

Abstract Selection

Squamous cell carcinoma of the tonsillar region. A retrospective analysis of treatment results. Kajanti, M. J., Mantyla, M. M. Department of Radiotherapy and Oncology, Helsinki University Central Hospital, Finland. *Acta Oncologica* (1991), Vol. 30 (5), pp. 629–33.

Seventy-five patients treated for squamous cell carcinoma of the tonsillar region during 1958–1982 were reviewed retrospectively. Of the 75 patients, 30 received combined treatment with surgery and postoperative radiotherapy, and 45 radical radiotherapy alone. The five-year survival rate for the entire patient series was 39 per cent, the corresponding figure was 53 per cent for the patients treated with combined therapy and 29 per cent for the patients with radical radiotherapy. The radical radiotherapy group included more patients with advanced stage of the disease (stage III 27 per cent and stage IV 66 per cent) than the combined therapy group (47 per cent and 23 per cent respectively). Thirty-four patients (45 per cent) died from uncontrolled disease. Author.

Increased all-cause and cardiac morbidity and mortality associated with the diagonal earlobe crease: a prospective cohort study. Elliott, W. J., Karrison, T. Department of Medicine, University of Chicago, Illinois 60637. *American Journal of Medicine* (1991) Sep, Vol. 91 (3), pp. 247–54.

Purpose: To ascertain whether the diagonal earlobe crease (ELC) is associated prospectively with future death or cardiac events over eight years of follow-up in two sets of patients: those with known coronary artery disease (CAD) and those without evidence for CAD. Patients and Methods: We performed a prospective, observational study of 108 patients in four cohorts (each matched for age, sex, and race, but differing in the presence or absence of both a diagonal ELC and CAD in 1979 to 1982). Follow-up information was gathered by telephone interviews, and dates and causes of death were determined by reference to death certificates ($n = 48$), hospital records ($n = 9$), or attending physician statements ($n = 1$). Results: During eight to ten years of follow-up, 58 of the patients had died. Patients with ELCs had poorer survival rates than those without creases, by stratified log-rank test ($p = 0.006$ for the cohorts thought not to have CAD, and $p = 0.058$ for those with CAD). Cardiac death rates (due to acute myocardial infarction, sudden cardiac death, or heart failure) were also higher for patients with ELCs: 8.0 vs 0.9 cardiac deaths per 100 patient-years (p less than 0.001) in patients without CAD at entry, and 11.7 vs 3.7 cardiac deaths per 100 patient-years ($p = 0.008$) in patients with CAD in 1979 to 1982. Cardiac event rates (cardiac death, non-fatal myocardial infarction, or coronary artery bypass surgery) were also higher in those with ELCs: 10.4 vs 1.4 events per 100 patient-years (p less than 0.001) for those without known CAD, and 15.8 vs 5.7 events per 100 patient-years ($p = 0.009$) for those with CAD. Conclusion: These results suggest that a diagonal ELC is associated with increased all-cause and cardiac morbidity and mortality. Patients with ELCs may be at higher risk for coronary events, and might be especially cautioned to control or reduce other cardiac risk factors, even if currently without diagnostic evidence of CAD. Author.

A comparison of azithromycin and penicillin V for the treatment of streptococcal pharyngitis. Hooton, T. M. Harborview Medical Centre, Seattle, Washington 98104. *American Journal of Medicine* (1991) Sep 12, Vol. 91 (3A), pp. 23S–26S.

The safety and efficacy of azithromycin was compared with that of penicillin V in a multicentre study of the treatment of streptococcal pharyngitis in outpatients. Patients were randomized in a 2:1 ratio to either azithromycin 500 mg once on day 1 followed by 250 mg/d for four days, or penicillin V (V-Cillin K) 250 mg every 6 h for 10 days. Two hundred and forty-two patients from 29 centres were evaluable at the 11th day after enrollment. Five of 229 (2.2 per cent) azithromycin-treated patients were not evaluable because their enrollment

isolates of group A beta-hemolytic streptococci (GABHS) were resistant to the drug. In both treatment groups, 99 per cent of patients were clinically cured or improved. Eradication of GABHS occurred in 91 per cent of azithromycin-treated patients compared with 96 per cent of penicillin-treated patients ($p = 0.21$). Of the patients who had a recurrence of GABHS, clinical evidence of infection occurred in 3 of 13 (23 per cent) patients who had been treated with azithromycin and in 7 of 10 (70 per cent) patients treated with penicillin. Adverse events, generally mild to moderate gastrointestinal complaints, were significantly more common in the azithromycin-treated patients (16.6 per cent) than in penicillin-treated patients (1.7 per cent) (p less than 0.001). Discontinuation because of side effects occurred with similar frequency in both groups. Azithromycin appears to be a safe and effective alternative treatment for streptococcal pharyngitis in adult outpatients. Author.

