed a three-factor structure. These three factors appeared to reflect the physical, emotional, and social consequences of tinnitus (Factor 1), hearing ability of the patient (Factor 2), and the patients' view of tinnitus (Factor 3). Although the 27-item questionnaire had high internal consistency reliability and validity as reflected by correlations with life satisfaction and depression scales, it is recommended that only the items on the Factor 1 and the Factor 2 subscales be scored because of the low internal consistency reliability of the Factor 3 subscale. This questionnaire can be used to compare a patient's tinnitus handicap with the norm, identify specific areas of handicaps and to monitor a patient's progress with particular treatment programs. Author.

Comparison of ABR amplitudes with TIPtrode and mastoid electrodes. Bauch, C. D., Olsen, W. O. Mayo Clinic, Department of Otorhinolaryngology, Rochester, Minnesota. *Ear and Hearing* (1990) Dec, Vol. 11 (6), pp. 463–7.

ABR evaluations were completed for 36 adults (18 males, 18 females) having normal hearing sensitivity and for 91 adult patients

having various degrees of sensorineural hearing loss. Amplitudes of waves I and V were compared for ear canal (TIPtrode) electrode and mastoid electrode recordings. Interpeak intervals (I-III, III-V, and I-V) were determined and upper 95 per cent confidence limits defined for normative data. In general, amplitude of wave I was larger when TIPtrodes were used. Wave V amplitude was nearly identical for the two electrodes. Wave I was identified more frequently for TIPtrode than for mastoid recordings of ABR waveforms for the sensorineural hearing loss subjects. Author.

Estimation of surviving spiral ganglion cells in the deaf rat using the electrically evoked auditory brainstem response. Hall, R. D. Department of Otolaryngology, Massachusetts Eye and Ear Infirmary, Boston 02114. *Hearing Research* (1990) Nov, Vol. 49 (1-3), pp. 155–68.

A procedure was developed to record the electrically evoked auditory brainstem response (EABR) in the rat with sufficiently little stimulus artifact to permit systematic measurements of the first positive wave (P1), the compound action potential (CAP) of the auditory nerve. Our principal aim was to verify the theoretical prediction that maximum P1 amplitude is directly proportional to the number of excitable auditory nerve fibers. This was carried out in animals with graded lesions of the spiral ganglion induced by perfusion of the cochlea with different concentrations of neomycin. Two series of observations confirmed the theoretical prediction. Several measures of P1, including maximum amplitude, and slopes of the P1 and P1-N1 growth functions, were highly correlated with the number of surviving spiral ganglion cells. Correlation coefficients (r) ranged from 0.75 to 0.92. Amplitudes of the later waves exhibited much lower correlations with spiral ganglion cell counts. These findings suggest that measurement of the CAP in deaf humans, possibly as wave I of the EABR, should provide quantitative information about the status of the nerve, which could be useful in screening candidates for cochlear implants, prescribing the optimum device for individual patients, and determining how benefits derived from such devices relate to the condition of the auditory nerve. Author.

Evaluation of the efficacy and safety of sobrerol granules in patients suffering from chronic rhinosinusitis. Bellussi, L., Manini, G., Buccella, M. G., Cacchi, R. Ear, Nose and Throat Clinic, University of L'Aquila, Italy. *Journal of International Medical Research* (1990) Nov-Dec, Vol. 18 (6), pp. 454–9.

In a double-blind, randomized, placebo-controlled clinical trial, the safety and efficacy of 900 mg/day sobrerol granules given for up to 10 days was assessed in 40 patients with chronic catarrhal rhinosinusitis. At the beginning of treatment a total of six patients had a fever, whereas body temperature was normal in all patients at the end of the treatment. Treatment with sobrerol significantly (P less than 0.01) reduced frontal headache and rhinorrhoea, efficacy being confirmed by rhinomanometry. Patients treated with placebo experienced an improvement in frontal headache, rhinorrhoea, and overall rhinomanometry scores. Treatment with sobrerol was well tolerated but two patients treated with placebo reported adverse reactions (stomach pain and cutaneous rash). These preliminary data suggest that sobrerol could be useful if administered with an anti-inflammatory drug for the treatment of chronic catarrhal rhinosinusitis. Author.

