

Abstract Selection

Neurophysiological and neuro-otological study of homozygous beta-thalassemia under long-term desferrioxamine (DFO) treatment. Triantafyllou N., Fisis M., Sideris G., Triantafyllou D., Rombos A., Vrettou H., Mantouvalos V., Politi C., Malliara S., Papa-georgiou C. Neurological Clinic, Athens University, Medical School, Eginition Hospital, Greece. *Acta Neurologica Scandinavica* (1991) May, Vol. 83 (5), pp. 306–8.

This report presents data on visual evoked potentials (VEPs) and brainstem auditory evoked potentials (BAEPs), as well as neurologic, ophthalmologic and otologic assessments performed on 120 patients with beta-thalassemia major undergoing long term DFO treatment. A total of 32 patients showed abnormal VEPs and 14 abnormal BAEPs; seven had both VEP and BAEP abnormalities; 12 had sensorineural hearing loss (SNHL); 18 had conductive hearing loss, while 14 showed a combination of SNHL and conductive hearing loss. After DFO administration was modified (taking in consideration the serum ferritin levels) patients with abnormal findings were retested. The values of 15 patients of 23 who underwent VEP examinations had been normalized. Eleven of 15 who repeated the BAEP test had also gained normal values. The audiogram had not returned to normal in any patient with SNHL. In a second repetition of the examinations, no change was observed. It is concluded that in a great percentage of thalassemics at least one of the above examinations shows abnormal values. These abnormalities are mostly reversible, and probably reflects a dysfunction of the visual or auditory system, due either to DFO neurotoxicity or to iron overload or both. Author.

Acute otitis media in early infancy. Recurrence and prophylaxis. Fauskin G. Department of Pediatrics, Harbor UCLA Medical Centre, Torrance. *Acta Paediatrica Scandinavica* (1991) Apr, Vol. 80 (4), pp. 418–22.

During a four-year period, two groups of patients were observed for recurrences of bouts of acute otitis media (AOM) after initial episodes of AOM in early infancy. Of 19 infants with a first bout of AOM before three months of age, all had at least one recurrence within eight months, of them 15 (79 per cent) within four months. All members of a second group of 37 infants with two bouts of AOM before 12 months of age had a third bout within 14 months, and 28 of them (76 per cent) had a recurrence within four months. During the ensuing two years (phase two), a group of six infants with one bout of AOM before three months of age (group one) and a group of 25 infants with two bouts of AOM before 12 months of age (group two) were treated for four months with 25 mg/kg/day aminopenicillin as a single oral daily dose. There were no episodes of AOM in these infants during the prophylactic period. During a third phase lasting two years, patients were assigned to treatment or no treatment regimens for four month periods. Patients in treatment regimens received aminopenicillin or erythromycin ethylsuccinate-sulfamethoxazole (EES-SMZ) once daily. In infants with one bout of AOM before three months (group 1) there were seven bouts of AOM in nine untreated vs one bout in 13 treated patients. In the group of infants with two bouts of AOM before 12 months (group 2), 13 untreated infants had six bouts of AOM vs no bouts in 19 treated patients. Author.

The serum reserve albumin concentration for monoacetyldiaminodiphenyl sulphone and auditory evoked responses during neonatal hyperbilirubinaemia. Esbjorner E., Larsson P., Leissner P., Wranne L. Department of Paediatrics, Orebro Medical Centre Hospital, Sweden. *Acta Paediatrica Scandinavica* (1991) Apr, Vol. 80 (4), pp. 406–12.

Auditory brainstem evoked responses (ABR) were recorded in nine neonates with hyperbilirubinaemia. Pathological recordings were found in two children showing absence of waves and prolonged latencies. There was no correlation between latencies to waves and the total serum bilirubin concentration. The serum reserve albumin concentration for monoacetyldiaminodiphenyl

sulphone (MADDS) was, however, inversely related to the latencies in the ABR recordings. Our findings suggest that the binding properties of serum albumin contribute to the risk of bilirubin toxicity and that, in this study, the reserve albumin concentration for MADDS seem to be of greater significance than the total bilirubin concentration. Author.

The identification of nasal obstruction through clinical judgments of hyponasality and nasometric assessment of speech acoustics. Dalston R. M., Warren D. W., Dalston E. T. University of North Carolina, Chapel Hill. *American Journal of Orthodontics and Dento-Facial Orthopedics* (1991) Jul, Vol. 100 (1), pp. 59–65.

This study examined the records of a consecutive series of 79 patients referred for evaluation at the Oral-Facial and Communicative Disorders Program during a three month period in 1989. The purpose was to determine whether clinical judgments of hyponasality, based on a six-point equal-appearing interval scale or an acoustic assessment with a Kay Elemetrics nasometer could provide information concerning nasal airway patency comparable to that obtained by means of aerodynamic measurement techniques. Among the 40 adults in the series, the sensitivity of hyponasality ratings was 0.55 when nasal airway impairment was defined as a condition in which the airway was less than 0.40 and 0.71 when the definition was limited to airways of less than 0.30 cm². Specificities for the two groups were 0.89 and 0.85, respectively. Similarly, the sensitivity of nasometer ratings was 0.30 for the first group and 0.38 for the second group, while the specificity for the two groups was 0.83 and 0.92, respectively. Comparable analyses for children were not possible because of the extent to which nasal airway size varies in children younger than 15 years of age. Possible reasons for the findings and their clinical significance are discussed. Author.

Mandibular and maxillary growth after changed mode of breathing. Woodside D. G., Linder-Aronson S., Lundstrom A., McWilliam J. Department of Orthodontics, Faculty of Dentistry, University of Toronto, Ontario, Canada. *American Journal of Orthodontics and Dento-Facial Orthopedics* (1991) Jul, Vol. 100 (1), pp. 1–18.

The amount of maxillary and mandibular growth and the direction of maxillary growth were studied in 38 children during the five years after adenoidectomy for correction of severe nasopharyngeal obstruction. The amount of mandibular growth measured between successive gnathion points on superimposed radiographs was significantly greater in the group who had an adenoidectomy than in the matched controls. In the boys the difference was 3.8 mm (*P* less than 0.001), and in the girls the difference was 2.5 mm (*P* less than 0.01). The boys also showed a tendency toward greater growth in the maxilla as measured between successive subnasal points (1.2 mm, *P* less than 0.05). We detected no difference in the direction of maxillary growth between who had undergone adenoidectomy and the controls. Author.

Upper airway collapsibility in snorers and in patients with obstructive hypopnea and apnea. Gleadhil I. C., Schwartz A. R., Schubert N., Wise R. A., Permutt S., Smith P. L. Johns Hopkins Sleep Disorders Center, Division of Pulmonary Medicine, Baltimore, Maryland. *American Review of Respiratory Diseases* (1991) Jun, Vol. 143 (6), pp. 1300–3.

During sleep, mild reduction in inspiratory airflow is associated with snoring, whereas obstructive hypopneas and apneas are associated with more marked reductions in airflow. We determined whether the degree of inspiratory airflow reduction was associated with differences in the collapsibility of the upper airway during sleep. Upper airway collapsibility was defined by the critical pressure (Pcrit) derived from the relationship between maximal inspiratory airflow and nasal pressure. In 10 asymptomatic snorers, six patients with obstructive hypopneas, and 10 patients with obstructive apneas, during non-rapid eye movement sleep, Pcrit ranged

from -6.5 ± 2.7 cm H₂O to -1.6 ± 1.4 and 2.5 ± 1.5 cm H₂O, respectively (mean \pm SD, P less than 0.001). Moreover, higher levels of Pcrit were associated with lower levels of maximal inspiratory airflow during tidal breathing during sleep (P less than 0.005). We conclude that differences in upper airway collapsibility distinguish among groups of normal subjects who snore and patients with periodic hypopneas and apneas. Moreover, the findings suggest that small differences in collapsibility (Pcrit) along a continuum are associated with reduced airflow and altered changes in pattern of breathing. Author.