Azithromycin and amoxicillin in the treatment of acute maxillary sinusitis. Casiano, R. R. Department of Otolaryngology, University of Miami/Jackson Memorial Medical Centre, Florida 33101. *American Journal of Medicine* (1991) Sep 12, Vol. 91 (3A), pp. 27S–30S.

Seventy-eight patients participated in this multicentre, third-party blinded study comparing a single daily dose of azithromycin for five days (500 mg on day one followed by 250 mg/d for days two to five) with amoxicillin (500 mg three times daily) for ten days in the treatment of acute bacterial maxillary sinusitis. A total of 38 evaluable patients contributed to the efficacy analysis. The overall clinical response rate was 100 per cent for both antibiotics. The clinical cure rate, as determined by the investigator, was 73.9 per cent for azithromycin and 73.3 per cent for amoxicillin; improvement has been in 26.1 per cent and 26.7 per cent of patients, respectively. The bacteriologic cure rate in these 38 patients was 100 per cent in both groups. Both antibiotics were well tolerated; side effects were reported by 4.9 per cent of patients in the azithromycin group compared with 8.1 per cent in the amoxicillin group. Most of these side effects were gastrointestinal disturbances that were reported by four of five (three amoxicillin, one azithromycin) patients experiencing side effects. All side effects were mild, and in both groups only minor abnormalities in laboratory data were detected. No patient discontinued the study because of treatment-related side effects. In this study, a five-day course (one dose per day) of azithromycin proved to have efficacy, safety, and tolerability that was equal to a ten-day course (three doses per day) of amoxicillin in the treatment of acute bacterial sinusitis. Author.

Sustained production of secretory component by human tracheal epithelial cells in primary culture. Fiedler, M. A., Kaetzel, C. S., Davis, P. B. Department of Pediatrics, Case Western Reserve University, Cleveland, Ohio 44106. *American Journal of Physiology* (1991) Oct, Vol. 261 (4 Pt 1), pp. L255–61.

Secretory immunoglobulin A (sIgA) is an important initial defence against environmental agents in the airway. The purposes of our study were to determine whether human tracheal epithelial (HTE) cells produce secretory component (SC), the receptor for dimeric IgA (dIgA), to determine whether HTE cells in primary culture continue to produce SC, and if so, to develop a model for studying SC metabolism in the airway. Immunoperoxidase staining of the human trachea using antibody raised against human SC reveals that many surface epithelial cells and the cells of the submucosal glands express SC but basal cells do not. HTE cells, obtained from tracheal specimens at necropsy, contain 10–51 ng of SC/10 (5) cells, at the time of isolation. However, when these cells are placed in culture on plastic, SC release diminishes with time (from 19.6 ng/10 (5) cells on day 2 to 6.4 on day eight) despite continued cell proliferation. In contrast, HTE cells cultured on floating collagen gels increase SC release over the same period (26.2 ng/10 (5) cells on day two and

193.9 on day eight). HTE cells cultured on floating collagen-coated and uncoated nitrocellulose filters also produced SC at least through day eight (collagen-coated, 21.5 ng/10 (5); uncoated, 6.3). Furthermore, SC was released preferentially to the apical surface (4:1 ratio) under both conditions. This system will allow us to study the production, processing, and release of SC by HTE cells and further understand the transport and function of secretory IgA in the airway. Author.

Neuropeptides and nasal secretion. Baraniuk, J. N., Kaliner, M. Department of Thoracic Medicine, National Heart and Lung Institute, London, United Kingdom. *American Journal of Physiology* (1991) Oct, Vol. 261 (4 Pt 1), pp. L223–35.