Head and neck cancer in Saudi Arabia: retrospective analysis of 65 patients. al Idrissi, H. Y. College of Medicine and Medical Sciences, King Faisal University, Dammam, Saudi Arabia. *Journal of International Medical Research* (1990) Nov-Dec, Vol. 18 (6), pp. 515–9.

A total of 65 patients with confirmed squamous cell carcinoma of the head and neck were retrospectively reviewed. The patients' mean age was 48.6 years and 64.6 per cent were males, with 41.5 per cent of patients being smokers and 26.2 per cent users of chewable tobacco, pepper and oil. Nasopharyngeal carcinoma was the most common site (43.1 per cent), with 41.5 per cent of patients having poorly differentiated tumours, and 38.5 per cent were diagnosed as stage III and 13.8 per cent as stage IV. The survival probability was calculated to be 74 per cent at 24 months and the multivariate regression model of Cox showed that advanced stage (stage III or IV) and omission of radiotherapy adversely influenced survival. It is concluded that the data should be used for future comparisons with those accruing from those current prospective trials. Author.

Olfactory sensations produced by high-energy photon irradiation of the olfactory receptor mucosa in humans. Sagar, S. M., Thomas, R. J., Loverock, L. T., Spittle, M. F. Meyerstein Institute of Radiotherapy, Middlesex Hospital, London, U.K. *International Journal of Radiation, Oncology, Biology and Physics* (1991) Apr, Vol. 20 (4), pp. 771–6.

During irradiation of volumes that incorporate the olfactory system, a proportion of patients have complained of a pungent smell. A retrospective study was carried out to determine the prevalence of this side-effect. A questionnaire was sent to 40 patients whose treatment volumes included the olfactory region and also to a control group treated away from this region. The irradiated tumor volumes included the frontal lobe, whole brain, nasopharynx, pituitary fossa, and maxillary antrum. Of the 25 patients who replied, 60 per cent experienced odorous symptoms during irradiation. They described the odour as unpleasant and consistent with ozone. Stimulation of olfactory receptors is considered to be caused by the radiochemical formation of ozone and free radicals in the mucus overlying the olfactory mucosa. Author.

Muscle fibre type and habitual snoring. Smirne, S., Iannaccone, S., Ferini-Strambi, L., Comola, M., Colombo, E., Nemni-R. Sleep Disorders Centre, State University and Scientific Institute, Milan, Italy. *Lancet* (1991) Mar 9, Vol. 337 (8741), pp. 597–9.

Although anatomical abnormalities of the upper airway have been recorded in some patients with obstructive sleep apnoea (OSA), a muscle tone dysregulation also seems to have an important role in this disorder. Since habitual snoring is the initial stage of OSA, the structural characteristics of upper airway muscles (medium pharyngeal constrictor muscle (MPCM)) from 13 men (nine non-snorers and four habitual snorers) were studied. MPCM fibre structure in non-snorers was broadly similar to that in normal limb muscles, with the exception that fibre diameters were smaller for all fibre types. Compared with limb muscles, MPCM had a smaller proportion of type IIb fibres and a higher proportion of types I and IIa fibres. MPCM in habitual snorers had an abnormal distribution of fibre types (low percentage of type I and type IIb fibres and high percentage of type IIa fibres) compared with non-snorers (p less than 0.001) and the type IIa fibres were hypertrophic. No myopathic or neurogenic changes were seen. Two possible hypotheses explain the abnormal distribution of fibre types in snorers. First, a constitutionally determined reduction of slow alpha-motor neurons induces an adaptive transformation of type IIb to type IIa fibres and a hypertrophy of type IIa fibres; or, second, motor neurons change their patterns of discharge and, hence, of activation, and modify fibre-type distribution of MPCM as an adaptation to the anatomical characteristic of upper airway and habitual snoring. Author.

Non-Hodgkin's lymphoma confined to the nasal cavity: its relationship to the polymorphic reticulosis and results of radiation therapy. Itami, J., Itami, M., Mikata, A., Tamaru, J., Kaneko, T., Ogata, H., Uno, K., Arimizu, N. Department of Radiology, Chiba University School of Medicine, Chiba, 280 Japan. *International Journal of Radiation, Oncology, Biology and Physics* (1991) Apr, Vol. 20 (4), pp. 797–802.