Vocal cord paralysis in the Shy-Drager syndrome. A cause of post-operative respiratory obstruction. Drury P. M., Williams E. G. Intensive Therapy Unit, Royal Liverpool Hospital. *Anaesthesia* (1991) Jun, Vol. 46 (6), pp. 466–8.

A case is presented in which unexpected and persistent post-operative respiratory problems led to the finding of bilateral abductor vocal cord paralysis and confirmed the diagnosis of the Shy-Drager syndrome. Anaesthetists should be aware that vocal cord paralysis may be a feature of this uncommon condition, and should consider the possibility of glottic obstruction as a cause of ventilatory difficulties. Author.

The laryngeal mask airway in children. A fiberoptic assessment of positioning. Rowbottom S. J., Simpson D. L., Grubb D. Department of Anaesthetics, Royal Hospital for Sick Children, Edinburgh, Scotland, UK. *Anaesthesia* (1991) Jun, Vol. 46 (6), pp. 489–91.

Clinical and fiberoptic assessment of the positioning of the laryngeal mask airway was performed in 100 children. Clinical observation indicated a patent airway in 98 per cent and severe airway obstruction in two per cent of cases. Perfect positioning, as judged by fiberoptic laryngoscopy, was found in 49 per cent and the epiglottis was within the mask in 49 per cent. Fiberoptic evidence of partial airway obstruction in 17 per cent was not detected clinically. Author.

The protective effect of hyperbaric oxygen on hearing during chronic noise exposure. Hu Z. Y., Shi X. F., Liang Z. F., Tang Z. W., Jin X. Q. Naval Medical Research Institute, Shanghai, People's Republic of China. *Aviation Space Environmental Medicine* (1991) May, Vol. 62 (5), pp. 403–6.

A series of experiments were conducted on guinea pigs to study the protective effect of hyperbaric oxygen (HBO) on hearing during chronic repeated noise exposure. A 1/3 octave band of noise centred at 1000 Hz was used (126 dB SPL, 1 h daily for 5 d; or 108 dB SPL, 1 h daily, 5 d/week for four weeks). Some groups of animals were treated with HBO (2–3 ATA, 1 h duration) before noise exposure. The results indicate that inhalation of HBO (every other day) can markedly reduce noise-induced threshold shift and relieve cochlear damage. The mechanism responsible for HBO protection against noise-induced hearing damage is discussed. Author.

Control of nausea and autonomic dysfunction with terfenadine, a peripherally acting antihistamine. Kohl R. L., Calkins D. S., Robinson R. E. Division of Space Biomedicine, NASA/Johnson Space Center, Houston, TX 77058. *Aviation Space Environmental Medicine* (1991) May, Vol. 62 (5), pp. 392–6.

Terfenadine (Seldane) was administered to 14 male subjects in a randomized, double-blinded, and crossed-over design to assess the efficacy of this peripherally active antihistamine as an anti-motion sickness drug. Terfenadine possesses practically no central side effects. A Staircase Profile Test was administered 4 h following placebo or a single oral dose of terfenadine (300 mg). The study revealed a statistically significant therapeutic effect from terfenadine (P less than 0.05). This led us to conclude that because the drug does not or only poorly crosses the blood-brain barrier, a selective peripheral antihistamine (H1) action may be sufficient in the control of motion sickness induced through cross-coupled accelerative semicircular canal stimulation using a rotating chair. This finding implies that other peripherally acting agents might be found that possess even greater anti-motion sickness efficacy. The present research raises additional questions regarding current theories on the etiology of motion sickness, its associated autonomic system dysfunction, and the validity of assumptions that effective pharmacological agents must act centrally. Author.

A modified surgical approach for parapharyngeal space tumours:

use of the inverted 'L' osteotomy. Flood T. R., Hislop W. S. Department of Oral and Maxillofacial Surgery, Canniesburn Hospital, Bearsden, Glasgow. *British Journal of Oral Maxillofacial Surgery* (1991) Apr, Vol. 29 (2), pp. 82–6.

Removal of tumours from the parapharyngeal space is often difficult because of limited surgical access. Mandibulotomy has proved useful for improving access but may cause damage to the inferior dental and lingual nerves. Use of the inverted 'L' osteotomy provides excellent access avoiding damage to the nerves and the technique is illustrated with three surgical cases. Author.

Correction of microtia with construction of the tragus using a chondrocutaneous flap. Ono I., Ohura T., Kimura C., Murazumi M., Sakamura R., Misawa H. T. Department of Dermatology, Fukushima Medical College, Japan. *British Journal of Plastic Surgery* (1991) May–Jun, Vol. 44 (4), pp. 250–8.

For microtia correction we have been inserting a cartilage framework and reconstructing the tragus at the first operation in one stage, using part of the microtic ear. This procedure is started with transposition of the lower two-thirds of the microtic ear to make a lobule. The upper third of the microtic ear is elevated as a chondrocutaneous flap which is then transposed downwards to the conchal cavity to make a tragus. The cartilage of the chondrocutaneous flap is anchored, using a bolster to pull it back and outwards. Using this technique, we have reconstructed 34 microtic ears. Adequate positioning of the auricle and tragus has been achieved and a natural auricle obtained even when observed from a frontal oblique direction. Author.

A comparison of the clinical characteristics of first and second primary head and neck cancers. A population-based study. Robinson E., Neugut A. I., Murray T., Rennert G. Northern Israel Oncology Center, Rambam Medical Center, Haifa, Israel. *Cancer* (1991) Jul 1, Vol. 68 (1), pp. 189–92.

The clinical characteristics of 183 patients with second primary neoplasms in the head and neck region were compared with those of 20,598 patients with one primary tumour in the same region registered during the period 1973 to 1984 in the Surveillance, Epidemiology and End-results Program. Second primary head and neck tumours were more likely to be diagnosed in a localized stage (47 per cent) than if diagnosed as a single primary tumour (43 per cent), but this difference was not significant. The tumour grade distribution was comparable in both groups. Using Cox proportional hazards modeling with age, sex, race, and stage as covariates, the median survival of patients with first and second head and neck cancer was identical (50 months). The survival of patients with localized second head and neck cancer was shorter than that of patients with single localized tumours (55 versus 102 months, P less than 0.026). Survival for regional tumours was similar (18 versus 21 months, not significant). The 84 second head and neck cancers in which the first head and neck cancer received radiation therapy (RT) had a median survival of 20 months; the 98 cases without prior RT had a median survival of 35 months. The high incidence of localized second cancers was probably due to the more intense surveillance. The worse survival in this group may be a result of prior RT or biologic characteristics of the tumour. Author.

The efficacy of fiberoptic endoscopic examination and biopsy in the detection of early nasopharyngeal carcinoma. Wei W. I., Sham J. S., Zong Y. S., Choy D., Ng M. H. Department of Surgery, University of Hong Kong. *Cancer* (1991) Jun 15, Vol. 67 (12), pp. 3127–30.

Fiberoptic endoscopic examination and biopsy of the nasopharynx was done in 130 patients as a prospective study. They all had elevated titers of antibodies against the viral capsid antigen of Epstein-Barr virus but no symptoms or signs of nasopharyngeal carcinoma. Each underwent a biopsy from six fixed sites in the nasopharynx. Of the 780 biopsy specimens taken from seven patients, 11 showed the presence of nasopharyngeal carcinoma. Techniques to improve the yields of such biopsies with fiberoptic endoscopy are discussed. The presence of tumour was unrelated to the macroscopic endoscopic findings. The highest incidence of sub-clinical tumour is in the pharyngeal recess. Author.

Papillary carcinoma in ectopic thyroid detected by TI-201 scintigraphy. Michigishi T., Mizukami Y., Mura T., Nomura T., Watanabe K., Tonami N., Hisada K. Department of Nuclear Medicine Section Kanazawa University Hospital, Japan. *Clinical Nuclear Medicine* (1991) May, Vol. 16 (5), pp. 337–9.