The nasal mucosa is innervated by the sensory, parasympathetic, and sympathetic nervous systems. Nociceptive sensory nerves are stimulated by mucosal injury, inhalation of irritants, or mast cell degranulation and release of the calcitonin gene-related peptide, the tachykinins substance P and neurokinin A, and other peptides by the axon response mechanism. Sensory nerve stimulation initiates systemic reflexes, such as the sneeze, and central parasympathetic reflexes which release acetylcholine, vasoactive intestinal peptide, and other peptides and lead to glandular secretion. In concert, these proinflammatory neural responses lead to vasodilation, vascular permeability, and glandular secretion. Sympathetic nerves release neuropeptide Y and norepinephrine, potent vasoconstrictors which act to decompress the nasal mucosa and produce nasal patency. The balance between the effects of parasympathetic and sympathetic neurotransmitters may regulate nasal homeostasis, whereas the nociceptive sensory system may be held in reserve as a defense mechanism. Dysfunction of these systems may lead to pathological nasal syndromes. In the future, specific neuropeptide agonists and antagonists may be useful for the treatment of human rhinitic diseases. Author.

Mucin exocytosis. Verdugo, P. Centre for Bioengineering, University of Washington, Seattle 98195. *American Review of Respiratory Diseases* (1991) Sep, Vol. 144 (3 Pt 2), pp. S33–7.

Mucins produced by goblet cells of the respiratory mucosa are condensed while stored in secretory granules. Mucin condensation and its decondensation upon exocytosis can be explained by the theory of polymer gel phase transition. After the opening of a secretory pore, Ca²⁺ inside the granule is exchanged for extracellular Na⁺. Na/Ca exchange triggers a polymer gel phase transition whereby the mucin polymer matrix undergoes massive swelling and thereby changes from a condensed to a hydrated phase. Swelling of the granular content is driven by a Donnan potential and results in the release of secretory product and the formation of small mucin gels, which later anneal to each other to form the respiratory mucus. Because of the tangled rather than cross-linked topology of the mucin network, the rheologic properties of the respiratory mucus depend primarily on hydration. As mucins are polyionic, the hydration of mucus is controlled by a Donnan equilibrium. Hence, mucus hydration and rheology are determined by two factors: the quantity, chain length, and charge density of the secreted mucins, and the amount and the ionic and polyionic composition of the water transported across the respiratory mucosa. Author.

Structural features of the core proteins of human airway mucins ascertained by cDNA cloning. Porchet, N., Dufosse, J., Audie, J. P., Duperat, V. G., Perini, J. M., Nguyen, V. C., Degand, P., Aubert, J. P. *American Reviews of Respiratory Diseases* (1991) Sep, Vol. 144 (3 Pt 2), pp. S15–8.

Tracheobronchial secretions are one of the most important elements of the mucociliary system that protects the respiratory mucosa. They contain bronchial mucus, which is composed of a group of macromolecules secreted by the goblet cells of the epithelium and the sub-mucosal glands. Bronchial mucins are the most characteristic molecules of this mucus. They form a group of complex, polydispersed O-linked glycoproteins containing sugars, which make up 80 per cent of their weight. The protein core of human airway mucin has been difficult to sequence by traditional technologies because of its high content of serine and threonine residues linked to numerous oligosaccharide chains. We therefore prepared a lambda gt11 cDNA library from one sample of human tracheobronchial mucosa and screened this library with a polyclonal antibody directed against the apo-peptides of human bronchial mucins. We obtained 20 positive clones that were sequenced. These sequences were classified into three different types. The use of the nucleotide probes from these clones in Northern blot analysis showed that the RNA messages

were extremely polydispersed. At the current time, four of these probes allow us to map human tracheobronchial mucins genes to at least three different chromosomes. These results suggest that the peptide moiety of the human airway mucin is very heterogeneous. Author.

Effect of weight loss on upper airway collapsibility in obstructive sleep apnea. Schwartz, A. R., Gold, A. R., Schubert, N., Stryzak, A., Wise, R. A., Permutt, S., Smith, P. L. Department of Medicine, Johns Hopkins Asthma and Allergy Centre, Francis Scott Key Medical Centre, Baltimore, Maryland 21224. *American Reviews of Respiratory Diseases* (1991) Sep, Vol. 144 (3 Pt 1), pp. 494–8.