From 1975 through 1988, nine patients with locally confined nasal non-Hodgkin's lymphoma (NHL) were treated with radiation therapy in the Department of Radiology, Chiba University Hospital. Immunohistochemical study disclosed that all NHL's have T-lineage. Additionally, unique histological pictures of polymorphism, angiodestruction, and necrosis were seen in most of the cases. These three findings are the histological features of polymorphic reticulosis (PMR), which is the main cause of lethal midline granuloma and has recently been shown to belong to T-cell malignancy. Therefore, it is concluded that the nasal T-cell NHL and PMR are really a single disease entity. The predominance of the T-cell lymphoma in the nasal cavity as well as its histological distinctness clearly indicate that the head and neck extranodal NHL cannot be discussed together. Although the disorder was considered to be locally limited at presentation, only three of the nine patients with nasal NHL could be induced into long-term remission with involved field radiotherapy. The distant extranodal spread was the primary cause of failure. Multimodality treatment using intensive chemotherapy might improve the prognosis of nasal NHL. Author.

Observation of perturbations in a lumped-element model of the vocal folds with application to some pathological cases. Wong, D.,

Ito, M. R., Cox, N. B., Titze, I. R. Department of Electrical Engineering, University of British Columbia, Vancouver, Canada. *Journal of the Acoustical Society of America* (1991) Jan, Vol. 89 (1), pp. 383–94.

In this paper a mass-spring model is developed that is a hybrid of the two-mass and the longitudinal string models, proposed by Ishizaka and Flanagan (*Bell Sys. Tech. J.* 51, 1233–1268 (1972)) and Titze (*Phonetica* 28, 129–170 (1973)), respectively. The model is used to simulate the vibratory motion of both the normal and asymmetric vocal folds. Mouth-output pressure, lateral tissue displacement, phase plots, and energy diagrams are presented to demonstrate the interaction between vocal fold tissue and the aerodynamic flow between the folds. The results of the study suggest that this interaction is necessary for sustained large amplitude oscillation because the flow supplies the energy lost by the tissue damping. Tissue mass and stiffness were varied locally or uniformly. Decreased stress in the longitudinal string tension produced subharmonic and chaotic vibrations in the displacement, velocity and acceleration phase diagrams. Similar vibratory characteristics also appeared in pathological speech data analyzed using time domain jitter and shimmer measures and a harmonics-to-noise ratio metric. The subharmonics create an effect that has been perceptually described as diplophonia. Author.

Reconstruction of the nose with local flaps. Zitelli, J. A., Fazio, M. J. *Journal of Dermatologic Surgery and Oncology* (1991) Feb, Vol. 17 (2), pp. 184–9.

The author presents the results of a study of 200 patients with surgical defects of the nose following excision of skin malignancies. The location, size, depth, and quality of the adjacent skin, the reconstruction choice, and the cosmetic result were recorded. Healing by second intention was most useful for wounds in concave areas. Full-thickness skin grafts were used for defects too large for local flaps, or for defects on the nasal tip or alar surface. Local flaps were the most useful choice for nasal reconstruction. Transposition flaps, in particular, were most useful for each cosmetic sub unit of the nose. Author.

Alar rim reconstruction utilizing a perinasal transposition flap overlying a hinged 'turn-down' flap. Field, L. M. Stanford University Medical Center, Palo Alto, California. *Journal of Dermatologic Surgery and Oncology* (1991) Mar, Vol. 17 (3), pp. 281–4.

Construction of the alar rim is an extremely challenging problem. Utilizing supradefect nasal tissue as a hinged 'turn-down' flap combined with perinasal tissue mobilized as an inferiorly-based transposition flap allowed the formation of a thin and properly contoured rim configuration. Author.

Pseudocyst of the auricle: successful treatment with intracartilaginous trichloroacetic acid and button bolsters. Cohen, P. R., Katz, B. E. Department of Dermatology, College of Physicians and Surgeons of Columbia University, New York, New York. *Journal of Dermatologic Surgery and Oncology* (1991) Mar, Vol. 17 (3), pp. 255–8.