A 37-year-old man with papillary carcinoma in an ectopic thyroid is presented. Excisional biopsy revealed the cervical mass to be a metastasis from thyroid cancer. X-ray, ultrasonography, and computed tomography, however, failed to identify the primary tumour in the thyroid. Incidental TI-201 uptake was noted in the midline of the anterior neck, and a palpable nodule was discovered in this area. Fine needle aspiration cytology demonstrated Class V papillary adenocarcinoma, and subsequent surgery confirmed a papillary carcinoma in the ectopic thyroid. This case suggests the usefulness of TI-201 scintigraphy for the detection of ectopic thyroid malignancy. Author.

Mucous cyst of the sphenoid sinus. Farman A. G., Baker I. School of Dentistry, University of Louisville, Kentucky. *Dentomaxillo-Facial Radiology* (1990) Nov, Vol. 19 (4), pp. 178–80.

Sphenoid sinus mucous cysts are rare, benign, expansile masses, which can form mucocoeles if the entire sinus is filled. Due to their close proximity to numerous important anatomical structures, they can cause a variety of different symptoms. The incidental finding of a sphenoid sinus mucous cyst during cephalometric radiology for orthodontic analysis is reported. Author.

Ultrasound diagnosis of lymph node metastasis in head and neck cancer. Shozushima M., Suzuki M., Nakasima T., Yanagisawa Y., Sakamaki K., Takeda Y. Iwate Medical University, Morioka, Japan. *Dentomaxillofacial Radiology* (1990) Nov, Vol. 19 (4), pp. 165–70.

The role of ultrasonic (US) examination in the detection of cervical lymph node metastasis from head and neck cancer has been evaluated. The subjects were 57 patients with carcinoma of the oral cavity, maxillary sinus or oropharynx who underwent radical neck dissection. The preoperative US and postoperative histopathological findings were compared in 181 lymph nodes (LNs) of 5 mm or more in diameter. LNs were evaluated by US with reference to their size, shape, boundary and internal echoes. The histologically positive rate was higher for larger LNs on US scans: 96 per cent (44/46) of LNs of 15 mm or more were positive. On the other hand, 95 per cent (18/19) of the flat LNs were negative. The positive rate was higher for well delineated than poorly delineated LNs, but similar among the homogeneous, heterogeneous and reflective core patterns of internal echoes. No LNs were detected by US in six of the 57 patients, of which four were true negative and the other two false negative. In the two false negative patients, histopathological examination showed a total of four LNs with two showing extensive extranodal spread of tumour and fibrosis of the surrounding tissue due to previous radiotherapy. Whether LNs are metastatic or not is difficult to determine directly by US. However, the positive rate can be enhanced by evaluation of the size, shape and boundary of the LN. US is indispensable for diagnosing cervical lymph node metastasis in patients with malignant head and neck tumours. Author.

Influence of outer ear resonant frequency on patterns of temporary threshold shift. Rodriguez G. P., Gerhardt K. J. Department of Communication Disorders, Florida State University, Tallahassee. *Ear and Hearing* (1991) Apr, Vol. 12 (2), pp. 110–4.

Noise-induced hearing loss following a broadband noise exposure has been characterized by a notch in the audiogram in the 3.0 to 6.0 kHz range. It has been postulated that loss of sensitivity in this frequency range is related to the primary resonant frequency of the external auditory meatus. In order to further explore this hypothesis, 31 normal-hearing subjects provided measurements of acoustic gain of the external ear and temporary threshold shift (TTS). Subjects completed sweep frequency Bekesy tracking procedures prior to and immediately following a 30-min broadband noise exposure (95 dBa). The frequency maximally affected by the noise exposure (Max TTS) was correlated to primary resonant frequency of the outer ear (Max RF). A significant positive correlation between these two measures was identified. A 100 Hz difference in Max RF resulted in approximately a 140 Hz change in Max TTS. Thus, the external ear plays a significant role in the frequencies affected by a broadband noise exposure. Author.

Ototoxicity due to cis-diamminedichloroplatinum in the treatment of ovarian cancer: influence of dosage and schedule of administration. Waters G. S., Ahmad M., Katsarkas A., Stanimir G., McKay J. School of Human Communication Disorders, McGill University, Montreal, Canada. *Ear and Hearing* (1991) Apr, Vol. 12 (2), pp. 91–102.

Ototoxicity associated with administration of cisplatin was assessed in four groups of patients suffering from advanced ovarian carcinoma. The purpose was to determine the influence of dosage, schedule of administration, and long-term treatment on pure-tone thresholds and other auditory parameters. One hundred and forty-five serial audiograms were obtained in 60 patients and compared with baseline audiograms. The treatment protocol consisted of two different dosages (low 50 mg/m² and high 100 mg/m²) and three different schedules of administration (short 6 months, extended 12 months, and treatment in blocks intervening months in which cisplatin was withheld). Using a conservative definition of auditory toxicity and statistical analyses of pure-tone threshold differences between groups, the results indicated that the low dose short treatment regimens with either monthly administration of cisplatin, or administration in blocks, were the least ototoxic. Ototoxicity was found to increase with increasing cumulative dosages. Hearing loss was primarily in the high frequencies. The most severe ototoxic effects, which include tinnitus and hearing loss in the speech frequency range, were associated with the administration of high dosages over a short period of time. Individual variability in susceptibility to ototoxicity necessitates systematic audiometric monitoring throughout therapy. Author.

Event-related potentials and eyeblink responses in automatic and controlled processing: effects of age. Ford J. M., Pfefferbaum A. Department of Psychiatry and Behavioural Sciences, Stanford University School of Medicine, Palo Alto, CA. *Electroencephalography and Clinical Neurophysiology* (1991) May, Vol. 78 (5), pp. 361–77.

Seventeen young (mean age = 20.2 years old) and 16 elderly (mean age = 72.6 years old) women were tested with event-related potential (ERP) paradigms designed to elicit responses in reaction time tasks and to a startling noise burst. EEG was analysed from 17 standard 10–20 electrode sites. Reaction time and performance data suggested that the elderly did not perform worse than the young. Nevertheless, the physiological responses of the elderly differed significantly from those of the young. While the task-dependent P3s and Pz were smaller in the elderly than in the young, the automatic P3 was smaller yet. The distribution of both types of P3 across the scalp was more uniform in the elderly than in the young. Single-trial analyses revealed that the P3 amplitude differences at Pz were not due to latency dispersal of single trials. Single-trial startle eye blink responses to intense noise bursts during the automatic paradigm were considerably less frequent in the elderly, although their individual startle blinks were actually larger. The data demonstrate that the electrophysiological responses of the elderly are different from the young both in tasks eliciting automatic responses and in tasks requiring controlled processing. Author.

Recording single motor unit activity of human nasal muscles with surface electrodes: applications for respiration and speech. Lansing R. W., Solomon N. P., Kossev A. R., Andersen A. B. Department of Psychology, University of Arizona, Tucson 85721. *Electroencephalography and Clinical Neurophysiology* (1991) Jun, Vol. 81 (3), pp. 167–75.

A method is presented for recording nasal single motor unit (SMU) potentials from the skin surface using a 3-pole 'branched' bipolar electrode. Stable, high-quality recordings of single motor unit activity were obtained for up to 3 h. Branched electrode arrays were capable of locating an SMU's maximal voltage point within 5 mm. We examined nasal SMU discharge patterns in relation to respiration in nine adult humans. The majority of SMUs which discharged during quiet breathing began firing late in expiration and ceased firing in mid-inspiration, other SMUs discharged only during expiration, and a few fired continually with frequency modulation during breath cycles. With increased ventilation, new SMUs were recruited, and previously active SMUs increased the frequency and duration of their discharge. We examined the discharge of 13 units (five adults) which discharged during speech but were never active during quiet or moderately increased breathing. Some of these SMUs fired during production of nasal consonants, and others were active for articulations involving facial movements (bilabial stops, labio-dental fricatives, and vowels produced with lip movement). By providing information about motor neuron recruitment which cannot be obtained from gross EMG recordings, surface recording of unit potentials may be useful in studying the central nervous control of the nasal upper airway, face and neck for respiration and speech. Author.

Old theme and new reflections: hearing impairment associated with

endolymphatic hydrops. Horner K. C. Laboratoire d'Audiologie Experimentale, Inserm U229, Hopital Pellegrin, Bordeaux, France. *Hearing Research* (1991) Mar, Vol. 52 (1), pp. 147-56.

