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Abstract Selection

Lymph node metastases in the neck from unknown primary tumours. Jakobsen, J., Aschenfeldt, P., Johansen, J., Jorgensen, K. Department of Otorhinolaryngology, Odense University Hospital, Denmark. *Acta Oncologica* (1992), Vol. 31 (6), pp. 653–5.
During a 12-year period a total of 203 patients were referred to the oncologic centre of Odense with lymph node metastases in the neck. Routine examinations on admission failed to detect the primary tumour in 37 patients. During follow-up, the primary was revealed in 18 of these patients, and in a further eight cases it was found at autopsy. The primary was most often located in the head and neck region with a possibility of curative therapy. Patients with small neck node metastases responded well to treatment with neck dissection and radiotherapy, resulting in a five-year crude survival rate of 53 per cent. Author.

Allergenic pollens and pollinosis in Italy: recent advances. Negrini, A. C., Arobba, D. Servizio Autonomo di Allergologia, Ospedale S. Martino, Genova, Italy. *Allergy* (1992) August, Vol. 47 (4 Pt 2), pp. 371–9.
The authors have mapped the occurrence of allergenic pollens throughout Italy and defined their most common clinical symptoms. To obtain an accurate aerobiological and clinical picture of such a geographically complex country as Italy, a detailed investigation was carried out involving 80 data-gathering stations and 40 clinical centres nationwide. Three main pollination periods can be distinguished: winter-pre-spring (January to March) for Betulaceae, Corylaceae, Cupressaceae, Salicaceae and Ulmaceae: spring-summer (April to June) for Gramineae, Urticaceae, Oleaceae, Plantago, Fagaceae, Pinaceae and Polygonaceae, and summer-autumn (August to September) for Urticaceae, Compositae and Chenopodiaceae. Examination of 49,660 patients affected by pollinosis (conjunctivitis, rhinitis, asthma, with positive skin tests or IgE-specific serum determination: RAST, ELISA) throughout Italy revealed sensitivity to Gramineae in 64.6 per cent, to Parietaria in 36.7 per cent to Olea in 15.8 per cent, to Compositae in 13.2 per cent, to Betulaceae-Corylaceae in 7 per cent and to Fagaceae-Cupressaceae-Plantago in 4%–10%; marked regional variations were observed. The patients suffered from rhino-conjunctivitis (55.7 per cent), rhino-conjunctivitis plus asthma (31.6 per cent) and asthma (12.7 per cent). In monosensitized individuals, Parietaria was seen to be the main cause of the asthmatic syndrome (though our preliminary data also implicate Olea) followed by Gramineae. Author.

Constitutional translocation t(4; 22) (q12; q12.2) associated with neurofibromatosis type 2. Arai, E., Ikeuchi, T., Karasawa, S., Tamura, A., Yamamoto, K., Kida, M., Ichimura, K., Yuasa, Y., Tonomura, A. Department of Cytogenetics, Tokyo Medical and Dental University, Japan. *American Journal of Medical Genetics* (1992) September 15, Vol. 44 (2), pp. 163–7.
We report on a female patient with bilateral acoustic neurinomas and other tumours in the central nervous system (neurofibromatosis type 2: NF2) and the constitutional translation, t(4; 22) (q12; q12.2). The precise identification of the translocation breakpoint (q12.2) on chromosome 22 implies the refined localization of a gene responsible for NF2, and would provide a clue to its molecular characterization and to the isolation of the gene. Chromosomes of a paraspinal neurinoma from the patient were also analyzed, and the same karyotype as seen in cultured peripheral lymphocytes was found. The patient's father was also a carrier of the translocation, but he had no clinical symptoms of NF2, nor did other relatives. Several explanations are offered for the different expression of the translocation between the patient and her father. Author.

An evaluation of the nasolabial angle and the relative inclinations of the nose and upper lip. Fitzgerald, J. P., Nanda, R. S., Currier, G. F. Department of Orthodontics, University of Oklahoma College of Dentistry, Oklahoma City. *American Journal of Orthodontics and Dento-Facial Orthopedics* (1992) October, Vol. 102 (4), pp. 328–34.
The purpose of this study was to develop a consistent and reproducible method of constructing a nasolabial angle that would also permit an evaluation of the relative inclination of the lower border of the nose and the upper lip, as well as their relationship to each other. Comparison of repeated individual measurements of soft tissue profile landmarks on 15 subjects, as completed by four orthodontists, revealed that the proposed method of constructing the nasolabial angle was consistent and reproducible by the same orthodontist and among different orthodontists. Normative data for the three nasolabial parameters were produced from a sample of 104 young white adults determined by the authors to have well-balanced faces. Mean and standard deviation values from this pooled sample demonstrated a lower border of the nose to Frankfort horizontal plane angle at 18 degrees ± 7 degrees, upper lip to Frankfort horizontal plane angle 98 degrees ± 5 degrees, and nasolabial angle 114 degrees ± 10 degrees. No statistically significant difference was demonstrated between the values for men and women in this study, but the women did have a slightly larger nasolabial angle. A linear comparison of the three nasolabial parameters with six skeletal measurements revealed no significant relationship between the soft tissue profile of the nasolabial region and the underlying skeletal relationships. Author.

The effect of corticosteroid-induced osteoporosis on orthodontic tooth movement. Ashcraft, M. B., Southard, K. A., Tolley, E. A. Department of Orthodontics, University of Iowa, Iowa City. *American Journal of Orthodontics and Dento-Facial Orthopedics* (1992) October, Vol. 102 (4), pp. 310–9.
The purpose of this research was to study the effect of corticosteroid-induced osteoporosis on orthodontic tooth movement and relapse. Sixteen three-month-old New Zealand white rabbits were divided into four equal groups, two treatment and two control. All treatment rabbits were administered daily injections of 15 mg/kg cortisone acetate for four days before and during the experimental period. An orthodontic appliance delivering a mesial force of four ounces was placed on the maxillary left first molar of all animals. For all groups, measurements of active tooth movement were made after 4, 7, 11, and 14 days. For two of the groups, appliances were removed on day 14, and additional measurements of relapse were made through day 21. With the use of radiodensitometric readings of the humerous bone and histology of the maxilla, osteoporosis was demonstrated in the treatment animals. Mean incremental and cumulative active tooth movement was three to four times greater ($P<0.0001$) in the treatment rabbits than in the controls. The treatment group in which relapse was measured demonstrated 100 percent relapse on day 18, whereas the control group relapsed at a much lesser rate through day 21 and never achieved 100 per cent relapse. Histologic findings appeared to support tooth movement results. In conclusion, the results of this study indicate that rabbits subjected to corticosteroid-induced osteoporosis undergo significantly more rapid orthodontic tooth movement and subsequent relapse than control animals. Author.

Localized carcinoma of the external ear is an unrecognized aggressive disease with a high propensity for local regional recurrence. Yoon, M., Chougule, P., Dufresne, R., Wanebo, H. J. Brown University Medical School, Providence, Rhode Island. *American Journal of Surgery* (1992) December, Vol. 164 (6), pp. 574–7.
Management problems in patients with recurrent squamous cell carcinoma (SCC) of the external ear (pinna) have prompted a review of the management and treatment outcomes of patients who present with localized disease. Forty patients were seen over a 15-year period (1972 to 1991): Thirty-six were men, and four were women,

with an age range from 43 to 93 years (average age: 71 years). Presenting TNM status was stage 0 in two patients, stage I in 15 patients, stage II in 13 patients, stage III in two patients, stage IV in four patients, and unknown stage in four patients. Thirty-six patients had clinically negative nodes at presentation (NO), and four had palpable nodes (N+). The primary treatment was local excision in 13 patients, Mohs' micrographic surgery in 16 patients, local excision plus external beam radiotherapy in four patients, and radical resection (parotidectomy/neck dissection/mastoidectomy) with or without radiotherapy in five patients. Two patients with stage IV disease died after diagnosis and prior to treatment, and two other patients with stage IV disease received palliative chemotherapy. Twenty patients developed recurrence from two months to eight years. It included nine local recurrences, eight regional recurrences (parotid/neck/mastoid), and three distant metastases (lung or brain). After treatment of the recurrences in 20 patients, eight are alive 15 months to 16 years later, two patients died of other diseases, and 10 patients died of SCC. The recurrences were managed by reoperation, radiotherapy, or chemotherapy. From the results of this study, we conclude that localized carcinoma of the external ear has a high propensity for local and regional failure and merits more aggressive treatment of the primary lesion and elective treatment of the regional lymph nodes and parotid gland in high-risk patients. Author.