Previous investigators have demonstrated in patients with obstructive sleep apnea that weight reduction results in a decrease in apnea severity. Although the mechanism for this decrease is not clear, we hypothesize that decreases in upper airway collapsibility account for decreases in apnea severity with weight loss. To determine whether weight loss causes decreases in collapsibility, we measured the upper airway critical pressure (Pcrit) before and after a 17.4 ± 3.4 per cent (mean ± SD) reduction in body mass index in 13 patients with obstructive sleep apnea. Thirteen weight-stable control subjects matched for age, body mass index, gender (all men), and non-REM disordered breathing rate (DBR) also were studied before and after usual care intervention. During non-REM sleep, maximal inspiratory airflow was measured by varying the level of nasal pressure and Pcrit was determined by the level of nasal pressure below which maximal inspiratory airflow ceased. In the weight loss group, a significant decrease in DBR from 83.3 ± 31.0 to 32.5 ± 35.9 episodes/h and in Pcrit from 3.1 ± 4.2 to -2.4 ± 4.4 cm H₂O (p less than 0.00001) was demonstrated. Moreover, decreases in Pcrit were associated with nearly complete elimination of apnea in each patient whose Pcrit fell below -4 cm H₂O. In contrast, no significant change in DBR and a minimal reduction in Pcrit from 5.2 ± 2.3 to 4.2 ± 1.8 cm H₂O (p = 0.031) was observed in the 'usual care' group. We conclude that (1) weight loss is associated with decreases in upper airway collapsibility in obstructive sleep apnea, and that (2) the resolution of sleep apnea depends on the absolute level to which Pcrit falls. Author.

Role of mast cell and neutrophil proteases in airway secretion. Nadel, J. A. Cardiovascular Research Institute, University of California, San Francisco 94143-0130. *American Reviews of Respiratory Diseases* (1991) Sep, Vol. 144 (3 Pt 2), pp. S48–51.

To investigate the hypothesis that mast cell and neutrophil proteases stimulate airway gland secretion, we studied the effects of two mast cell proteases (tryptase and chymase) and two neutrophil enzymes (human neutrophil elastase and cathepsin G) on secretion of 35S-labelled macro-molecules from cultured bovine airway gland serous cells. Tryptase had no effect, but the other three enzymes stimulated secretion. Threshold concentrations of the enzymes (greater than or equal to 10⁻¹⁰ M) were lower by two orders of magnitude than other agonists (e.g. histamine, prostaglandins, beta-adrenergic agonists). Only proteases induced maximal secretory response (greater than or equal to 80 per cent depletion of 35S-labelled macromolecules), and these responses were greater than 10-fold larger than those of other agonists. The active catalytic sites of the enzymes are required for their secretory activities. These findings suggest a role for these enzymes in the pathogenesis of inflammatory airway diseases associated with hypersecretion, and they suggest that the use of selective site-directed inhibitors of these enzymes may provide a novel strategy for intervention in inflammatory diseases of the airways associated with hypersecretion (e.g. cystic fibrosis, chronic bronchitis). Author.

The effect of posture on upper airway dimensions in normal subjects and in patients with the sleep apnea/hypopnea syndrome. Yildirim, N., Fitzpatrick, M. F., Whyte, K. F., Jalleh, R., Wightman, A. J., Douglas, N. J. Department of Medicine, City Hospital, Edinburgh, United Kingdom. *American Review of Respiratory Diseases* (1991) Oct, Vol. 144 (4), pp. 845–7.

The effect of posture on upper airway dimensions was assessed for two reasons. First, some patients with untreated sleep apnea/hypopnea syndrome (SAHS) report they sleep better sitting upright. Second, to allow comparison of the differing techniques used to determine the site of maximal airway narrowing in awake patients with SAHS, as some are carried out in the erect and others in the supine posture. Lateral cephalometry was therefore carried out in 33 non-snoring normal subjects and in 29 patients with obstructive

SAHS (mean apneas plus hypopneas, 46 per hour; range, 17 to 103). In both normal subjects and patients, uvular width was increased (p less than 0.05) in the supine posture, and this was associated with significant narrowing of the retropalatal airway in the patients with SAHS (erect, $5.0 \pm \text{SD } 2.6$ mm; supine, 3.6 ± 2.8 mm; p less than 0.01). In both normal subjects and patients, the retroglottal hypopharynx widened (p less than 0.05) in the supine posture (e.g. in patients with SAHS, posterior airway space was: erect, 11.5 ± 4.5 mm; supine, 13.4 ± 4.8 mm; $p = 0.003$). In the supine posture there was anterior movement of the hyoid and neck flexion in both groups. However, a study of the effect of neck flexion in the erect posture showed that neck flexion produced no changes in airway caliber. Thus, posture is an important determinant of upper airway dimensions. Author.