Pseudocyst of the auricle is an asymptomatic, noninflammatory cystic swelling that typically involves the antihelix of the ear and results from an accumulation of fluid within unlined intracartilaginous cavity. We report a patient with a recurrent pseudocyst of the auricle and describe a new surgical technique for treating this condition by applying 50 per cent trichloroacetic acid to the intracartilaginous cavity and utilizing external button bolsters for compressive therapy. This therapeutic approach is simple to perform in the office, results in permanent resolution of the pseudocyst, preserves the normal architecture of the external ear, and provides excellent postoperative and long-term cosmetic results. Author.

Nasopharyngeal teratoma ('hairy polyp'), Dandy-Walker malformation, diaphragmatic hernia, and other anomalies in a female infant. Aughton, D. J., Sloan, C. T., Milad, M. P., Huang, T. E., Michael, C., Harper, C. Department of Pediatrics, William Beaumont Hospital, Royal Oak, Michigan 48073. *Journal of Medical Genetics* (1990) Dec, Vol. 27 (12), pp. 788–90.

Nasopharyngeal teratomas are rare and are infrequently associated with extra-oral malformations. The case of a premature female infant with multiple congenital anomalies, including nasopharyngeal teratoma, Dandy-Walker malformation, diaphragmatic her-

nia, and congenital heart defect, is presented. This constellation of malformations does not appear to have been reported previously. Author.

Cleft lip and palate, sensorineural deafness, and sacral lipoma in two brothers: a possible example of the disorganisation mutant. Lowry, R. B., Yong, S. L. Department of Paediatrics, University of Calgary, Alberta, Canada. *Journal of Medical Genetics* (1991) Feb, Vol. 28 (2), pp. 135–7.

We report two brothers of Chinese origin who have an apparently unique syndrome of cleft lip/palate, profound sensorineural deafness, and a sacral lipoma. Additional findings which were not common to both were aberrant digital appendages on the heel and thigh of one boy and an anterior sacral meningocele and dislocated hip in the other. Intelligence is normal in both. Both boys suffer from functional constipation but biopsy studies showed no evidence of Hirschsprung's disease. The parents, who are normal, are not related. Inheritance is probably autosomal or X linked recessive. A possible link with the disorganisation mouse mutant is discussed. Author.

Genetic aspects of antibiotic induced deafness: mitochondrial inheritance. Hu, D. N., Qui, W. Q., Wu, B. T., Fang, L. Z., Zhou, F., Gu, Y. P., Zhang, Q. H., Yan, J. H., Ding, Y. Q., Wong, H. Department of Genetic Counselling, Tiedao Medical College, Shanghai, China. *Journal of Medical Genetics* (1991) Feb, Vol. 28 (2), pp. 79–83.

Analysis of 36 pedigrees with a positive family history of aminoglycoside antibiotic induced deafness, ascertained in a population of 483,611 in Zhabei District in Shanghai, showed that the susceptibility to antibiotic ototoxicity was transmitted by females exclusively, indicating mitochondrial inheritance. Reanalysis of 18 other published pedigrees confirmed this conclusion. Author.

Language function following anterior temporal lobectomy. Hermann, B. P., Wyler, A. R., Somes, G. EpiCare Centre, Baptist Memorial Hospital, Memphis, Tennessee. *Journal of Neurosurgery* (1991) Apr, Vol. 74 (4), pp. 560–6.

The authors report the results of a prospective investigation that evaluated postoperative changes in language function after dominant (29 cases) or nondominant (35 cases) anterior temporal lobectomy for treatment of complex partial seizures. These patients received conservative resection of lateral temporal cortex but aggressive resection of medial temporal cortex. None of the patients underwent functional mapping of cortical language ability. All patients were assessed with a standardized aphasia battery (Multilingual Aphasia Examination) before and 6 months after surgery. Postoperatively, the dominant anterior temporal lobectomy group did not show any significant losses in language function compared to patients who underwent nondominant anterior temporal lobectomy. In addition, the dominant temporal lobectomy group showed significant postoperative improvement in complex receptive language comprehension compared to the nondominant group. These results suggest that patients with complex partial seizures of medial temporal lobe onset can undergo a conservative resection of lateral temporal cortex without language mapping. Such surgery carries little risk to language function and provides an excellent postoperative surgical outcome. Author.