Results of surgical treatment of T3 and T4 tumours of the oral cavity and oropharynx. Pinsolle, J., Demeaux, H., Coustal, B., Siberchicot, F., Caudry, M., Maire, J. P., Michelet, F. X. Department of Maxillofacial and Plastic Surgery, Centre Hospitalier Universitaire de Bordeaux, France. *American Journal of Surgery* (1992) December, Vol. 164 (6), pp. 587–91.
The combined use of surgery and radiotherapy is commonly accepted as the most effective treatment for locally advanced head and neck cancers. T3 and T4 tumours of the oral cavity and oropharynx often necessitate extensive local surgery. From 1981 to 1988, 199 patients with T3 and T4 tumours of the oral cavity and oropharynx were treated. One hundred seventeen patients underwent surgery plus postoperative radiotherapy; 78 had flap reconstructions. This series is extremely homogeneous because surgery was always performed by two surgeons, whereas rradiotherapy was the responsibility of the same physician. The results of this study show a 96 per cent local control rate at the end of treatment among the patients with combined treatment. The average time by which hospitalization was prolonged due to surgery was 29 days. The type and delay of recurrences and survival in relation with node involvement are also discussed. Extensive surgery in association with radiotherapy remains a reliable treatment in such patients. Author.

Phorbol dibutyrate plus ionomycin improves the generation of cytotoxic T cells from draining lymph nodes of patients with advanced head and neck cancer. McGrath, P. C., Hamby, L.S., Freeman, J. W. Department of Surgery, University of Kentucky Medical Centre, Lexington 40536–0084. *American Journal of Surgery* (1992) December Vol. 164 (6), pp. 610–4.
Fifty-one cervical nodes from 19 patients with advanced head and neck cancer were stimulated with phorbol dibutyrate and ionomycin (PDBu + Io) to determine the effect of such stimulation on the generation of cytotoxic T cells and whether this stimulation could bypass the need for autologous tumour stimulation. Lymphocytes stimulated with PDBu + Io demonstrated a sixfold greater in vitro expansion and significantly increased DNA synthesis. Whereas fresh lymphocytes displayed no cytotoxicity, stimulation with PDBu + Io and culture in interleukin-2 (IL-2) led to significant cytotoxicity equivalent to that of lymphocytes stimulated with autologous tumour and IL-2. T cells with the greatest cytotoxicity were generated from patients with nodal metastases. In patients with stage IV tumours, effector cells demonstrating greater lysis of natural killer-resistant targets (Daudi cells) were associated with higher rates of recurrence (50 per cent versus 12 per cent, respectively, $P<0.001$). Stimulation with PDBu + Io augments growth and proliferation of lymphocytes from draining lymph nodes and preserves cytotoxicity without the need for autologous tumour. Excluding the need for antigenic stimulation by autologous tumour may prove useful in adoptive immunotherapy procedures. Author.

Comparison of the rectus abdominis free flap with the pectoralis major myocutaneous flap for reconstructions in the head and neck. Kroll, S. S., Reece, G. P., Miller, M. J., Schusterman, M. A. Department of Reconstructive and Plastic Surgery, University of Texas M. D. Anderson Cancer Centre, Houston 77030. *American Journal of Surgery* (1992) December, Vol. 164 (6), pp. 615–8.
The pectoralis major myocutaneous flap (PMMF) is often used in the reconstruction of large head and neck defects. Unfortunately, its use is associated with a high incidence of minor complications, can distort the contour of the neck, and may cause significant donor site deformity, especially in women. This study compared 30 patients with major head and neck cancer-related defects who underwent reconstruction with a rectus abdominis free flap (RAFF) with 39 patients with similar defects who underwent reconstruction with the PMMF. The complication rate found in the RAFF group (13 per cent) was significantly lower than that found in the PMMF group (44 per cent; $P = 0.0145$). Flap necrosis was found in 10 per cent of the PMMF group, whereas none was found in the RAFF group. The aesthetic outcome was also better in patients who had reconstructions with the RAFF. We conclude that, for most major head and neck defects, reconstruction methods that utilize the RAFF and other free tissue transfer techniques are preferable when the requisite equipment and expertise are available. Author.

Postlaryngectomy quality-of-life dimensions identified by patients and health care professionals. Mohide, E. A., Archibald, S. D., Tew, M., Young, J. E., Haines, T. Department of Clinical Epidemiology and Biostatistics, School of Nursing, McMaster University, Hamilton, Ontario, Canada. *American Journal of Surgery* (1992) December, Vol. 164 (6), pp. 619–22.
We compared the quality-of-life (QOL) dimensions after laryngectomy in patients with advanced larynx or pharynx cancer that were elicited from 20 consecutive laryngectomy patients and 20 health care professionals working in the Regional Head and Neck Oncology Service. Subjects in both groups were asked to identify important QOL items after recovery from laryngectomy and to rank and rate each on a vertical visual analogue scale. Health care professionals ranked impaired communication and self-image/self-esteem as the two most important QOL dimensions, whereas patients ranked the physical consequences of surgery, e.g. tracheal mucous production, and interference with social activities as the two most important items. The results indicate that the responses of health care professionals do not fully correlate with patient priorities. These findings are relevant to researchers developing treatment-specific QOL measures and to health care professionals when presenting treatment options to patients. Author.

Temporal bone resections for carcinoma of the middle ear and the external ear canal. Tiwari, R., Feenstra, L., Karim, A. Department of Otolaryngology Head and Neck Surgery, Free University Hospital, Amsterdam, The Netherlands. *American Journal of Surgery* (1992) December, Vol. 164 (6), pp. 648–50.
Petrosectomy has been used in the management of carcinoma of the external ear canal and the middle ear for the last 45 years. In recent years, there have been conflicting reports; some authors advocate a conservative approach, whereas others support an ultraradical approach. Most retrospective studies report patients who have been treated with radiotherapy or surgery as having undergone the primary modality depending on where the patient first presented. No selection criteria seem to have been employed. Although radiotherapy was used post-operatively, the problems of wound healing were not addressed. This study presents our experience with temporal bone resection as described by Lewis and shows that, in combination with patient selection and proper choice of incision, reconstruction and timely postoperative radiotherapy can achieve better results, and the patient's qualify of life can be perserved. Author.

Prognostic factors and management considerations in patients with cervical metastases of thyroid cancer. Coburn, M. C., Wanebo, H. J. Department of Surgery Brown University School of Medicine, Providence, Rhode Island. *American Journal of Surgery* (1992) December Vol. 164 (6), pp. 671–6.
Included among the controversies involving thyroid cancer are the risk factors and treatment decisions in patients with nodal metastases. We have reviewed selected clinical, pathologic, and therapeutic parameters in patients who present with cervical node metastases and related these parameters to disease outcome. There were 108 patients (68 women, 40 men), who had a mean age of 54 years. Univariate analysis showed a significantly increased risk of recurrence

to be associated with the presence of primary tumour invasion (vascular, lymphatic, nerve, or muscle), the age and sex of the patient, the presence of mediastinal nodes, and adjuvant treatment with iodine 131. The presence of tumour invasion, the age and sex of the patient, and the presence of mediastinal nodes were significantly associated with higher rates of recurrence when tested by multivariate analysis. The five- and 10-year disease-free survival rates were 76 per cent and 72 per cent, respectively, with a mean follow-up of 86 months. A comparison of recurrence and survival rates in thyroid cancer patients who were either node positive or node negative during the same 10-year period (152 patients) showed no statistically significant differences. However, node-positive patients with the risk factors of tumour invasion, age over 45 years, and positive mediastinal nodes had more aggressive disease. Although thyroid cancer patients with nodal metastases generally have a good prognosis, high-risk subgroups have been identified who may benefit from a more aggressive therapeutic and follow-up approach. Author.

Influence of hearing of 22 G Whitacre and 22 G Quincke needles. Sundberg, A., Wang, L. P., Fog, J. Anaesthetic Department, Eksjo-Nassjo Hospital, Sweden. *Anaesthesia* (1992) November, Vol. 47 (11), pp. 981–3.
Audiograms were performed pre-operatively and two days post-operatively in 48 patients given spinal anaesthesia for transurethral resection of the prostate. Hearing levels were examined at 1000 Hz and below. Either 22 G standard design (Quincke) needles (n = 25) or 22 G pencil-point design (Whitacre) needles (n = 23) were used. Hearing loss of 10 dB or more at two or more frequencies were observed in six of 25 patients in the Quincke group and in two of 23 patients in the Whitacre group. The mean hearing level was more reduced in the Quincke group. The shape of the tip of the spinal needle seems to be of some importance to the effects on hearing level that may occur after spinal anaesthesia. Author.