Magnetic resonance imaging of the upper airway in obstructive sleep apnea before and after chronic nasal continuous positive airway pressure therapy. Ryan, C. F., Lowe, A. A., Li, D., Fleetham, J. A. Department of Medicine, University of British Columbia, Vancouver, Canada. *American Review of Respiratory Diseases* (1991) Oct, Vol. 144 (4), pp. 939–44.

Magnetic resonance imaging (MRI) provides high-resolution images of the upper airway and is useful for assessing conditions associated with increased tissue water content. To determine whether nasal continuous positive airway pressure (CPAP) changes awake upper airway morphology in obstructive sleep apnea (OSA), we performed awake upper airway MRI scans on five male patients with moderate to severe OSA before and after four to six weeks of nasal CPAP therapy. MRI scans were performed using spin echo pulse sequences to examine detailed anatomy and inversion recovery sequences to assess mucosal water content. Patients did not have nasal CPAP applied during the MRI scans. Axial and sagittal images were obtained, and tracings were made of the upper airway, tongue, and soft palate. Utilizing computer graphics, cross-sectional areas and volumes were calculated for each anatomic structure. A subjective grading system was used to assess upper airway mucosal water content. Pharyngeal volume and minimum pharyngeal cross-sectional area increased (p less than 0.05) and tongue volume decreased (p less than 0.01) following chronic nasal CPAP therapy. The increase in pharyngeal volume occurred mainly in the oropharynx (p less than 0.01). Upper airway mucosal water content decreased in the oropharynx (p less than 0.05). We conclude that chronic nasal CPAP therapy during sleep in patients with OSA produces changes in awake upper airway morphology. These changes may be due to resolution of upper airway edema. The upper airway of patients with OSA can be accurately and repeatedly assessed using MRI. Author.

Removal of a laryngeal foreign body using high frequency jet ventilation. Tan, S. S., Dhara, S. S., Sim, C. K. Department of Anaesthesia and Intensive Care, Singapore General Hospital. *Anaesthesia* (1991) Sep, Vol. 46 (9), pp. 741–3.

Aspiration of a foreign body into the respiratory tract is a common and serious accident in childhood. Laryngotracheal foreign bodies, although less common than bronchial foreign bodies, are potentially more dangerous. Removal is commonly achieved using a rigid ventilating bronchoscope. We report a 16-month-old boy who had an open safety pin impacted in his larynx. This was removed through a tracheostomy, using high frequency jet ventilation to maintain gaseous exchange. We believe that this is the first case in which this method of removal has been reported. Author.

Comparison of propofol and thiopentone for laryngeal mask insertion. Brown, G. W., Patel, N., Ellis, F. R. University Department of Anaesthesia, St. James's University Hospital, Leeds. *Anaesthesia* (1991) Sep, Vol. 46 (9), pp. 771–2.

Conditions for insertion of the laryngeal mask were assessed following induction of anaesthesia with either propofol 2.5 mg/kg or thiopentone 4.0 mg/kg in 80 patients premedicated with diazepam 10 mg. Insertion following induction with thiopentone resulted in a greater incidence of gagging (p less than 0.01). The use of additional induction agent, where necessary, resulted in no ultimate significant difference between the groups for the provision of satisfactory conditions. Author.

Change in pattern of muscle activity following botulinum toxin injections for torticollis. Gelb, D. J., Yoshimura, D. M., Olney, R. K., Lowenstein, D. H., Aminoff, M. J. Department of Neurology, University of Michigan, Ann Arbor, CA 48109-0316. *Annals of Neurology* (1991) Apr, Vol. 29 (4), pp. 370–6.