The cause(s) of the hearing impairment associated with Meniere's disease are not understood but are undoubtedly associated with the inner ear endolymphatic hydrops. Two major hypotheses have been proposed and widely received: endolymphatic overpressure followed by leaky membranes and subsequently the mixing of high K⁺ endolymph with perilymph. Our recent data on an experimental model of endolymphatic hydrops have provided grounds for renewed reflections on the pathology. Indeed our data might be interpreted without involving either of the above hypotheses and suggests that the symptoms of Meniere's disease might be accounted for by a flow of perilymph from scala vestibuli towards scala tympani with the mixing of the two perilymphs which are similar but not identical in composition. The higher K⁺ concentration arriving from the scala vestibuli into the scala tympani at the apex of the cochlea via the helicotrema is likely to be toxic to hair cell and auditory nerve fiber function. The mixing of the two perilymphs could result in deterioration of low frequency sensitivity, provoke low frequency tinnitus and in the long term cause spiral ganglion cell degeneration at the apex of the cochlea. The feeling of fullness in the ear might be the result of the decreasing perilymph volume in the scala vestibuli which could give rise to inner ear conductive losses. The patency of the cochlear aqueduct might play a role in determining the high risk group of individuals likely to manifest the symptoms of endolymphatic hydrops. Author.

Atrophy of outer hair cell stereocilia and hearing loss in hydroptic cochleae. Rydmarker S., Horner K. C. Laboratoire d'Audiologie Experimentale, INSERM Unite 229, Universite Bordeaux II, Hopital Pellegrin, France. *Hearing Research* (1991) May, Vol. 53 (1), pp. 113-22.

We have earlier described selective atrophy of short and middle stereocilia on outer hair cells of the three upper cochlear turns in hydroptic cochleae of guinea pigs. The present study describes sequential early stages of stereocilia degeneration leading to this specific atrophy. Comparison of the morpho-pathology with the ultimate CAP audiograms taken before sacrifice indicated a close association between the low frequency hearing loss and this atrophy of stereocilia. The atrophy appeared to be associated first with the short and then the middle stereocilia of the second and third rows of outer hair cells between 0.5 kHz and 2 kHz and with time included the first row of all outer hair cells of the upper cochlear turns down to the 8 kHz region. Author.

Binaural effects in brainstem auditory evoked potentials of jaundiced Gunn rats. Shapiro S. M. Waisman Centre on Mental Retardation and Human Development, Departments of Neurology and Pediatrics, University of Wisconsin-Madison. *Hearing Research* (1991) May, Vol. 53 (1), pp. 41-8.

Bilirubin toxicity causes encephalopathy associated with lesions of the central auditory nervous system. Abnormal brainstem auditory evoked potentials (BAEPs) in jaundiced Gunn rats made acutely bilirubin toxic suggest abnormal input into the superior olivary complex, which might result in abnormal binaural interaction. Binaural difference waves (BDWs), obtained by subtracting the sum of two monaural BAEPs from a binaural BAEP, were obtained in 16- to 20-day-old jaundiced Gunn rats before and after injection of sulfadimethoxine, which produces bilirubin neurotoxicity by promoting net transfer of bilirubin out of the circulation into brain tissue. Reliable BDWs were recorded with onset 4.5 ms after the stimulus, followed by a large, often bimodal, positive peak occurring at about 6 ms. Following injection of sulfadimethoxine to produce bilirubin neurotoxicity, there was loss of BDW amplitude (21 per cent \pm 14 per cent of baseline, P less than 0.0001) and increase in latency (0.62 \pm 0.42 ms, $p = 0.03$) in bilirubin-toxic jaundiced rats compared to baseline, but no significant changes in non-jaundiced controls treated similarly. This documents abnormal BDWs in acute bilirubin encephalopathy suggesting that abnormalities of functions dependent on binaural processing of auditory information may be found as neurologic sequelae to bilirubin toxicity. BAEP BDWs may be a sensitive method for detecting neurophysiological abnormalities due to bilirubin toxicity. Author.

The effects of quinine on the cochlear mechanics in the isolated temporal bone preparation. Karlsson K. K., Ulfendahl M., Khanna S. M., Flock A. Department of Audiology, Huddinge University Hospital, Sweden. *Hearing Research* (1991) May, Vol. 53 (1), pp. 95-100.

Quinine is known to induce a reversible hearing loss and to evoke motile responses of isolated outer hair cells. To study the effect of quinine, mechanical tuning curves of the Hensen's cells were measured in the isolated cochlea preparation in response to acoustical stimuli applied to the ear before and after application of the drug. It was shown that 0.5-4 mM quinine increased the vibration amplitude at the peak of the mechanical resonance curves and increased the sharpness of tuning. The time course of the event depended on whether the scala media was opened or not. The results show that quinine alters the micromechanical tuning of the organ of Corti. Author.

Clinical radiobiology of squamous cell carcinoma of the oropharynx. Bentzen S. M., Johansen L. V., Overgaard J., Thames H. D. Danish Cancer Society, Department of Experimental Clinical Oncology, Aarhus, Denmark. *International Journal of Radiation, Oncology, Biology and Physics* (1991) Jun, Vol. 20 (6), pp. 1197-206.

Local tumour control is analysed in a series of 181 patients treated with definitive megavoltage radiotherapy (RT) for histologically proven squamous cell carcinoma of the oropharynx. Considerable variation in treatment time stemmed from the general use of a split-course technique in 49 patients treated from 1978 to 1985. Incomplete follow-up, in those patients alive and well at the termination of the study or who have died from metastases or intercurrent disease before developing a local recurrence, was allowed for by using a multivariate mixture model. The tumour control probability (TCP) after radiotherapy showed a significant dependence on the following tumour and treatment characteristics: (a) tumour size; the number of tumour target cells increases approximately as the fourth root of estimated tumour volume; (b) sex: the estimated TCP in males is lower than in females with the same characteristics; (c) histopathological differentiation: well-differentiated tumours have a lower TCP than poorly and intermediately differentiated; (d) hemoglobin concentration: patients in the upper normal range have a significantly higher TCP than others; (e) total dose: there is a significant dose-response relationship; and (f) overall treatment time: TCP decreased with increasing overall time, the dose equivalent of proliferation with 2 Gy per fraction was 0.68 Gy/day with 95 per cent confidence limits (0.05, 1.3) Gy/day. The TCP did not depend significantly on subsite within the oropharynx or nodal disease at presentation. The data were consistent with an alpha/beta ratio of the linear-quadratic model of 10 Gy. Author.

Evidence for the influence of aging on distortion-product otoacoustic emissions in humans. Lonsbury Martin B. L., Cutler W. M., Martin G. K. Department of Otorhinolaryngology and Communicative Sciences, Baylor College of Medicine, Houston, Texas 77030. *Journal of Acoustical Society of America* (1991) Apr, Vol. 89 (4 (Pt.1)), pp. 1749-59.

Previous measures of distortion-product otoacoustic emissions (DPOAEs) in young adults suggested that these responses were capable of detecting the functional effects of auditory aging. The primary goal of the present study was to provide more detailed evidence for the influence of aging processes on the ability of healthy, older ears to generate DPOAEs. Toward this end, DPOAEs were examined in a series of human subjects, with clinically normal hearing, ranging in age from 31 to 60 years. Acoustic-distortion products were measured in two basic forms consisting of 'audiograms' and response/growth or input/output functions. Distortion-product 'audiograms' depicted the detailed frequency pattern of DPOAE amplitudes in response to constant-level stimuli, whereas the growth functions described the detection 'threshold' and suprathreshold aspects of DPOAE activity, at specific frequencies, in response to primary tones that were systematically increased in level. The principal finding was that, when compared to emissions in young ears, DPOAEs accurately tracked the systematic deterioration of high-frequency hearing in aging individuals. Author.

Lateral pharyngeal space abscess as a consequence of regional anesthesia. Kitay D., Ferraro N., Sonis S. T. Brigham and Women's Hospital. *Journal of American Dental Association* (1991) Jun, Vol. 122 (7), pp. 56-9.