Temporal lobectomy for uncontrolled seizures: the role of positron emission tomography. Theodore, W. H., Sato, S., Kufta, C., Balish, M. B., Bromfield, E. B., Leiderman, D. B. Clinical Epilepsy Section, National Institute of Neurological Disorders and Stroke, Bethesda, MD 20892. *Annals of Neurology* (1992) December, Vol. 32 (6), pp. 789–94.
We evaluated the role of positron emission tomography (PET) with (18F) deoxyglucose (FDG) (FDG–PET) for planning surgery in 53 patients who had temporal lobectomy for uncontrolled seizures at National Institutes of Health from 1981 to 1990. Investigators blinded to PET data used results of telemetered video-electroencephalographic ictal monitoring and other standard criteria to decide whether subdural electrodes (22 patients, i.e., the 'invasive' group) should be implanted or surgery performed. PET scans were analyzed using a standard regional template. Mean lateral but not mesial temporal asymmetry was significantly higher in patients who became seizure free (P<0.03). Patients with > or = 15 per cent hypometabolism were significantly more likely to be seizure free in the entire study population and the invasive subgroup. Visual identification of hypometabolism was less accurate. When a clear temporal ictal surface electroencephalographic focus was present, FDG–PET provided less additional information. FDG–PET may be particularly valuable if the surface electroencephalographic scan is nonlocalizing. In addition to helping to identify the seizure focus, it may allow limitation of invasive electrode placement to those necessary for functional mapping. When PET is used to identify epileptic foci, quantitative measurements of asymmetry should be made. Author.

Comparison of loratadine and terfenadine in allergic seasonal rhinoconjunctivitis with emphasis on nasal stuffiness and peak flow. Olsen, O. T., Nuchel-Petersen, L., Hoi, L., Lorentzen, K. A., Hindberg-Rasmussen, W., Svendsen, U. G. Department of Pulmonary Medicine and Allergology, Copenhagen County University Hospital, Gentofte, Denmark. *Arzneimittelforschung* (1992) October, Vol. 42 (10), pp. 1227–31.
Non-sedating antihistamines have been used in the treatment of allergic rhinoconjunctivitis. Recommended dosage of loratadine (CAS 79794-75-5) is 10 mg once daily, whereas terfenadine (CAS 50679-08-8) until recently has been recommended as 60 mg twice daily. One hundred and five patients took part in this double-blind three-week controlled study comparing loratadine 10 mg once daily to terfenadine 120 mg once daily. Patient's daily symptom score and physician's assessment of symptoms, treatment effect and anterior rhinoscopy were evaluated as well as an objective parameter, nasal peak flow. In addition nasal peak flow was compared to patient's symptom score of stuffiness. A significant treatment effect in both treatment groups was found but there was no statistically significant difference between the two groups. Correlation between patient's feeling of stuffiness and nasal peak flow was significant. It is concluded that loratadine 10 mg once daily is as effective as terfenadine 120 mg once daily in controlling allergic rhinoconjunctivitis and that patients' feeling of stuffiness correlates well to nasal peak flow. Author.

The effects of chronic hypoxia on human auditory system sensitivity. Carlile, S., Paterson, D. J. University Laboratory of Physiology, Oxford, England. *Aviation, Space and Environmental Medicine* (1992) December, Vol. 63 (12), pp. 1093–7.
We have examined the effects of prolonged periods of hypoxia produced at high altitudes on the latency of the auditory brain-stem evoked response (ABER) in nine subjects at around sea level, 3,500 m, and 4, 370 m. Following an ascent from 1,300 m to 3,500 m over 24 h, the mean blood 02 saturation fell to 86.5 ± 1.2 per cent (± S.E.M.) and was associated with a mean proliferation of latency of wave V of the ABER of 0.34 ± 0.10 ms (P = 0.011 two-tailed paired t-test). Using the stimulus-level/response latency relation determined at around sea-level for each subject, this prolongation of wave V corresponded to a mean reduction in sensitivity of 9.1 dB ± 1.6 dB. Over a period of 72 h, blood 02 saturation improved slightly (mean 88.1 per cent ± 1.8 per cent) and mean wave V latency returned to control values. A second rapid ascent to 4,370 m reduced blood 02 to below prerecovery levels (82.5 per cent ± 1.7 per cent), but in this case there were no significant changes in auditory sensitivity (P = 0.79 two-tailed paired t-test). These data show that mild hypoxia results in an initial decrease in auditory sensitivity. However, the recovery of sensitivity with more prolonged exposure suggests that the auditory system can compensate for chronic mild hypoxia. Author.

Supernumerary nostrils. Chen, M. T., Yeong, E. K. Department of Surgery, National Taiwan University Hospital, Taipei. *British Journal of Plastic Surgery* (1992) October, Vol. 45 (7), pp. 557–8.
We encountered a rare case of four asymmetrical nostrils 10 years ago. The upper nostrils looked normal while the lower appeared as sinuses. The lower pair communicated with the nasal cavities but the upper pair was obliterated. There was a thick columella and an elongated continuous nasal septum separating the nasal cavities. The left nostril sill was thicker and situated higher than its counterpart. When the patient was three months old, the lower sinuses were trimmed and closed primarily, while the upper pair was perforated and kept patent with a silicone tube covered with a split thickness skin graft. Four years later, a revision was performed. Stages of operation were preferred as nasal growth was concerned. The result was satisfactory following 10 years of observation. Author.

Diagnostic role of brain-stem auditory evoked potentials in neurobrucellosis. Yaqub, B. A., Kabiraj, M. M., Shamena, A., Al-Bunyan, M., Daif, A., Tahan, A. Division of Neurology and Neurophysiology, King Khalid University Hospital, Riyadh, Saudi Arabia. *Electroencephalography and Clinical Neurophysiology* (1992) November–December, Vol. 84 (6), pp. 549–52.
Evoked potential audiometry and brain-stem auditory evoked potentials were evaluated in 15 patients with systemic brucellosis in whom brucella meningitis was suspected clinically. In eight patients cerebrospinal fluid (CSF) was abnormal with high brucella titre, and evoked potentials were abnormal in all of them. In seven patients the CSF was normal and evoked potentials were also normal. Brain-stem auditory evoked potential abnormalities were categorized into four types: (1) abnormal wave I, (2) abnormal wave V, both irreversible, (3) prolonged I–III interpeak latencies, and (4) prolonged I–V interpeak latencies, both reversible. These findings are of important diagnostic value and correlates well with the clinical features, aetiopathogenesis and final outcome. Author.

Major salivary gland function in patients with radiation-induced xerostomia: flow rates and sialochemistry. Valdez, I.H., Atkinson, J. C., Ship, J. A., Fox, P. C. Clinical Investigations and Patient Care Branch, National Institute of Dental Research, National Institutes of Health, Bethesda, MD 20892. *International Journal of*

Radiation, Oncology, Biology and Physics (1993) January, Vol. 25 (1), pp. 41–7.
Radiation therapy for cancer of the head and neck region often causes salivary gland dysfunction and xerostomia. Several reports suggest that the submandibular/ sublingual (SM/SL) glands may be less radiosensitive than the parotid. The purpose of this study was to evaluate differential radiation effects on the major salivary glands. Fifty patients with radiation-induced xerostomia were evaluated (33 males, 17 females; mean age 52.7). The average total tumour dose was 6034 cGy. Major salivary gland function was compared with that of 50 non-irradiated controls. Salivary flow rates included unstimulated and stimulated flows of both the parotid and SM/SL glands. Sialochemical analyses included total protein, lysozyme, lactoferrin, sodium, chloride, and potassium. All four measures of salivary flow were significantly reduced in patients as compared to controls ($P = 0.0001$). Like the parotid, submandibular/sublingual gland dysfunction appears to be radiation dose- and field-dependent. Patients in the lowest radiation dose quartile (< or = 5000 cGy) had significantly increased salivary flow compared to those in the highest dose quartile (> or = 6800 cGy; $P = 0.025$). Glands that were partially irradiated were more likely to have some residual function than fully irradiated glands ($P = 0.003$). Lactoferrin content was increased in parotid saliva of radiation patients ($P = 0.0001$). Chloride content was significantly increased also (P 0.0001). The SM/SL glands are clearly dysfunctional in post-irradiation xerostomia patients compared to controls, in terms of both flow rates and sialochemistry. Author.