Diagnosis of nasopharyngeal carcinoma by means of recombinant Epstein-Barr virus proteins. Littler, E., Baylis, S. A., Zeng, Y., Conway, M. J., Mackett, M., Arrand, J. R. Cancer Research Campaign Laboratories, Paterson Institute for Cancer Research, Christie Hospital and Holt Radium Institute, Manchester, UK. *Lancet* (1991) Mar 23, Vol. 337 (8743), pp. 685–9.

The immune response of patients with nasopharyngeal carcinoma to Epstein-Barr virus (EBV) antigens is diagnostic of the tumour. Existing tests use EBV antigens produced in EBV-infected lymphoblastoid cells, but the virus replicates poorly in these cells. Serum samples from 18 patients diagnosed as having nasopharyngeal carcinoma were screened by western blot analysis, enzyme-linked immunosorbent assay (ELISA), and immunofluorescence tests for antibodies to the EBV-coded alkaline deoxyribonuclease (DNase), thymidine kinase, and membrane antigen (gp340/220) produced in recombinant baculovirus or bovine papillomavirus systems. Each protein was a useful diagnostic marker for nasopharyngeal carcinoma, although in the gp340/220 ELISAs

there was substantial overlap for both IgG and IgA antibodies between serum samples from nasopharyngeal carcinoma patients and those from healthy donors seropositive for EBV. The EBV thymidine kinase was the most sensitive predictor of nasopharyngeal carcinoma; all such samples showed both IgG and IgA antibody responses to this protein and all gave clearly distinct titres from those of the EBV-seropositive donors in the IgA test. Each of the recombinant systems described is suitable for use in large-scale screening programmes for the early diagnosis of nasopharyngeal carcinoma. Author.

Reversible hearing loss from cerebellopontine angle tumours. Velutini, E. A., Cruz, O. L., Velasco, O. P., Miniti, A., Almeida, G. M. Department of Neurosurgery, University of Sao Paulo School of Medicine, Brazil. *Neurosurgery* (1991) Feb, Vol. 28 (2), pp. 310–12; discussion 312–13.

We report two patients who presented with a dramatic recovery from severe sensorineural hearing loss after total surgical removal of cerebellopontine angle tumours (meningioma and jugular foramen neurinoma). The factors that differentiate these 'non-acoustic tumours' in relation to the prognosis for hearing are discussed. A surgical approach that maintains the labyrinthine structure and preserves the arachnoid membrane of the superior cerebellopontine angle cistern during tumor removal is stressed. Author.

Adult peripheral neuroepithelioma in Meckel's cave. Midroni, G., Dhanani, A. N., Gray, T., Tucker, W. S., Bilbao, J. M. Department of Neurology, St Michael's Hospital, University of Toronto, Ontario, Canada. *Neurosurgery* (1991) Feb, Vol. 28 (2), pp. 313–16.

A case of peripheral neuroepithelioma arising from the trigeminal nerve in Meckel's cave is presented. The discussion emphasizes the pathological criteria for the diagnosis of a peripheral neuroepithelioma and the current controversy about the classification of this and related tumors. Author.

A comparison of the signs of temporomandibular joint dysfunction and occlusal discrepancies in a symptom-free population of men and women. Huber, M. A., Hall, E. H. Oral Diagnosis Department, Naval Dental School, National Naval Dental Center, Bethesda, Md. *Oral Surgery, Oral Medicine, Oral Pathology* (1990) Aug, Vol. 70 (2), pp. 180–3.

To date, there has been no conclusive explanation for the predominance of female patients with temporomandibular joint (TMJ) dysfunction. The purpose of this study was to survey a normal population without symptoms for the presence of certain putative signs of TMJ dysfunction in association with certain signs of occlusal discrepancy and to determine the presence of any gender variation. The subjects (217 men and 217 women) were examined for the presence of three putative signs of TMJ dysfunction: limited mandibular opening (under 37 mm), deviation on opening, and joint sounds. The subjects were also examined for the presence of four signs of occlusal discrepancy: an anterior slide from centric relation (CR) to centric occlusion (CO), lateral slide from CR to CO, nonworking occlusal contacts, and working disclusive contacts distal to the canines. CR is the mandibular position at which the condyles are in their most superior position on the posterior aspect of the articular tubercles. CO is the mandibular position at which the mandibular and maxillary teeth are in maximum intercuspalion. There were no significant differences in the prevalence of the putative signs of TMJ dysfunction and occlusal discrepancy between men and women. It was concluded that factors other than the presence of these signs of TMJ dysfunction and occlusal discrepancy are responsible for the high predominance of female patients with TMJ dysfunction. Author.