Trismus may be a complication from local anesthesia. Patients with trismus of unknown cause after dental treatment should be evaluated thoroughly. The dentist should perform a complete examination and establish a differential diagnosis to avoid missing a serious or life-threatening infection. A right lateral pharyngeal space infection developed after a general restorative procedure

that involved an inferior alveolar nerve injection on the same side. The patient's severe trismus required awake intubation, incision and drainage while the patient was under general anesthesia, treatment with antibiotics and 10 days of hospitalization. Author.

Arytenoideus muscle activity in normal adult humans during wakefulness and sleep. Kuna S. T., Insalaco G., Villeponteaux R. D. Department of Internal Medicine, University of Texas Medical Branch, Galveston 77550. *Journal of Applied Physiology* (1991) Apr, Vol. 70 (4), pp. 1655-64.

The respiratory-related activity of the arytenoideus (AR) muscle, a vocal cord adductor, was investigated in 10 healthy adults during wakefulness and sleep. AR activity was measured with intramuscular hooked-wire electrodes implanted by means of a fiberoptic nasopharyngoscope. Correct placement of the electrodes was confirmed by discharge patterns during voluntary maneuvers. The AR usually exhibited respiratory-related activity during quiet breathing in all awake subjects. Tonic activity was frequently present throughout the respiratory cycle. The pattern of phasic discharge during wakefulness exhibited considerable intrasubject variability both in timing and level of activity. Phasic activity usually began in midinspiration and terminated in mid- to late expiration. Periods of biphasic discharge were observed in four subjects. Phasic discharge primarily confined to expiration, was also commonly observed. During quiet breathing in wakefulness, the level of phasic AR activity appeared to be directly related to the time of expiration. The AR was electrically silent in the six subjects who achieved stable periods of non-rapid-eye-movement sleep. Rapid-eye-movement sleep was observed in three subjects and was associated with sporadic paroxysmal bursts of AR activity. The results during wakefulness indicate that vocal cord adduction in expiration is an active phenomenon and suggest that the larynx may have an active role in braking exhalation. Author.

Sulbactam/ampicillin in the treatment of otitis and sinusitis. Nicoletti G., Speciale A., Caccamo F., Raso F. Institute of Microbiology, University of Catania, Italy. *Journal of International Medicine Research* (1991), Vol. 19 Suppl 1, pp 29A-35A.

The importance of beta-lactamase-producing strains in acute otitis media and acute/chronic sinusitis, and the effectiveness of sulbactam/ampicillin were ascertained *in vitro* and *in vivo*. Of the strains isolated from 19 patients with otitis media, 40 per cent are beta-lactamase producers whereas 44 per cent of strains isolated from 22 patients with sinusitis produced beta-lactamase. When the most commonly isolated strains were treated with a range of antibiotics *in vitro*, they all showed 100 per cent sensitivity to sulbactam/ampicillin. The clinical results for otitis media showed 63 per cent recovery and 26 per cent improvement, with only one (five per cent) failure (one patient did not complete treatment). For sinusitis the results were 55 per cent recovery and 45 per cent improvement, and no failures. For sinusitis, the end-of-treatment microbiological results showed complete eradication of the pathogens responsible for infection. The results indicate that sulbactam/ampicillin is an effective treatment for infections of the ear, nose and throat. Author.

The use of visible light-curing resin for vertebral body replacement. Segal R., Alsawaf M., Tabatabai A., Saito R., Segal E. D., McKinstry R. Department of Neurological Surgery, University of Pittsburgh, Pennsylvania. *Journal of Neurosurgery* (1991) Jul, Vol. 75 (1), pp. 91-6.

The technology of visible light-curing resin has recently been developed for use in removable prosthodontics. A quartz halogen lamp producing a 400- to 500-nanometer wave-length spectrum of visible light is used to polymerize high-molecular weight acrylic resin monomers. While several *in vitro* and *in vivo* studies of visible light curing resin are found in the dental literature, no studies have yet been performed to evaluate it as an intracorporeal implant in surgery. The authors have designed a rat model of microcervical corpectomy to assess vertebral body replacement with visible light-curing resin in comparison to conventional autopolymerizing methyl methacrylate. Spinal cord function tests, spinal-implant stability assessments, and histological evaluations were made in a total of 41 rats at 2, 4 or 6 months postimplant. No animal developed a neurological deficit or radiographic instability, and at sacrifice there was no evidence of implant fracture-extrusion. In addition, there were no signs of adverse reaction in the surrounding tissues. Morphological investigation of the resin/bone interface at six months revealed very good implant anchorage. Visible light-

curing resin was found to be far superior to methyl methacrylate for construction of spinal implants. Its waxy consistency makes it easy to handle. It remains pliable until light is applied, allowing adjustments in shape for a well-fitted implant without time constraints. Applied in layers, adjustments can be made even after polymerization of a previous layer. This new implantable resin will allow safer, immediate stabilization in patients with neoplastic destruction of the spine, and may also be advantageous for other neurosurgical applications, such as cranioplasty. Author.

The incidence and relationship of cervical spine anomalies in patients with cleft lip and/or palate. Horswell B. B. Department of Oral and Maxillofacial Surgery, School of Dental Medicine, University of Connecticut Health Centre, Farmington 06032. *Journal of Oral and Maxillofacial Surgery* (1991) Jul, Vol. 49 (7), pp. 693-7.

The relationship, incidence, and distribution of cervical spine anomalies were assessed in 468 patients with cleft lip and/or palate. The patients were placed into four groups: lip and/or alveolar; complete unilateral or bilateral; isolated palatal; and soft palate or submucous clefts. Cervical anomalies were observed in 22 per cent of the cleft patients and in seven per cent of the non-cleft group. Patients with soft palate and submucous clefts had the highest incidence of vertebral anomalies (45 per cent), whereas patients with cleft lip and/or alveolus had an incidence similar to the non-cleft group. Patients with complete unilateral and bilateral clefts also had a higher incidence (15.6 per cent to 19 per cent) of anomalies than the non-cleft group. Cervical anomalies occurred primarily in the occipital-C1-C2 region. The possible implications of these findings are discussed. Author.

Cefixime compared with amoxicillin for treatment of acute otitis media. Johnson C. E., Carlin S. A., Super D. M., Rehms J. M., Roberts D. G., Christopher N. C., Whitwell J. K., Shurin P. A. Department of Pediatrics, Case Western Reserve School of Medicine, MetroHealth Medical Center, Cleveland, Ohio 44109. *Journal of Pediatrics* (1991) Jul, Vol. 119 (1 (Pt.1)), pp. 117-22.

Cefixime was compared with amoxicillin for treatment of acute otitis media in a randomized trial. Results of tympanocentesis on day 3 to 5 of therapy were used as the major outcome. Total daily doses were 8 mg/kg of cefixime and 40 mg/kg of amoxicillin. One hundred and twenty-six patients were randomly assigned to receive treatment; 64 cultures grew pathogens. Pathogens were eradicated from the middle ear after 3 to 5 days of therapy in 27 (79.4 per cent) of 34 children given amoxicillin and 26 (86.7 per cent) of 30 children given cefixime ($p = 0.47$). When *Streptococcus pneumoniae* cases were analysed, bacteriologic cure occurred in 14 (93.3 per cent) of 15 children given amoxicillin and 12 (75 per cent) of 16 given cefixime ($p = 0.333$). When cases of *Haemophilus influenzae* infection were analysed, significantly more cures occurred with cefixime (10/10, 100 per cent) than amoxicillin (8/13, 62 per cent) ($p = 0.046$). Pathogens associated with failure of amoxicillin therapy were *H. influenzae* (five cases, two beta-lactamase-positive), *S. pneumoniae* (one case), and *Moraxella catarrhalis* (one case, beta-lactamase-positive). The four failures with cefixime therapy were all in patients infected with *S. pneumoniae*. Rates of rash, diarrhea, and vomiting were the same in both groups and did not necessitate stopping therapy. We conclude the following: (1) Cefixime and amoxicillin were equivalent in overall clinical and bacteriologic efficacy for otitis media. (2) Cefixime was more efficacious than amoxicillin in treating *H. influenzae* otitis media and should be preferred when *H. influenzae* is the suspected etiologic agent. (3) Side effects of both drugs were mild and equivalent. Author.