Relative clinical influence of tumour dose versus dose per fraction on the occurrence of late normal tissue morbidity following larynx radiotherapy (see comments). Slevin, N. J., Vasanthan, S., Dougal, M. Department of Clinical Oncology and Radiotherapy, Christie Hospital and Holt Radium Institute, Withington, Manchester, England. *International Journal of Radiation, Oncology, Biology and Physics* (1993) January, Vol. 25 (1), pp. 23–8. Comment in *International Journal of Radiation, Oncology, Biology and Physics* (1993) January, 25 (1), 149–50.
A study was made of 242 cases of T2 No glottic cancer treated by definitive radiotherapy over a 15-year period. The aim was to examine the relative influences of tumour biological dose (indicated by locoregional control) versus dose per fraction on the occurrence of late normal tissue effects; in addition, the impact of cord mobility on outcome was analyzed. The five-year survival corrected for intercurrent deaths was 84 per cent and local disease-free (larynx and/or nodes) survival was 76 per cent. Using Cox regression analysis the only factor significant for local control was cord mobility ($P<0.0001$) which also had an effect on overall survival ($P<0.0001$); subdivision of T2 glottic staging should be reintroduced into staging classifications. It is evident that comparison of clinical results between centres is potentially prejudiced by an array of factors relating not only to fractionation differences but also variation in clinical and organizational aspects of care. Nevertheless, using other using other published data for comparison, it seems likely that the serious morbidity rate of 4.1 per cent seen in this study is due in some part to the high tumour biological dose (resulting in high local control). The influence of fraction size was difficult to discern as equivalence in local control was not seen in the data chosen. Author.

Postoperative radiation therapy for squamous cell carcinomas of the oral cavity and oropharynx: impact of therapy on patients with positive surgical margins. Zelefsky, M. J., Harrison, L. B., Fass, D. E., Armstrong, J. G., Shah, J. P., Strong, E. W. Department of Radiation Oncology, Memorial Sloan-Kettering Cancer Centre, New York, NY 10021. *International Journal of Radiation, Oncology, Biology and Physics* (1993) January, Vol. 25 (1), pp. 17–21.
PURPOSE: The presence of a positive or close margin after resection of a squamous cancer of the head and neck is associated with a significant risk of local recurrence. To determine the efficacy of postoperative radiation therapy for patients with advanced oral cavity and oropharyngeal cancers with inadequate margins of resection, the present retrospective analysis was undertaken. METHODS AND MATERIALS: One hundred and two patients were treated with surgery and postoperative radiation therapy for advanced squamous cell carcinomas of the oral cavity and oropharynx. The anatomic subsites treated include oral tongue ($n = 29$), floor of mouth ($n = 22$), base of tongue ($n = 31$) and tonsillar fossa ($n = 20$). Twenty-five patients (25 per cent) had positive margins, 41 patients (40 per cent) had close margins (< or = 0.5 cm from the surgical margin) and 36 (35 per cent) had negative margins. The median radiation dose was 6000 cGy. RESULTS: With a median follow-up of seven years, the actuarial control rate for patients with positive, close and negative margins was 79 per cent, 71 per cent and 79 per cent, respectively. When postoperative doses of > or = 60 Gy were delivered to patients with postive/close margins (excluding patients with oral tongue lesions), the seven-year actuarial control was 92 per cent. In similar patients receiving <60 Gy, the actuarial control was 44 per cent ($P = 0.0007$). Compared to other anatomic subsites, inferior control rates were obtained with oral tongue lesions. For this subsite, the control rates for positive, close, and negative margins were 50 per cent, 62 per cent and 69 per cent respectively. CONCLUSION: We conclude that excellent local control can be achieved with postoperative radiation therapy, despite the presence of inadequate margins of resection, when doses of > or = 60 Gy are used. Future strategies must be directed at further improving these results in patients with oral tongue lesions. Author.

Indirect evidence of nasal inflammation assessed by titration of inflammatory mediators and enumeration of cells in nasal secretions of patients with chronic rhinitis. Knani, J., Campbell, A., Enander, I., Peterson, C. G., Michel, F. B., Bousquet, J. Clinique des Maladies Respiratoires, Hopital l'Aiguelongue, Centre Hospitalier Universitaire, Montpellier, France. *Journal of Allergy and Clinical Immunology* (1992) December, Vol. 90 (6 Pt 1), pp. 880–9.
Pathophysiologic mechanisms of perennial rhinitis are poorly understood. The characterization of inflammation was studied in nasal lavage of patients with perennial rhinitis by the enumeration of cells involved in the allergic inflammation and the measurement of six mediators released in nasal secretions to determine whether some mediators were relevant for the etiologic diagnosis and the occurrence of symptoms. Ten healthy subjects and 57 patients with perennial rhinitis were placed into four groups according to the symptoms they presented at the time of the study and the origin of the allergy. Allergy was characterized by the history, skin prick tests to standardized allergens, and RAST. Eosinophil protein X (EPX), tryptase, histamine, myeloperoxidase, prostaglandin D2, and leukotriene C4/D4 (LTC4/D4) were measured in nasal lavage by enzyme assay or radioimmunoassay. Eosinophils and neutrophils were enumerated after cytocentrifugation of the lavage fluid and May Grunwald Giemsa staining. Tryptase, myeloperoxidase and EPX but not histamine levels were increased in all four patient groups. Eosinophils, LTC4/D4, and prostaglandin D2 were significantly ($P<0.001$, $P<0.03$, and $P<0.01$) increased in allergic and symptomatic patients. EPX was significantly increased in symptomatic allergic and nonallergic patients. This study suggests the involvement of mast cells, neutrophils, and eosinophils, but the latter cells appear to have a more prominent role. The importance of EPX and LTC4/D4 in the characterization of chronic symptomatic rhinitis was also observed. Author.

Binaural masking level differences in infants with and without otitis media with effusion. Hutchings, M. E., Meyer, S. E., Moore, D. R. Laboratory of Physiology, Oxford University, UK. *Hearing Research* (1992) November, Vol. 63 (1–2), pp. 71–8.
The binaural masking level difference (MLD) was measured in two groups of infants (aged 7–10 months) who either had or did not have a documented history of otitis media with effusion (OME). Subjects were trained to detect a 500 Hz signal (either in or out-of-phase between the ears) against an in-phase, narrow band noise masker centred at 500 Hz. Non-OME infants had elevated masked thresholds and reduced MLDs compared with normal-hearing older (7–12 years) children and adults (20–27 years). OME infants also had elevated masked thresholds and reduced MLDs but, in contrast to studies using older subjects, their results were similar to those of the non-OME infants. These results suggest that, during at least the first year of life, infants are disadvantaged compared with adults or children when listening in noisy environments. They also suggest that OME does not further compromise infants' ability to detect sounds in those environments. Author.

A nasal trumpet orthosis to maintain nares openings and respiratory function for patients with facial burns: a case report. Johnson, J., Candia, J., LaTrenta, G., Madden, M. R., Goodwin, C. W., Finkelstein, J. Department of Rehabilitation Medicine, New York

Hospital-Cornell Medical Centre, NY 10021. *Journal of Burns Care and Rehabilitation* (1992) November–December, Vol. 13 (6), pp. 677–9.
Management of facial burns is a challenge to the burn team because it may lead to functional and cosmetic compromise. Severe scarring of the nares may lead to nasal occlusion. This article introduces a method of maintaining nasal patency that allows respiratory exchange through the use of a custom-fabricated, semirigid tubular orthosis. The technique for fabrication is reviewed, and the use of the device is addressed through a case report. This inexpensive, readily available device is useful in preventing nasal occlusion that results from scar formation. Author.

A pressure prevention device for burned ears. Jordan, M. H., Gallagher, J. M., Allely, R. R., Leman, C. J. Burn Centre, Washington Hospital Centre, Washington, DC 20010. *Journal of Burns Care and Rehabilitation* (1992) November–December, Vol. 13 (6), pp. 673–7.
Full-thickness burns to the external ear can produce loss of skin and cartilage and can result in severe cosmetic deformity. Even partial-thickness burns render the ear vulnerable to tissue loss if the helix is subjected to pressure from pillows, dressings, or straps that are used to secure endotracheal tubes. Because of the incidence of burned ear deformities and the difficulty in reconstructing the external ear, an ear protection device has been designed. The bilateral ear protection device, referred to as 'headgear', is fitted to all patients in the burn centre who require intubation for an inhalation injury; it is worn continuously until extubation. During a 15-month period 39 consecutive critically burned patients were fitted with the headgear because of the need for ventilator support and/or for protection of the burned ear(s). Pressure necrosis of ear tissue was prevented in all 33 survivors. Author.

Aspergillus quadrilineatus, a new causative agent of fungal sinusitis. Polacheck, I., Nagler, A., Okon, E., Drakos, P., Plaskowitz, J., Kwon-Chung, K. J. Department of Clinical Microbiology, Hadassah Medical Centre, Jerusalem, Israel. *Journal of Clinical Microbiology* (1992) December, Vol. 30 (12), pp. 3290–3.
Aspergillus quadrilineatus was found to be the etiologic agent of pansinusitis in a patient suffering from acute nonlymphoblastic leukemia and who had undergone allogeneic bone marrow transplantation. A. quadrilineatus was cultured from biopsy specimens of the maxillary sinus, and tissue sections with fungal stains showed a necrotic area containing dichotomously branching septate hyphae, which is morphologically consistent with Aspergillus species. The patient was successfully treated with a combination of surgical debridement, granulocyte transfusions, and intravenous administration of amphotericin B-cholesterol sulfate colloidal dispersion. This is the first report of an infection caused by A. quadrilineatus. Author.