Malignant cyst of the lateral aspect of the neck: branchial cleft carcinoma or metastasis? Foss, R. D., Warnock, G. R., Clark, W. B., Graham, S. J., Morton, A. L., Yunan, E. S. Oral Pathology Department, Naval Dental School, National Naval Dental Centre, Bethesda, Md. *Oral Surgery, Oral Medicine, Oral Pathology*, (1991) Feb, Vol. 71 (2), pp. 214–17.

A 58-year-old man had a left jugulodigastric mass, which was found to be cystic by computed tomography, and no evidence of other lesions. Grossly and histologically, the surgical specimen consisted of a thin-walled, fluid-filled cyst lined by squamous epithelium that varied in appearance from benign to invasive squamous cell car-

cinoma. The findings supported a differential diagnosis of branchial cleft carcinoma (BCCA) versus cystic growth of a lymph node metastasis from an occult malignancy. On this basis, guided biopsies of the upper aerodigestive tract were performed, with strong suspicion of a tonsillar bed lesion. Microscopic examination revealed the primary tumour within tissue excised from the left tonsillar fossa. Comparison of the current case with cases of BCCA and cystic tonsillar metastases from the literature illustrated the potential pitfalls in rendering a diagnosis of BCCA. Recognition of this lesion as a distinctive clinical variant of oropharyngeal carcinoma is warranted. Author.

Large asymptomatic antrolith of the maxillary sinus. Report of a case. Cohen, M. A., Packota, G. V., Hall, M. J., Steinberg, J. Division of Oral and Maxillofacial Surgery, College of Dentistry and University Hospital, University of Saskatchewan, Saskatoon, Canada. *Oral Surgery, Oral Medicine, Oral Pathology* (1991) Feb, Vol. 71 (2), pp. 155–7.

A case of an unusually large antrolith of the maxillary sinus is presented. Because of the size of the mass, benign neoplasms were considered in the differential diagnosis. Surgery was the treatment of choice, and recurrence of the lesion is not expected. Author.

Anterior lingual mandibular salivary gland defect. Evaluation of 24 cases. Buchner, A., Carpenter, W. M., Merrell, P. W., Leider, A. S. Division of Oral Pathology, University of the Pacific School of Dentistry, San Francisco, California. *Oral Surgery, Oral Medicine, Oral Pathology* (1991) Feb, Vol. 71 (2), pp. 131–6.

Lingual mandibular salivary gland defects in the posterior part of the mandible are not uncommon. Analogous defects in the anterior region, however, are rare, and the four new cases presented in this report bring the total number of reported cases up to 24. The purpose of the present study was to review and analyse the clinical, radiographic, and histologic features of the previously reported cases together with those of the present study. The majority of these defects were located in the cuspid and/or premolar area and were diagnosed in men in their fifth and sixth decades of life. Almost all defects contained normal salivary gland tissue. The differential diagnosis, treatment, and pathogenesis of these defects are discussed. Author.

Pott's puffy tumour: a complication of frontal sinusitis. Pender, E. S. Emergency Department, Hospital for Sick Children, Toronto, Ontario, Canada. *Pediatric Emergency Care* (1990) Dec, Vol. 6 (4), pp. 280–4.

In children sinusitis is a frequent complication of upper respiratory infections but an infrequently considered diagnosis. Although most sinus infections are resolved without complications, when complications do occur they can be serious or life threatening. The most common ones occur in the orbit, but CNS extension is not infrequent. Osteomyelitis and resulting subperiosteal abscess of the frontal bone—the so-called Pott's puffy tumour—is a less common, and perhaps less frequently recognized, serious complication of frontal sinusitis. This paper describes two patients with subperiosteal abscess resulting from frontal sinusitis, one with CNS and orbital extension. A brief literature review is presented, and presentation, diagnosis, and treatment are discussed. Author.