Clindamycin treatment of chronic pharyngeal carriage of group A streptococci. Tanz R. R., Poncher J. R., Corydon K. E., Kabat K., Yoge R., Shulman S. T. Division of General Academic and Emergency Pediatrics, Children's Memorial Hospital, Chicago, IL 60614. *Journal of Pediatrics* (1991) Vol. 119 (1 (Pt.1)), pp. 123-8.

We previously demonstrated that chronic pharyngeal carriage of group A beta-hemolytic streptococci (GABHS) can be terminated by intramuscular administration of benzathine penicillin plus four days of orally administered rifampin. Because an effective oral regimen would be desirable, we compared clindamycin with P + R for treating GABHS carriage. Healthy, symptom-free GABHS carriers were randomly assigned to receive orally administered clindamycin (20 mg/kg/day) three times a day for 10 days or intramuscularly administered benzathine penicillin with oral doses of rifampin (20 mg/kg/day) twice a day for four days. Compliance was

documented by antibiotic activity in urine. Throat cultures for GABHS were obtained every three weeks for up to nine weeks after treatment. Patients who had positive throat cultures for their original GABHS T type 3 weeks after randomization were crossed over to the other treatment. Treatment success was defined as eradication of the original GABHS T type, with all follow-up cultures negative. Clindamycin eradicated carriage in 24 (92 per cent) of 26 patients; penicillin plus rifampin was effective in 12 (55 per cent) of 22 patients (P less than 0.025). Including patients crossed over three weeks after enrollment, clindamycin was effective in 28 (85 per cent) of 33 treatment courses compared with 12 of 22 courses of penicillin plus rifampin (P less than 0.05). We conclude that 10 days of oral clindamycin therapy was significantly more effective than benzathine penicillin plus 4 d of orally administered rifampin for treatment of symptom-free GABHS carriers. Author.

Self-reported symptoms of stress with temporomandibular disorders: comparisons to healthy men and women. Beaton R. D., Egan K. J., Nakagawa-Kogan H., Morrison K. N. Department of Psychological Nursing Sciences, University of Washington, Seattle. *Journal of Prosthetic Dentistry* (1991) Feb, Vol. 65 (2), pp. 289–93.

Replies on a self-report measure of symptoms of stress obtained from men and women patient samples with diagnosed temporomandibular disorders were compared with similar replies on this test obtained from healthy men and women. On most (six of 10) of the symptoms of stress subscales, the temporomandibular disorder patients' scores were elevated relative to the symptoms of stress averages of the healthy non-patient samples. There were several statistically significant group differences. There were no statistically significant gender differences nor any gender group interactions. These data are seen as essentially supporting and extending prior studies, which have indicated that, on the average, temporomandibular disorder patients report more psychologic and somatic symptoms. Furthermore, current findings indicate that male temporomandibular disorder patients and female temporomandibular disorder patients report more numerous and/or frequent somatic, psychologic, and behavioural symptoms of stress compared with their healthy counterparts. Author.

Vascularized omentum graft for the reconstruction of the skull base after removal of a nasethmoidal tumour with intracranial extension: case report. Yamaki T., Uede T., Tano-oka A., Asakura K., Tanabe S., Hashi K. Department of Neurosurgery, Sapporo Medical College, Japan. *Neurosurgery* (1991) Jun, Vol. 28 (6), pp. 877–80.

A 16-year-old boy with rhabdomyosarcoma occupying the nasal cavities and the ethmoid sinus with intracranial extension underwent transcranial surgery. The intradural tumour was resected first with the affected dura of the anterior skull base, and the dural defect was repaired with fascia harvested from the sheath of the rectus abdominis muscle. The remaining tumour contiguous to the nasal cavities was completely extirpated. The cranial cavity was then exposed to the opened nasal cavities, where a revascularized omental graft was used to separate these compartments. Lyophilized dura was placed beforehand beneath the omental graft, as a roof to the nasal cavity, and was removed three weeks later through the nostril. A bony skull base repair was performed over the omentum using the inner table of the bone flap. Subcutaneous fat from the abdomen was placed on the bone graft for fixation and as an additional seal for the dural defect. Reconstruction of the anterior skull base with a vascularized omental transfer provides an efficient barrier to the nasal cavity. It also serves as an excellent supporting structure for regeneration of the mucosal epithelium of the nasal cavities. Author.

Prolonged lumbar spinal drainage after the resection of tumours of the skull base: a cautionary note. Snow R. B., Kuhel W., Martin S. B. Division of Neurosurgery, New York Hospital-Cornell Medical Centre, New York. *Neurosurgery* (1991) Jun, Vol. 28 (6), pp. 880–2; discussion 882–3.

A combined transcranial and facial approach was used for an en bloc resection of a malignant angiosarcoma of the ethmoid sinuses. The patient awoke neurologically intact and was monitored in the Intensive Care Unit. A lumbar subarachnoid drain was placed for the continuous removal of the cerebrospinal fluid (CSF). Approximately 36 hrs after surgery, she deteriorated neurologically and demonstrated bilateral extensor posturing to painful stimuli. A computed tomographic scan demonstrated obliteration of the basal

cisterns indicative of transtentorial herniation and a small amount of extradural air. Eight hours after the lumbar drain was turned off, the patient had recovered completely. We propose that the patient manifested transtentorial herniation caused by a pressure gradient between the supratentorial and lumbar cistern compartments brought on by the continuous removal of CSF from the lumbar subarachnoid space. We suggest that ventricular drainage should be considered for these cases rather than lumbar drainage. This offers the same advantage of removing the CSF and maintaining low-to-normal intracranial pressure without the risk of transtentorial herniation. Author.

Transoral crossbow injury to the cervical spine: an unusual case of penetrating cervical spine injury. Salvino C. K., Orogitano T. C., Dries D. J., Shea J. F., Springhorn M., Miller C. J. Department of Surgery, Loyola University Medical Centre, Maywood, Illinois. *Neurosurgery* (1991) Jun, Vol. 28 (6), pp. 904–7. ISSN 0148-396X. The complexity of missile injuries to the cervical spine has increased as the technology that causes these injuries has become more sophisticated. Management requires adaptation of conventional neurosurgical approaches to the cervical spine in an effort to limit neurological deficit and establish stability. We report an unusual case of a 19-year-old man who suffered transoral penetration of the cervical spine by an arrow released by a crossbow at close range. Author.

Trauma history in diagnostic groups of temporomandibular disorders. Pullinger A. G., Seligman D. A. Section of Orofacial Pain and Occlusion, UCLA School of Dentistry. *Oral Surgery, Oral Medicine, Oral Pathology* (1991) May, Vol. 71 (5), pp. 529–34.

Trauma history was studied for association with disease among six diagnostic subgroups of 230 patients with temporomandibular disorder (TMD) from a private practice setting with (1) disk displacement (DD) with reduction, (2) DD without reduction, (3) osteoarthritis (OA) with prior derangement history, (4) primary OA, (5) myalgia only, and (6) subluxation only. Except for subluxation (29 per cent), trauma history typified TMD patient groups 1 to 5 (63 per cent, 79 per cent, 44 per cent, 53 per cent, 54 per cent) (P less than 0.001) compared with 13 per cent and 18 per cent of asymptomatic ($n = 61$) and symptomatic ($n = 161$) student control subjects, and 11 per cent of general dental patients ($n = 150$). TMD groups 2 and 3 differed significantly (P less than 0.05). The high prevalence of trauma in the myalgia-only group complicates the concept of myofascial pain-dysfunction syndrome as solely a stress or centrally mediated disorder. DD without reduction (43 per cent) and with reduction (38 per cent) had the highest prevalences of motor vehicle accident trauma, myalgia and OA groups had less, and subluxation-only cases had none. On the other hand, patients with DD without reduction were also the only group to report multiple trauma (29 per cent), suggesting that although specific traumatic events may seem to precipitate clinical symptoms, they may not always have initiated the problem. Trauma may be both an important cumulative and precipitating event in TMDs. Author.