Detection of Epstein-Barr virus and human papillomavirus in head and neck tumours. Tyan, Y. S., Liu, S. T., Ong, W. R., Chen, M. L., Shu, C. H., Chang, Y. S. Department of Microbiology and Immunology, Chang-Gung Medical College, Kwei-shan, Taoyuan, Republic of China. *Journal of Clinical Microbiology* (1993) January, Vol. 31 (1), pp. 53–6.
The presence of Epstein-Barr virus (EBV) DNA and human papillomavirus (HPV) DNA in 74 head and neck tumour tissues was examined by the polymerase chain reaction and DNA sequencing analysis. EBV DNA sequence was detected in all 30 nasopharyngeal-carcinoma tissue samples and in 30 of 44 other head and neck tumour samples. HPV DNA sequence was detected in 14 of 30 nasopharyngeal-carcinoma tissue samples and in 11 of 44 other tumour samples. Coinfection of both viruses was observed in 14 nasopharyngeal-carcinoma tissue samples but only in five other head and neck tumour samples indicating three hypopharyngeal-carcinoma tissue samples. Our data indicate that EBV is closely associated with nasopharyngeal-carcinoma and may also be related to hypopharyngeal-carcinoma. In addition, a relatively high percentage of EBV-positive nasopharyngeal- and hypopharyngeal-carcinoma tissue specimens contained HPV sequence. The significance of the coexistence of EBV and HPV in these tumour tissues requires further study. Author.

Screening for Corynebacterium diphtheriae. Wilson, A. P., Matthews, S., Bahl, M., Efstratiou, A., Cookson, B. D. Department of Clinical Microbiology, University College, London. *Journal of Clinical Pathology* (1992) November, Vol. 45 (11), pp. 1036–7.
A throat swab from a nine-year-old girl with pharyngitis yielded a non-toxigenic strain of Corynebacterium diphtheriae var mitis and Streptococcus group G. C pseudodiphthericum was isolated from the throats of two of her four brothers. In each case the isolate was sent to the reference laboratory before full identification. The growth was found to be mixed for one brother; the other isolate being a toxin producing C diphtheriae var gravis. The child was asymptomatic and the case proves that all colonial types on the Hoyles plate should be identified. Author.

Onset and duration of the effects of three antihistamines in current use—astemizole, loratadine and terfenadine forte—studied during prolonged, controlled allergen challenges in volunteers. Horak, F., Jager, S., Berger, U. First Ear, Nose and Throat Clinic, University of Vienna, Austria. *Journal of International Medical Research* (1992) September, Vol. 20 (5), pp. 422–34.
In a three-way, double-blind, crossover study the onset of action and effects at the end of the dosing interval of 10 mg/day astemizole, 10 mg/day loratadine and 120 mg/day terfenadine forte given for three days to six atopic volunteers were assessed using the Vienna challenge chamber (VCC). With each treatment, two long-term pollen challenges were performed in the VCC: the first to assess the onset of action started 1h before the first dose and lasted continuously for 5; the second to assess the effects at the end of dosing took place 21 h after the last of the three doses and lasted 3 h. All three drug treatments initiated 1 h after the beginning of challenge with grass pollen reversed the adverse effects of challenge on the subjective symptoms (runny, blocked or itchy nose, sneezing, itchy eyes, tears) and the objective parameters (nasal secretions, nasal resistance, nasal flow, flow increase, nasal peak flow) within 1–3 h. The mean time to onset of action was 107 min for astemizole, 117 min after treatment for loratadine and 153 min for terfenadine forte. During the second allergen challenge, 21–24 h after intake, astemizole consistently provided better protection for all parameters than did loratadine or terfenadine forte; however the differences were not statistically significant. Author.

Influence of cigarette smoking on the efficacy of radiation therapy in head and neck cancer. Browman, G. P., Wong, G., Hodson, I., Sathya, J., Russell, R., McAlpine, L., Skingley, P., Levine, M. N. Department of Clinical Epidemiology, McMaster University, Hamilton, ON, Canada. *New England Journal of Medicine* (1993) January 21, Vol. 328 (3), pp. 159–63.
BACKGROUND: Smoking is a risk factor for several cancers and may also limit the efficacy of treatment. In this study, we evaluated the influence of cigarette smoking during radiation therapy on the efficacy of treatment in patients with head and neck cancer. METHODS. Using a questionnaire, we obtained information on smoking behaviour at base line and weekly during therapy in 115 patients with head and neck cancer who were treated with radiation therapy with or without fluorouracil. The side effects of therapy were evaluated weekly, and response was assessed 13 weeks after treatment was completed. The main outcomes measured were treatment response and survival. RESULTS. The prognostic variables were similar among the patients who smoked and those who did not smoke during treatment. The 53 patients who continued to smoke during radiation therapy had a lower rate of complete response (45 per cent vs. 74 per cent, $P = 0.008$) and poorer two-year survival (39 per cent vs. 66 per cent, $P = 0.005$) than the 62 patients who did not smoke or who had quit before treatment. Among the non-smoking patients, mortality was influenced by the length of time between quitting and treatment, with a risk reduction (relative to that for patients who continued to smoke) of 40 per cent for patients who had quit less than 12 weeks before diagnosis and of 70 per cent for patients who had quit more than one year before diagnosis. After adjustment for other variables with proportional-hazards regression analysis, smoking remained an independent prognostic factor ($P = 0.002$), with a relative risk of 2.5 (95 per cent confidence interval, 1.4 to 4.4) favouring the patients who abstained from smoking. The results could not be explained by the type of chemotherapy received, the presence of coexisting morbid conditions, differences in the side effects of radiation, or the number of interruptions of

treatment. CONCLUSIONS. Patients with head and neck cancer who continue to smoke during radiation therapy have lower rates of response and survival than patients who do not smoke during radiation therapy. Author.

The transsphenoethmoid approach to the sphenoid sinus and clivus. Lalwani, A. K., Kaplan, M. J., Gutin, P. H. Department of Otolaryngology Head and Neck Surgery, School of Medicine, University of California, San Francisco. *Neurosurgery* (1992) December, Vol. 31 (6), pp. 1008–14; discussion 1014.
Surgical access to the sphenoid sinus and clivus for the resection of benign and malignant disease is difficult and is often associated with significant morbidity. The transsphenoethmoid approach, an extension of a familiar otolaryngological procedure, with or without a limited medial maxillectomy, allows access to this region with little morbidity and excellent cosmetic results. Since 1988, the transsphenoethmoid approach has been used in 15 patients at our institution for resection of primary and recurrent chordomas, chondrosarcomas, pituitary macroadenomas, repair of cerebrospinal fluid leaks, and drainage of petroclival cysts. In most instances, an ipsilateral approach is most satisfactory. When necessary, a contralateral transsphenoethmoid approach is used when the tumour is posterolateral to the internal carotid artery and as far lateral as the abducens nerve. Author.

En bloc resection of an ethmoid carcinoma involving the orbit and medial wall of the cavernous sinus. Origitano, T. C., Al-Mefty, O., Leonetti, J. P., Izquierdo, R. Department of Physiology, Loyola University Medical Centre, Maywood, Illinois. *Neurosurgery* (1992) December, Vol. 31 (6), pp. 1126–30; discussion 1130–1.
The involvement of the cavernous sinus by malignant tumours has limited their surgical treatment. We report here a successful en bloc resection of an invasive ethmoid carcinoma involving the cavernous sinus in a 46-year-old man. To prepare for surgery on this patient, a cadaver study was performed to investigate the feasibility of en bloc cavernous sinus resection and reconstruction. The preoperative evaluation, operative approach, and postoperative management are presented. Author.