Immunologic defects in patients with refractory sinusitis. Shapiro, G. G., Virant, F. S., Furukawa, C. T., Pierson, W. E., Bierman, C. W. Department of Pediatrics, University of Washington School of Medicine, Seattle. *Pediatrics* (1991) Mar, Vol. 87 (3), pp. 311–16. Sixty-one patients with chronic sinusitis who were referred for an allergy evaluation were evaluated for immunologic competence including assessment of quantitative serum immunoglobulin levels, IgG subclass levels, and response to pneumococcal and Haemophilus influenzae vaccines. In addition to chronic sinus disease, recurrent otitis media and asthma exacerbation were common problems in this group. Five patients had an elevated age-adjusted IgE level and 22 patients had positive prick tests to one or more environmental inhalants; these findings suggest an allergic component in this subgroup. Twelve additional patients had highly reactive intradermal tests to common environmental allergens, which also may be clinically significant for underlying atopy. Eleven patients had low immunoglobulin levels, 6 had low immunoglobulin levels and vaccine hyporesponsiveness, and 17 had poor vaccine response only. Thus, 34 of 61 patients with refractory sinusitis had abnormal

results on immune studies, with depressed IgG3 levels and poor response to pneumococcal antigen 7 being most common. In addition to allergy, immunologic incompetence may be an important etiologic factor in patients with chronic, refractory sinusitis. Author.

Evaluation of ventilating tubes and myringotomy in the treatment of recurrent or persistent otitis media. Le, C. T., Freeman, D. W., Fireman, B. H. Department of Pediatrics, Kaiser Permanente Medical Centre, Sacramento, CA 95403-2192. *Pediatric Infectious Diseases Journal* (1991) Jan, Vol. 10 (1), pp. 2–11.

In a prospective controlled study of the efficacy and sequelae of ventilating tubes, 44 children with bilateral recurrent acute otitis media (greater than 6 episodes/year) and 13 children with bilateral persistent middle ear effusion (greater than 3 months) received unilateral ventilating tube insertion in a randomly selected ear. The contralateral ears were randomized to receive either myringotomy alone or no surgery. Clinical, otoscopic, tympanometric and audiologic examinations were performed before the study and 2 to 4 weeks later, then at 3-month intervals for up to 2 years and at 36 months after surgical randomization. Medical therapy and antibiotic prophylaxis were used whenever indicated. While the ventilating tubes remained functional (mean duration, 10 months) the ears with a tube had significantly fewer episodes of otitis media than their contralateral ear (P less than 0.001; 95% confidence intervals -0.7, -1.7) and had more hearing improvement (P = 0.005; 95% confidence intervals, -5.9, -1.2). After tube extrusion there was a tendency for surgically treated ears to have more otitis and worse hearing, but not at a significant level. Tympanosclerosis, retraction and atrophy were more common in ears that received tubes. The majority of ears treated medically also improved. There is need for a more cautious and selective use of ventilating tubes. Author.

Orbit, skull base, and pharynx: contrast-enhanced fat suppression MR imaging. Barakos, J. A., Dillon, W. P., Chew, W. M. Department of Neuroradiology, University of California, San Francisco Medical Centre 94143. *Radiology* (1991) Apr, Vol. 179 (1), pp. 191–8.

The high signal intensity of fat on T1-weighted magnetic resonance images has limited the utility of gadopentetate dimeglumine in imaging of the extracranial head and neck. Enhancing lesions may be obscured either by proximity to fat or by chemical misregistration artifact. The authors evaluated the role of a gadolinium-enhanced fat suppression imaging technique in the detection of extracranial head and neck abnormalities in 29 patients. These studies were directly compared with conventional pre- and post-contrast T1- and T2-weighted SE sequences. In detecting and defining the extent of abnormalities, fat-suppressed images were superior to non-fat-suppressed gadolinium-enhanced T1-weighted images in the majority of cases (22 of 27 (81%)). Fat-suppressed images were particularly beneficial in the detection of perineural spread of tumor as well as in defining lesions situated within or adjacent to fat-containing areas such as the base of the skull. These findings demonstrate that fat suppression techniques in combination with gadolinium enhancement are of value in extracranial head and neck imaging and should replace conventional postcontrast T1-weighted SE imaging. Author.