Association of supraglottic and gingival idiopathic plasmacytosis. Timms M. S., Sloan P. University Department of Otolaryngology, Manchester, UK. *Oral Surgery, Oral Medicine, Oral Pathology* (1991) Apr, Vol. 71 (4), pp. 451–3.

Three cases of gingival plasmacytosis in which laryngeal symptoms eventually developed are reported. Two of the three patients underwent endoscopic biopsy of supraglottic lesions, which proved to be similar to those in the oral cavity. The third patient had supraglottic erythema only and was not subjected to biopsy. Known etiologic factors associated with plasma cell gingivitis were excluded. Treatment with oral and topical steroids resulted in good control of the lesions. Author.

Radiation dose in temporomandibular joint zonography. Coucke M. E., Bourgoignie R. R., Dermaut L. R., Bourgoignie K. A., Jacobs R. J. Department of Orthodontics, Universitair Ziekenhuis, Ghent, Belgium. *Oral Surgery, Oral Medicine, Oral Pathology* (1991) Jun, Vol. 71 (6), pp. 756–62.

Temporomandibular joint morphology and function can be evaluated by panoramic zonography. Thermoluminescent dosimetry was applied to evaluate the radiation dose to predetermined sites on a phantom eye, thyroid, pituitary, and parotid, and the dose distribution on the skin of the head and neck when the TMJ program of the Zonarc panoramic X-ray unit was used. Findings are discussed with reference to similar radiographic techniques. Author.

Detection of human papillomavirus in head and neck tumours with DNA hybridization and immunohistochemical analysis. Tsuchiya H., Tomita Y., Shirasawa H., Tanzawa H., Sato K., Simizu B. Department of Oral Surgery, School of Medicine, Chiba University, Japan. *Oral Surgery, Oral Medicine, Oral Pathology* (1991) Jun, Vol. 71 (6), pp. 721–5.

The presence of human papillomavirus (HPV) DNA in oral, sinus, pharynx and larynx lesions of Japanese patients was studied by Southern blot hybridization under less stringent (25 per cent formamide, 42°C) and stringent (50 per cent formamide, 42°C) conditions. Three samples from 10 benign tumours, and three of 30 malignant tumours, contained HPV DNA or HPV-related sequences. The HPV DNAs harboured in three laryngeal papillomas were HPV-11, -6, and -6 or -11, respectively. The HPV DNA and viral capsid antigens were easily detected by *in situ* hybridization, Western blotting, and peroxidase-antiperoxidase staining. However, neither the typical restriction pattern of HPV DNA nor viral antigen was identified in the malignant tumours, suggesting that subgenomic fragments remained integrated in the host cell DNA. Author.

Human papillomavirus DNA types in squamous cell carcinomas of the head and neck. Watts S. L., Brewer E. E., Fry T. L. Department of Surgery, University North Carolina, Chapel Hill. *Oral Surgery, Oral Medicine, Oral Pathology* (1991) Jun, Vol. 71 (6), pp. 701–7.

Previous studies have found variable evidence suggestive of a role for human papillomavirus (HPV) in squamous cell carcinoma of the head and neck. In this study 49 cases of primary verrucous or squamous cell carcinoma from patients referred to a regional medical centre were examined initially by Southern blot hybridization to detect HPV types 2, 6, 11, 13, 16, 18 and 32. Approximately 60 per cent of carcinomas from certain head and neck sites, particularly the floor of the mouth, tongue, pharynx, piriform sinus, and larynx, were positive for episomal viral DNA or HPV-6, -11, -16, or -18. HPV DNA was found in some multiple tumours from separate sites of the same patient. Integration of viral DNA into the host cell chromosome was likely in a minority of the positive carcinomas, and no novel HPV DNA types were indicated by the hybridization analyses. Subsequently, DNA remaining from 30 of the carcinomas was examined by a more sensitive polymerase chain reaction amplification assay for DNA of HPV-6, -11, -16, and -18. Twenty-seven of the samples were positive for one or more HPV DNA types, with all positive carcinoma samples containing oncogenic HPV-16, or -18 DNAs. Almost all the patients examined were of the middle to older age group with a history of tobacco use. Although HPV infection of oral mucosa may be a frequent occurrence, a possible role for HPV in the multifactorial etiology of head and neck carcinogenesis merits further epidemiologic investigation. Author.

Role of depressive illness in the outcome of treatment of temporomandibular joint pain-dysfunction syndrome. Tversky J., Reade P. C., Gerschman J. A., Holwill B. J., Wright J. Orofacial Pain Clinic, University of Melbourne, Victoria, Australia. *Oral Surgery, Oral Medicine, Oral Pathology* (1991) Jun, Vol. 71 (6), pp. 696–9.

The aim of this study was to assess the role of a depressive illness in the outcome of the treatment of patients with temporomandibular joint pain-dysfunction syndrome. One group was considered psychiatrically normal and the other had a concurrent depressive illness. The latter group was subdivided equally to produce three treatment groups: one undergoing occlusal splint therapy, one receiving antidepressant medication, and the third having a combination of occlusal splint and antidepressant therapy. The results showed clearly that there was a significant difference in response in the non-psychiatric and combined-therapy depressed groups in comparison with the two depressed groups treated either with occlusal splint or with antidepressant therapy. The combined therapy led to resolution of the painful problem and the depression, whereas the single therapies were only partly successful in relieving the pain-dysfunction syndrome. The pre-existing duration of this painful problem did not influence the response to therapy. Author.

Concentration of cefuroxime in serum and middle ear effusion after single dose treatment with cefuroxime axetil. Haddad J. Jr., Isaacson G., Respler D. S., Hart R. W., Yilmaz H. M., Collins J. J., Bluestone C. D. Department of Pediatric Otolaryngology, Children's Hospital of Pittsburgh, PA 15213. *Pediatric Infectious Diseases Journal* (1991) Apr, Vol. 10 (4), pp. 294–8.

Antimicrobial agents play an important role in the treatment of patients with acute otitis media and otitis media with effusion (OME). The study was undertaken to determine the concentrations of cefuroxime in the blood and middle ear effusions (MEE) of children between six and 12 years of age with acute otitis media and chronic OME after a single dose administration of cefuroxime axetil, the ester prodrug of cefuroxime. Cefuroxime axetil (250 mg) was administered two to six hours before either myringotomy for acute otitis media or myringotomy and tube insertion for chronic OME. Blood samples and middle ear aspirates were obtained from 31 children and the samples were analysed by high performance liquid chromatography. Cefuroxime was recovered in measurable concentrations in all serum samples and in 15 (79 per cent) of the 19 MEE specimens analysed. No correlation was seen between cefuroxime MEE concentrations and effusion type, bacteriology or serum concentrations. This study shows that cefuroxime does not penetrate into MEE when OME is present and that therapeutic concentrations can be achieved in some patients. Author.

Sensitivity and specificity of daily tracheal aspirate cultures in predicting organisms causing bacteremia in ventilated neonates. Lau Y. L., Hey E. Special Care Baby Unit, Princess Mary Maternity Hospital, Newcastle-upon-Tyne, United Kingdom. *Pediatric Infectious Diseases Journal* (1991) Apr, Vol. 10 (4), pp. 290–4.

The sensitivity of daily tracheal aspirates in predicting neonatal bacteremia was ascertained from 48 of 354 ventilated neonates who became septic during a four-year period. Fourteen babies (designated group A) had a positive blood culture on the first day of life; 28 infants (group B) and six infants (group C) had bacteremia beyond the first day. Group C infants became septic as a result of intraabdominal pathology. Pathogens isolated from blood were correlated with those from preceding daily tracheal aspirates. The overall sensitivity of tracheal cultures in predicting results of blood cultures was 81 per cent (group A, 71 per cent; group B, 93 per cent; group C, 50 per cent). The specificity of daily tracheal aspirates was ascertained from 28 of 50 ventilated infants who were nonseptic and had negative blood cultures during a six-month period. Only 18 had consistently sterile tracheal aspirates (specificity, 64 per cent). The mean number of days of intubation was 6.6 for the 10 false positive and 3.6 for the 18 true negative. Because of low positive predictive value (0.26) the role of daily tracheal aspirate culture is limited to providing early information regarding potential pathogens when sepsis occurs rather than to identify babies who are going to become septic. Authors.