Oral ciprofloxacin in the management of chronic suppurative otitis media without cholesteatoma in children: preliminary experience in 21 children. Lang, R., Goshen, S., Raas-Rothschild, A., Raz, A., Ophir, D., Wolach, B., Berger, I. Department of Otolaryngology, Meir Hospital, Kfar-Saba, Israel. *Pediatric Infectious Diseases Journal* (1992) November, Vol. 11 (11), pp. 925–9.
The current medical management of children with chronic suppurative otitis media without cholesteatoma unresponsive to local treatment and oral antibiotics is intravenous antibiotic therapy in the hospital setting. We studied the efficacy and toxicity of oral ciprofloxacin in chronic suppurative otitis media. Twenty-one children received oral ciprofloxacin, 30 mg/kg/day. Ear discharge was positive for bacteria resistant to other oral medications and susceptible to the quinolones. The mean duration of treatment was 16.7 days. In 18 children suppuration ceased and three failed their first course. During a mean follow-up of 15.4 months, six children remained free of ear, nose and throat problems. Otorrhea recurred in 12 children. Ear cultures were positive for organisms susceptible to amoxicillin in five of them. In seven cases Pseudomonas aeruginosa was again isolated from otorrhoea. Repeated antibiotic therapy was advocated only in three (two responded to ciprofloxacin; one failed ciprofloxacin and was cured by ceftazidime). Adverse clinical effects were not observed. Transient neutropenia was observed in one child. There was no change in the height percentile. The results of this study show that children with chronic suppurative otitis media without cholesteatoma can be effectively treated with oral ciprofloxacin. This novel approach may prevent hospitalization. Author.

Factors influencing outcome in children treated with antibiotics for acute otitis media. Berman, S., Roark, R., Children's Hospital, Denver, CO 80218. *Pediatric Infectious Diseases Journal* (1993) January, Vol. 12 (1), pp. 20–4.
Factors affecting outcome were analyzed from three antibiotic clinical trials that had identical case definition and outcome criteria. Overall 102 subjects with acute otitis media had a initial tympanocentesis, were enrolled in one of the clinical trials, were randomized to receive 10 days of oral treatment and had a post-therapy visit. The antibiotics used were cefixime (38), cefaclor (25), loracarbef (14), amoxicillin plus clavulanate (16) or amoxicillin (9). Fifty-five of the 102 (54 per cent) study subjects were classified as cured or improved at the 21- to 28-day post-therapy visit. Factors analyzed in relation to outcome included antibiotic administered, isolation of a pathogen from the middle ear aspirate, study subject age and sex, history of recurrent otitis media, unilateral vs bilateral involvement, season of enrollment and history of antibiotic administration in the month before enrollment. Univariate analysis identified the following four factors associated with higher posttherapy visit failure rates: a history of recurrent otitis media; enrollment during winter respiratory seasons (December through March); a history of being treated with an antibiotic during the month before enrollment; and administration of cefaclor compared with other antibiotics. However, only a history of recurrent otitis media and enrollment during the winter respiratory season met the 0.05 significance level for entry into a model derived from logistic regression to assess interactions among factors. Clinical guidelines for the management of otitis media should take into consideration that children with a prior history or recurrent otitis media and infection during the winter season more often fail to respond to antibiotic treatment and have a higher risk of developing a persistent middle ear effusion. Author.

Comparative study of sultamicillin and amoxicillin-clavulanate: treatment of acute otitis media. Chan, K. H., Bluestone, C. D., Tan, L. S., Reisinger, K. S., Blatter, M. M., Fall, P. A. Department of Otolaryngology, University of Pittsburgh School of Medicine, Children's Hospital of Pittsburgh, PA 15213. *Pediatric Infectious Diseases Journal* (1993) January, Vol. 12 (1), pp. 24–8.
Sultamicillin is a mutual prodrug of ampicillin and sulbactam that is chemically linked by a diester bond. This investigational agent has beta-lactamase-inhibiting activity by virtue of sulbactam, a novel beta-lactamase inhibitor. A double blind randomized study was conducted to evaluate the safety, efficacy and tolerance of sultamicillin for treatment of acute otitis media compared with amoxicillin-clavulanate. A total of 144 subjects were included (96 randomly assigned to the sultamicillin and 48 to the amoxicillin-clavulanate groups). No safety concerns for sultamicillin were identified during the study. The clinical efficacy in effusion clearance between the two groups was found not to be statistically different at 10 days ($P = 0.23$) and 30 days ($P = 0.72$). Similar rates of side effects, primarily gastrointestinal, were reported in both study groups. Sultamicillin may be an alternative for the treatment of acute otitis media when persistence and recurrence of disease become an issue. Author.

Cefixime vs. cefaclor in the treatment of acute otitis media in children: a randomized, comparative study. Rodriguez, W. J., Khan, W., Sait, T., Chhabra, O. P., Bell, T. A., Akram, S., Kohlbrenner, V. M. Children's National Medical Centre, Washington, DC 20010. *Pediatric Infectious Diseases Journal* (1993) January, Vol. 12 (1), pp. 70–4.
The efficacy of cefixime was compared with that of cefaclor in the treatment of 63 patients with acute otitis media. Patients received either a single dose of cefixime (8 mg/kg/day) or three divided doses of cefaclor (40 mg/kg/day). On the basis of otoscopic and tympanometric results at 10 to 14 days after the start of treatment, 28 (97 per cent) of 29 cefixime-treated patients and 25 (78 per cent) of 32 cefaclor-treated patients had resolution of acute otitis media. The clinical cure rate associated with all organisms was 94 per cent for cefixime (16 of 17 isolates) and 68 per cent (13 of 19 isolates) for cefaclor. The cure rate for Streptococcus pneumoniae was 12 of 12 (100 per cent) for cefixime and seven of seven (100 per cent) for cefaclor; the cure rate for Haemophilus influenzae (which includes two patients with mixed infections) was 3 of 4 (75 per cent) for cefixime and 2 of 7 (29 per cent) for cefaclor. One clinical relapse occurred among 29 cefixime-treated patients; however, at 28 days nine recurrences were observed. Three of 25 (9 per cent) cefaclor-treated patients failed and four (13 per cent) relapsed at 10 to 14 days, an additional two (10 per cent) experienced recurrence by Day 28. Eight (28 per cent) cefixime-treated patients experienced adverse events (seven gastrointestinal and one diarrhea and rash); eight (25 per cent) cefaclor-treated patients experienced adverse events (all gastrointestinal). Our data suggest that both at end of therapy and for 14 days thereafter, cefixime given once a day for acute otitis media is clinically equivalent to cefaclor given three times a day. Author.

Review of cefixime in the treatment of otitis media in infants and children. Bluestone, C. D. Department of Otolaryngology, University of Pittsburgh School of Medicine, PA. *Pediatric Infectious Diseases Journal* (1993) January, Vol. 12 (1), pp. 75–82.
During the past decade there has been an increase in the percentage of resistant bacteria isolated from middle-ear effusions aspirated from infants and children who have had acute otitis media. At least nine oral antibiotics or combination agents are available for this indication. Cefixime, a third generation cephalosporin, has excellent *in vitro* activity against both beta-lactamase-negative and beta-lactamase-positive Haemophilus influenzae and Moraxella catarrhalis, good activity against Streptococcus pneumoniae and Streptococcus pyogenes but relatively poor activity against Staphylococcus aureus. In children cefixime is similar in effectiveness to amoxicillin and cefaclor, but diarrhea and stool changes are more common with cefixime. Amoxicillin is still preferred for initial empiric treatment of uncomplicated acute otitis media. Its major drawback is limited efficacy when beta-lactamase-producing bacteria are the causative organisms. Cefixime is a viable alternative to amoxicillin for infants and children with acute otitis media when: (1) a beta-lactamase-producing H. influenzae or M. catarrhalis is isolated from otorrhea or tympanocentesis; (2) the child has a history of delayed hypersensitivity to the penicillins but no history of hypersensitivity to the cephalosporins; (3) there is a high incidence of resistant bacteria in the community; (4) there is no clinical improvement with amoxicillin; or (5) once daily administration is more convenient. Author.

Inadvertent administration of positive end-distending pressure during nasal cannula flow. Locke, R. G., Wolfson, M. R., Shaffer, T. H., Rubenstein, S. D., Greenspan, J. S. Department of Physiology, Temple University School of Medicine, Philadelphia, PA. *Pediatrics* (1993) January, Vol. 91 (1), pp. 135–8.
In the clinical setting, nasal cannulas are frequently used to deliver supplemental oxygen to neonates and are not believed to affect the general respiratory status. In contrast, it was hypothesized that clinical changes associated with nasal cannula gas flow may be related in part to the generation of positive end-distending pressure. To test this hypothesis, alterations in esophageal pressure were quantified as an indication of end-distending pressure and thoracoabdominal motion was quantified as an indication of breathing patterns in 13 preterm infants at gas flow levels of 0.5, 1, and 2 L/min delivered by nasal cannula with an outer diameter of either 0.2 or 0.3 cm. Changes in esophageal pressure were assessed by esophageal balloon manometry. Ventilatory patterns were assessed from thoracoabdominal motion by using respiratory inductive plethysmography. Thoracoabdominal motion was quantitated as a phase angle (theta); larger values represent greater asynchrony. The 0.2 cm nasal cannula did not deliver pressure or alter thoracoabdominal motion at any flow. In contrast, the 0.3 cm nasal cannula delivered positive end-distending pressure as a function of increasing levels of gas flow ($r = 0.92$) and reduced thorachoabdominal motion asynchrony. The mean pressure generated at 2 L/min was 9.8 cm H20. These data demonstrate that nasal cannula gas flow can deliver positive end-distending pressure to infants and signficantly alter their breathing strategy. This finding raises important concerns about the indiscriminate therapeutic use, size selection, and safety of nasal cannulas for the routine delivery of oxygen in preterm infants. Author.