Word recognition in presbycusis. Gimsing, S. Department of Audiology, St Josephs Hospital, Esbjerg, Denmark. *Scandinavian Audiology* (1990) Vol. 19 (4), pp. 207–11.

Word recognition assessed as discrimination loss was analysed in 269 women ranging from 60 to 89 years of age. A clear relationship was found between the discrimination loss and the hearing loss (calculated as the average hearing threshold level at 1,000, 2,000, and 4,000 Hz). Furthermore, it was found that a given hearing loss was associated with a much greater discrimination loss in individuals above age 70 than in individuals below that age. Author.

Efficacy of self-hypnosis for tinnitus relief. Attias, J., Shemesh, Z., Shoham, C., Shahar, A., Sohmer, H. Institute for Noise Hazards Research, Chaim Sheba Medical Centre, Ramat-Gan, Israel. *Scandinavian Audiology* (1990) Vol. 19 (4), pp. 245–9.

The efficacy of self-hypnosis (SH) on tinnitus relief was compared with two control procedures: 1) presentation of a brief auditory stimulus (BAS) to the ear with tinnitus; 2) waiting list (WL), ie.

patients receiving no formal treatment. The results have shown that 73% of SH subjects reported disappearance of tinnitus during treatment sessions, as compared with only 24% in the BAS group. Moreover, the short-term (1 week) and long-term (2 months) symptom profiles of only SH subjects revealed a significant improvement. Thus, SH may well be a beneficial method for the relief of tinnitus. Author.

Brainstem potentials in the diagnosis of an acoustic neuroma. An unusual case of normal ipsilateral and abnormal contralateral responses. Coelho, A., Prasher, D. Neuro-Otology Department, National Hospital, London, England. *Scandinavian Audiology* (1990) Vol. 19 (4), pp. 257–62.

An unusual case is presented of a patient with an acoustic neuroma, in whom the responses recorded with the usual derivation of ipsilateral recording and stimulation resulted in a normal response, whereas that derived contralaterally was abnormal. The patient was also reported to have a normal magnetic resonance scan although the tomograms revealed a widening of the internal auditory meatus and subsequent histology confirmed a schwannoma. Postoperatively the hearing was preserved and the brainstem responses showed a typical 'acoustic picture' with a delay of Waves III and V both ipsi and contralaterally. Subsequent testing showed an improvement in the latency of Wave V. Certain hypotheses are advanced regarding the mechanism involved in the latency differences observed between ipsi- and contralateral recordings, but the significance of abnormal prolongation of the latencies of certain components occurring independently in the contralateral response

remains obscure. However, this patient's example clearly shows its value in clinical testing. Author.

Characteristics of electrically evoked 'auditory' brainstem responses elicited with the nucleus 22-electrode intracochlear implant. Allum, J. H., Shalloo, J. K., Hotz, M., Pfaltz, C. R. Department of Otorhinolaryngology, University Clinics, Basel, Switzerland. *Scandinavian Audiology* (1990), Vol. 19 (4), pp. 263–7.

Electrically evoked auditory brainstem responses (EABRs) were measured in cochlear implant patients fitted with the Nucleus 22 electrode system. The typical response waveform consisted of a series of two to three peaks. The largest peak was similar in form to the wave V of acoustically evoked ABRs and was most prominent for stimulus intensities nearly equal to the patients' maximum comfortable (MC) behavioural stimulus level for the test electrode. The first identifiable wave V amplitude was observed at stimulus levels greater than the patients' psychophysical threshold. With increasing stimulus intensity, wave V amplitude increased rapidly to plateau at a level highly correlated with the patients' MC level at the EABR stimulus rate of 17/s. Wave V peak latency was generally shorter than normal ABRs (4.0 cf. 5.5 ms) and varied with electrode position: apical electrodes had shorter latencies than basal electrodes by approximately 0.4 ms. These results suggest that EABRs can be used as an objective estimate of a patient's electrode-specific MC level, once the correlation of EABR growth functions at 17/s to those at clinically employed rates of 250/s has been determined. EABRs may indicate differences in nerve action potential generation for apical and basal electrodes. Author.