A comparison of cephalosporins and penicillins in the treatment of group A beta-hemolytic streptococcal pharyngitis: a meta-analysis supporting the concept of microbial copathogenicity. Pichichero M. E., Margolis P. A. Department of Pediatrics, University of Rochester, NY 14642. *Pediatric Infectious Diseases Journal* (1991) Apr, Vol. 10 (4), pp. 275–81.

Although penicillin has been the antibiotic of choice for therapy of Group A beta-hemolytic streptococcal pharyngitis for more than four decades, reports of bacteriologic and clinical treatment failures with penicillin have increased in recent years. We conducted a meta-analysis of 19 studies to examine whether oral cephalosporins were associated with lower failure rates than oral penicillin in the treatment of Group A beta-hemolytic streptococcal pharyngitis. The overall bacteriologic cure rate for penicillin was 84 per cent (95 per cent confidence interval (CI), 82 per cent, 86 per cent) compared with 92 per cent (95 per cent CI, 91 per cent, 94 per cent) among patients treated with cephalosporins (*P* less than 0.0001). The overall clinical cure rate in the penicillin groups was 89 per cent (95 per cent CI, 87 per cent, 91 per cent) compared with 95 per cent (95 per cent CI, 94 per cent, 96 per cent) in the cephalosporin group (*P* less than 0.001). There was no significant difference between the cephalosporins and the penicillins with respect to adverse events. There may be clinical circumstances in which treatment of Group A beta-hemolytic streptococcal pharyngitis with cephalosporins is indicated. Author.

Immediate vs delayed treatment of group A beta-hemolytic streptococcal pharyngitis with penicillin. V. El Daher N. T., Hijazi S. S., Rawashdeh N. M., Al Khalil I. A., Abu Ektaish F. M., Abdel-Latif D. I. Department of Microbiology and Pathology, Faculty of Medicine, Jordan University of Science and Technology, Irbid. *Pediatric Infectious Diseases Journal* (1991) Feb, Vol. 10 (2), pp. 126–30.

Three hundred and six children with probable Group A beta-

hemolytic streptococcal pharyngitis were enrolled in a randomized double blind trial to compare the effects of immediate vs. delayed treatment with oral penicillin V. Among the 229 culture-positive patients, 111 were randomly assigned to receive penicillin V immediately and 118 to receive a placebo for 48 to 52 hrs followed by penicillin V. Patients were evaluated clinically for 48 to 52 hrs following initiation of treatment. The Streptozyne test was used to measure acute to convalescent antibody titre. Both regimens resulted in a greater than 92 per cent cure rate. Early treatment was associated with significantly fewer and milder signs and symptoms on day 3 and a significantly lower rise in the antibody titre. On the other hand we found eight (seven per cent) relapses and 18 (16 per cent) early and 14 (13 per cent) late recurrences in this group; all were significantly higher than the corresponding numbers of two (2 per cent); six (5 per cent) and four (3 per cent), respectively, in the late treatment group. This study shows the beneficial effect of early treatment with penicillin V on the clinical course of Group A beta-hemolytic streptococcal pharyngitis. This study also shows that delayed penicillin treatment may be associated with a lower incidence of subsequent Group A beta-hemolytic streptococcal pharyngitis. Author.

Comparative trial of cefprozil vs. amoxicillin clavulanate potassium in the treatment of children with acute otitis media with effusion. Arguedas A. G., Zaleska M., Stutman H. R., Blumer J. L., Hains C. S. Department of Pediatrics, Memorial Miller Children's Hospital, University of California, Irvine. *Pediatric Infectious Diseases Journal* (1991) May, Vol. 10 (5), pp. 375-80.

A total of 137 children with acute otitis media with effusion were randomly allocated to treatment with cefprozil (30 mg/kg/day divided into two equal doses), an investigational cephalosporin or amoxicillin clavulanate potassium (40 mg/kg/day divided into three equal doses) for 10 days. The most common pathogens obtained from middle ear cavities by tympanocentesis were *Streptococcus pneumoniae* (33 per cent), *Haemophilus influenzae* (19.6 per cent) and *Moraxella catarrhalis* (8.3 per cent). Patients were scheduled for follow-up visits at mid-treatment, at end of therapy and at 30 days. Of the 137 children 122 were evaluable. Five of 60 patients (8.3 per cent) treated with cefprozil and 14 of 62 patients (22.5 per cent) treated with amoxicillin clavulanate potassium were considered therapeutic failures because of persistence of symptoms and/or isolation of the original pathogen or superinfection ($p = 0.05$). Rates of relapse, reinfection and persistent middle ear effusion as documented by tympanogram were comparable in both groups. When persistent middle ear effusion was analysed by pneumatic otoscopy, 64 of 103 affected ears (62.1 per cent) treated with cefprozil and 80 of 105 affected ears (76.1 per cent) treated with amoxicillin clavulanate potassium were abnormal ($p = 0.04$). Loose stools were more common in children treated with amoxicillin clavulanate potassium than in children treated with cefprozil ($p = 0.0004$). Based on the efficacy results from this study, the

lower gastrointestinal side effects and the convenience of twice-a-day dosing, we believe that cefprozil in a dosage of 30 mg/kg/day divided every 12 h represents a potential alternative for the treatment of acute otitis media with effusion in children. Author.

Post-traumatic external nasal neuralgia—an often missed cause of facial pain? Golding-Wood D. G., Brookes G. B. National Hospital for Nervous Diseases, London, UK. *Postgraduate Medical Journal* (1991) Jan, Vol. 67 (783), pp. 55-6.

Pain about the bridge of the nose is often a diagnostic dilemma. There is an important recognizable subgroup who may, as a consequence of involvement of the external nasal nerve in nasal injury, exhibit neuralgic pain after a latent interval. Temporary relief by anaesthesia can be achieved and cure is possible by division of the anterior ethmoidal nerve. This rare cause of facial pain is presented using two illustrative cases. Author.

Dehiscent temporomandibular joint. Weissman J. L., Hirsch B. E., Chan K., Tabor E. K., Curtin H. D. Department of Radiology, University of Pittsburgh School of Medicine, PA 15213. *Radiology* (1991) Jul, Vol. 180 (1), pp. 211-3.

The appearance of an acute effusion in a well-pneumatized temporal bone directs attention to the nasopharynx and skull base. Two patients are described in whom dehiscence of the temporomandibular joint allowed herniation of the contents of the joint posteromedially, where they obstructed the middle ear entrance of the eustachian tube, the protympanum. This is, to the authors' knowledge, a previously unreported cause of an acute middle ear and mastoid effusion. Author.

Air in the temporomandibular joint fossa: CT sign of temporal bone fracture. Betz B. W., Wiener M. D. Department of Radiology, Duke University Medical Centre, Durham, NC 27710. *Radiology* (1991) Aug, Vol. 180 (2), pp. 463-6.

Temporal bone fractures can be difficult to detect clinically and radiographically. Air is sometimes present in the glenoid fossa of the temporomandibular joint (TMJ) at computed tomography (CT) of acute basilar skull fractures. This study evaluated TMJ fossa air as a sign of temporal bone fracture. Initial CT scans of the head in 114 patients with a diagnosis of basilar skull fracture at discharge were retrospectively reviewed. TMJ fossa air was present in 23 of 114 patients (20.2 per cent) and was bilateral in three patients. Only temporal bone fractures were significantly (P less than 0.001) associated with TMJ fossa air. Temporal bone fractures were observed at CT in 23 of 26 cases of TMJ fossa air, but in three of 26 cases, TMJ fossa air was the only CT sign of clinically apparent temporal bone fractures. TMJ fossa air is associated with acute temporal bone fracture and may be the only CT sign of an otherwise inconspicuous temporalis bone fracture. Author.