Single-dose intramsuclar ceftriaxone for acute otitis media in children. Green, S. M., Rothrock, S. G. Department of Emergency Medicine, Riverside General Hospital, CA 92503. *Pediatrics* (1993) January, Vol. 91 (1), pp. 23–30.
This study evaluated the efficacy of a single dose of intramuscular ceftriaxone for acute otitis media in children, using amoxicillin as a control. (There is currently no established single-dose treatment for this condition). In a prospective, randomized, double-blind, clinical trial, 233 children, aged five months to five years, with uncomplicated acute otitis media were randomly assigned to receive either a single intramuscular injection of ceftriaxone (50 mg/kg) plus placebo oral suspension for 10 days, or a placebo injection plus amoxicillin oral suspension (40 mg/kg per day divided three times per day) for 10 days in a double-blind fashion. Demographic and clinical characteristics were similar in both groups. Treatment was successful in 107 of 117 given amoxicillin (91 per cent, 95 per cent confidence interval 86 per cent to 97 per cent) and 105 of 116 given ceftriaxone (91 per cent, 95 per cent confidence interval 85 per cent to 96 per cent). Rates of improvement, failure, relapse, and reinfection were similar in both groups, as were the otoscopic and tympanometric evaluations at the 14- and 60-day follow-up visits. It is concluded that a single intramuscular injection of ceftriaxone (50 mg/kg) is as effective as 10 days of oral amoxicillin for the treatment of uncomplicated acute otitis media in children. Author.

Extracranial head and neck: PET imaging with 2-(F-18) fluoro-2-deoxy-D-glucose and MR imaging correlation (see comments). Jabour, B. A., Choi, Y., Hoh, C. K., Rege, S. D., Soong, J. C., Lufkin, R. B., Hanafee, W. N., Maddahi, J., Chaiken, L., Bailet, J., *et al.* Department of Radiological Sciences, UCLA School of Medicine 90024-1721. *Radiology* (1993) January, Vol. 186 (1), pp. 27–35. Comment in: *Radiology* (1993) January, 186 (1):13–5.
The aim of this study was to define and quantitate the normal anatomy of the extracranial head and neck with 2-(fluorine-18)fluoro-2-deoxy-D-glucose (FDG) positron emission tomography (PET). This information was used to study 12 patients with primary squamous cell carcinomas. In all cases, the lymphoid tissue of the Waldeyer ring and the palatine and lingual tonsils could be differentiated from the airway, striated muscle, osseous structures, and salivary glands. Striated muscle had markedly less activity than lymphoid or salivary gland tissue. In the 12 patients with primary tumours, FDG PET depicted the tumour as an area of increased activity significantly higher than that of normal tissue. In one instance, FDG PET allowed detection of a tumour not seen at magnetic resonance (MR) imaging or computed tomography. Of the 34 lymph nodes positive for carcinoma, 24 were positive according to MR size criteria and 25 were detected with FDG PET. FDG PET allowed detection of three nonenlarged metastatic nodes that were negative at MR Imaging. Author.

Apparent travelling wave velocity changes in cases of endolymphatic hydrops. Thornton, A. R., Farrell, G. MRC Institute of Hearing Research, Royal South Hants Hospital, Southampton, Hampshire, England. *Scandinavian Audiology* (1991), Vol. 20 (1), pp. 13–8.
This study attempted to develop a test which would be specific for endolymphatic hydrops. It is based upon the hypothesis that increased pressure in the scala media will alter the stiffness of the basilar membrane and hence increase the speed of the travelling wave. Auditory brainstem-derived responses were used to measure the basilar membrane travelling wave velocity in normals and to take the equivalent measures in Meniere's patients. Ten normally hearing subjects and 20 Meniere's patients were tested. The data for the Meniere's group showed that the travelling wave velocities were within normal limits at all frequencies tested, except 5.7 kHz where travelling wave velocity greatly exceeded that of the normal group. A theoretical possibility that these findings may be the result of damaged and broadened VIIIth nerve tuning curves is discussed but travelling wave measures and psychophysical tuning curve measurements on the Meniere's group, normals and noise-induced hearing loss (NIHL) cases showed that this was not a significant factor. The data indicate that this technique can detect endolymphatic hydrops and a short duration clinical procedure has been devised. Author.

Decompression sickness induced hearing loss. A review. Talmi, Y. P., Finkelstein, Y., Zohar, Y. Department of Otolaryngology, Hasharon Hospital, Golda Medical Centre, Petah Tikvah, Israel. *Scandinavian Audiology* (1991), Vol. 20 (1), pp. 25–8.
Otologic manifestations of decompression sickness (DCS) occur only rarely. However, with more frequent exposures to deeper depths in recent years, several reports of hearing loss due to DCS have appeared. Nevertheless, the scant literature directly discussing the subject establishes otologic DCS as an important cause of diving-induced hearing loss. When hearing impairment with or without vestibular symptoms is a solitary manifestation of DCS type II , it may be difficult to distinguish from middle and inner ear barotrauma resulting in labyrinthine window fistula. Once a diagnosis is established, immediate recompression treatment with hyperbaric oxygen may result in complete recovery. The pathologic mechanism is discussed and the pertinent literature reviewed. Author.

The choice of ABR click polarity and amplitude variables in multiple sclerosis patients. Sand, T. Department of Neurology, University Hospital of Trondheim, Regionsykehuset, Norway. *Scandinavian Audiology* (1991), Vol. 20 (1), pp. 75–80.
Evoked brainstem responses (ABR) to 75 dB nHL condensation

(C), rarefaction (R), and alternating (A = C+R) clicks were investigated in healthy subjects and in patients with multiple sclerosis. A new wave IV-V 'shape ratio' (SR IV–V) was most sensitive. SR IV-V correlated most strongly with clinical MS classification, and seemed to be rather specific for retrocochlear dysfunction. Wave IV-V amplitude was also more sensitive than the common IV–V amplitude ratio. The variability of latencies and interpeak latencies was lower in ABR to A clicks than in ABR to either R or to C clicks. In patients, fewer subcomponents were found in ABR to A than in ABR to R and C clicks. ABR to A clicks were on the average slightly more sensitive than either C or R click ABR. Our results suggest that both A-mode ABR and the 'dispersion' variable SR IV–V can be used without significant problems in the diagnosis of brainstem demyelination. A test protocol which requires ABR to both C and R clicks to be abnormal, will, however, be less sensitive, though probably more specific. Author.

High-frequency amplification with ITC-HA and BTE-HA. A comparative investigation. von-Buchwald, C., Pedersen, F., Parving, A. Department of Audiology, Bispebjerg Hospital, Copenhagen, Denmark. *Scandinavian Audiology* (1991), Vol. 20 (2) pp. 117–20.
The purpose of the present investigation was to evaluate the magnitude of selective high-frequency amplification obtained by an in-the-canal hearing aid (ITC-HA), and to compare it with that obtained with a conventional behind-the-ear hearing aid (BTE-HA) with an open mould. Twenty-two subjects (20 males, 2 females) at a median age of 66 years (range 46–84) were included in the investigation. All suffered from a bilateral high-frequency hearing loss with normal or near-normal hearing thresholds at 0.5 and 1 kHz. Insertion gain measurements demonstrated that the ITC-HA gives a significantly higher amplification in the high-frequency area, when compared with the BTE-HA, though neither of the hearing aids amplified as much as indicated by the POGO strategy. Although a better amplification in the high-frequency area was obtained with the ITC-HA, it did not result in significantly better speech recognition when compared with the BTE-HA. At the hearing aid fitting, all subjects preferred the ITC-HA, and after an observation period of one year, 68 per cent of those fitted used the aid continuously. Based on the investigation it is concluded that hearing-impaired persons can be fitted with an ITC-HA, even if they have pronounced high-frequency hearing loss, and that this type of aid is preferred by the hearing-impaired to the conventional BTE-HA. Author.

The value of speech audiometry in hearing-aid rehabilitation. Parving, A. Department of Audiology, Bispebjerg Hospital, Copenhagen, Denmark. *Scandinavian Audiology* (1991), Vol. 20 (3), pp. 159–64.
The purpose of the present study was to evaluate the aided speech recognition score (SRS) as predictor of HA-use by relating aided SRS measurements to an extensive questionnaire describing the self-assessed use and benefit of an in-the-canal hearing aid (Danavox 131). A sample of 124 subjects with moderate, predominantly sensorineural hearing loss, 61 males and 63 females at a median age of 68 years, range 21–89, were included in the present investigation. The hearing-aid fitting was checked by insertion gain measurements based on the POGO amplification strategy, and the improvement in word recognition offered by the aid was expressed as the difference between the aided and unaided SRS measured in background noise (SRSN) (S/N = + 10 dB). Correlations between the aided SRSN and questions concerning the use and benefit of this type of hearing aid were performed after subdividing the sample into two age groups, below and above 70 years of age, in order to avoid differences in hearing aid gain which could be ascribed to an age effect. The results demonstrated that a prediction of the aided SRSN from the unaided SRSN can be performed. However, no significant correlation between the self-assessed time-related use, situational use or satisfaction and the aided SRSN could be found. It is concluded that aided SRSN with this clinical set-up cannot predict the use or benefit of a modern hearing aid, though the measurements may, in combination with insertion gain measurements, prove useful for the comparison between different hearing aids, also in the individual person. Author.

A new measure for determining the degree of abnormality of psychophysical tuning curves in hearing-impaired subjects. Snik, A. F., Horst, J. W. Audiologic Centre, University Hospital Nijmegen, The Netherlands. *Scandinavian Audiology* (1991), Vol. 20 (3), pp. 191–5.
Psychophysical tuning curves were determined in hearing-impaired and normal-hearing subjects. Frequency selectivity, determined from the tuning curves of the hearing-impaired, decreased with increasing hearing impairment. As this may be attributed to the subjects' hearing impairment as well as to the inevitably higher test (probe)-tone level, we also collected psychophysical tuning curves from normal-hearing subjects as a function of test-tone level. Their frequency selectivity also decreased with test-tone level, but to a lesser degree. This indicates a real decrease in frequency selectivity in hearing-impaired subjects. Two measures were used to describe frequency selectivity, the dloct and the newly introduced AALD. The latter is the average absolute difference in masker levels between the individual's psychophysical tuning curve and the average normal tuning curve, obtained at the same test-tone level. The AALD turned out to be a more sensitive tool for measuring pathological frequency selectivity than the dloct. Author.

Low-frequency hearing loss after spinal anaesthesia. Perilymphatic hypotonia? Walsted, A., Salomon, G., Olsen, K. S. ENT Department, Glostrup Hospital, Denmark. *Scandinavian Audiology* (1991), Vol. 20 (4), pp. 211–5.
Audiological tests were conducted on 34 patients before and after undergoing an operation under spinal anaesthesia. One of these patients developed a considerable unilateral hearing loss in the low-frequency range, which persisted until an epidural blood-patch was given. Unexpectedly, we also found a general small significant threshold shift at 500 Hz, which has never before been described in the literature. The biological mechanism is discussed and the results suggest that the explanation of the hearing loss could be an endolymphatic hydrops resulting from perilymphatic hypotonia due to loss of liquor, during and after the spinal anaesthesia. Author.

Hearing asymmetry among occupationally noise-exposed men and women under 60 years of age. Pirila, T., Sorri, M., Jounio-Ervasti, K., Sipila, P., Karjalainen, H. Department of Otolaryngology, University of Oulu, Finland. *Scandinavian Audiology* (1991) Vol. 20 (4), pp. 217–22.
Interaural asymmetry of hearing thresholds at 4 kHz was analysed in four populations exposed to occupational noise. The left ear was found to be on average significantly worse than the right ear, among both the male and female subjects. In the male population the left ear was twice as often the worse ear as the right one. In the female population the corresponding ratio was 1.5. The average inferiority of the left ear increased as a function of the hearing threshold level. Among subjects with abundant shooting (reindeer herders) the average inferiority of the left ear was close to the average of all male subjects. Interaural difference increased as a function of the hearing threshold level, both among subjects with the left ear and subjects with the right ear being the worse one. In the male population the interaural difference was significantly greater in the former than in the latter group of subjects. Author.

Hearing asymmetry among left-handed and right-handed persons in a random population. Pirila, T., Jounio-Ervasti, K., Sorri, M. Department of Otolaryngology, University of Oulu, Finland. *Scandinavian Audiology* (1991) Vol. 20 (4), pp. 223–6.
The possible effect of handedness on hearing threshold asymmetry was analysed in a large random population representing a normal population. The left ear was on an average slightly but significantly poorer than the right ear at high frequencies, especially at 4 kHz, while at low frequencies the right ear was on average poorer than the left ear. A matched control group of the right-handed subjects was formed for 211 left-handed subjects. Among the left-handed subjects the average ear asymmetry resembled the ear asymmetry of the whole population, the right-handed subpopulation, and of the matched control group. In conclusion, it seems that handedness cannot be responsible for the average inferiority of hearing in the left ear at 4-kHz or for the average slight superiority of the left ear at 0.125–0.5 kHz. However, this analysis does not rule out possible minor effects of handedness on ear asymmetry. Author.

Personal cassette players ('Walkman'). Do they cause noise-induced hearing loss? Turunen-Rise, I., Flottorp, G., Tvete, O. ENT Department, University Hospital, Rikshospitalet, Oslo, Norway. *Scandinavian Audiology* (1991), Vol. 20 (4), pp. 239–44.

Playing selected types of music on five different personal cassette players (PCPs) and using different gain (volume) settings, A-weighted maximum and equivalent sound pressure levels (SPLs) were measured on KEMAR (Knowles Electronic Manikin for Acoustic Research). The octave band SPLs were measured on KEMAR ear and transformed to field values in order to compare measured values with the Norwegian noise risk criteria. Temporary threshold shifts (TTS) measured in six subjects after listening to two different pop music cassettes on one PCP in two separate sessions, are presented. Based upon these studies we conclude that the risk of acquiring permanent noise-induced hearing loss (NIHL) from use of PCP is very small for what we found to be normal listening conditions. Author.

Clinical and animal experiment studies to optimise the therapy for acute acoustic trauma. Pilgramm, M. ENT Department, Federal German Armed Forces Hospital, Bundeswehrkrankenhaus, Detmold. *Scandinavian Audiology Supplement* (1991) Vol. 34, pp. 103–22.

Despite extensive educational measures and improved ear protection, acute acoustic trauma still represents a major problem for the young soldier in the Federal Armed Forces. The aim of the investigation was thus to establish the optimum therapeutic scheme that could be applied by the generally young and still inexperienced unit medical officer to patients who had suffered acute acoustic trauma and to demonstrate the therapeutic scheme in animal experiments. In the clinical section, ten studies conducted on 500 patients who had suffered acute acoustic trauma made it possible to show that the combination of low-molecular dextran, or low-molecular hydroxyethyl starch, and hyperbaric oxygenation produced the best therapeutic results in terms of hearing gain and tinnitus elimination by a statistically significant margin. The studies only included patients who showed no tendency towards spontaneous recovery, with strict exclusion criteria being applied. Through animal experiments, it was seen that hyperbaric oxygenation, in the manner in which we conducted it (100 per cent oxygen at 2.5 bar), leads to an increase in the oxygen partial pressure in the perilymph of the guinea pig cochlea. This is due partly to diffusion and partly to the blood flow. In a further experimental approach using animals, it proved possible to show that 60 hours after damage by acoustic trauma and hyperbaric oxygenation, the number of inner ear sensory cells that had suffered morphological damage in the animal was lower than without the hyperbaric oxygenation by a statistically significant margin. At the same time, valuable information was gained on the epidemiology of acute acoustic trauma. Author.

A study of the possibility of acquiring noise-induced hearing loss by the use of personal cassette players (Walkman). Turunen-Rise, I., Flottorp, G., Tvete, O. ENT Department, Rikshopitalet, Oslo, Norway. *Scandinavian Audiology Supplement* (1991) Vol. 34, pp. 133–44.

Playing various types of music on five selected personal cassette players (PCPs), A-weighted sound pressure levels (SPLs), together with octave band spectrum, were measured on KEMAR (Knowles Electronics Manikin for Acoustic Research). Maximum and equivalent SPLs were measured for various types of music, PCPs and for different gain (volume) settings. The measured SPL-values on KEMAR ear were transformed to field values outside the ear canal by means of corrections based on KEMAR's ear canal resonance curve—in order to compare measured values with the Norwegian national noise risk criteria. Temporary threshold shift (TTS) was measured after listening to PCP music for one hour in order to obtain additional information about possible risk of hearing damage. TTS values are presented for six subjects when playing two different pop music cassettes on one type PCP. Our analysis indicates that the risk for permanent noise-induced hearing loss from listening to PCP is very small for normal listening conditions. Author.