Twenty patients with torticollis had electromyographic studies of their neck muscles performed before and after a series of local injections of botulinum toxin. The pattern of muscle activity changed after the injections, and this effect persisted even after head position had returned to baseline. Patients who did not experience any clinical benefit from the injections also demonstrated a change in the pattern of muscle activity. These results suggest that the underlying abnormality in torticollis usually involves a general motor program for head position, rather than the activity of individual neck muscles. Author.

Verruca vulgaris of the larynx. Demonstration of human papillomavirus types 6/11 by in situ hybridization. Barnes, L., Yunis, E. J., Krebs, F. J., Sonmez-Alpan, E. Department of Pathology, Presbyterian University Hospital, Pittsburgh, PA 15213. *Archives of Pathology and Laboratory Medicine* (1991) Sep, Vol. 115 (9), pp. 895–9.

Verruca vulgaris of the larynx (VVL) is a distinctly uncommon lesion related to the human papillomavirus (HPV). The clinical and pathologic features of a case involving the true vocal cords of a 37-year-old woman are presented and compared with the seven cases previously reported in the English language literature. Papillomavirus capsid antigen was detected in the excised tissue on immunostaining, and viral particles were seen by electron microscopy. In situ hybridization with biotinylated DNA probes clearly demonstrated HPV types 6/11. To our knowledge, this is the first case of VVL in which the virus associated with VVL has been genotyped. The results were unexpected because verruca vulgaris of the skin, lips, and oral cavity is associated with HPV types 2 and 4. This implies that verruca vulgaris can be caused by HPV types other than 2 and 4. In addition, since HPV types 6 and 11 are also the same genotypes associated with multiple papillomatosis of the larynx, it further indicates that VVL is virologically more related to multiple papillomatosis of the larynx than to its counterpart on the skin, lips, and oral cavity. The clinical and pathologic features that distinguish VVL from other similar lesions of the larynx are also discussed. Author.

Infra-hyoid metastases in supra-hyoid squamous cell carcinoma. Cowan, I. A., Wells, S. W. Department of Radiology, Christchurch Hospital, New Zealand. *Australasian Radiology* (1991) May, Vol. 35 (2), pp. 163–5.

The CT scans of 71 patients with primary squamous cell tumours of head and neck sites were reviewed and compared with clinical examination in the assessment of lymph nodes above and below the hyoid. Above the hyoid, CT and clinical examination disagreed on the presence or absence of metastases in 13–42 cases (31 per cent); below the hyoid where palpation is presumably easier, there was disagreement in one of ten cases (10 per cent). Abandoning infra-hyoid scans to save scanner time would save only seven slices on average per case and it is possible that further, clinically silent lesions would be missed. We conclude that staging scans in head and neck cancer should continue to include the infra-hyoid region. The inadequacies of existing knowledge based on clinical staging are discussed. Author.

A double-blind placebo controlled evaluation of acupressure in the treatment of motion sickness. Warwick-Evans, L. A., Masters, I. J., Redstone, S. B. Department of Psychology, University of Southampton, United Kingdom. *Aviation, Space and Environmental Medicine* (1991) Aug, Vol. 62 (8), pp. 776–8.

We used 36 subjects in a double-blind placebo controlled experiment to evaluate the effectiveness of acupressure as a prophylaxis against motion sickness. There were two independent variables with two levels each: acupressure vs. placebo, and motion sickness high vs low susceptible subjects. The provocative stimulus was rotation about two orthogonal axes. Signs and symptoms of motion sickness were scored both by the subject and the observer. In spite of previous reports to the contrary, acupressure provided no protection against motion sickness for either high or low susceptible subjects. Author.

Effect of caffeine ingestion on alveolar ventilation during moderate exercise. Brown, D. D., Knowlton, R. G., Sullivan, J. J., Sanjabi, P. B. Department of Physical Education, Southern Illinois University, Carbondale. *Aviation, Space and Environmental Medicine* (1991) Sep, Vol. 62 (9 Pt 1), pp. 860–4.

The purpose of this study was to examine the effect of caffeine ingestion on alveolar ventilation and physiological dead space ventilation during exercise in high and low caffeine users. Eleven males (mean age 26.4 ± 5.4 years), classified as either high caffeine users

(greater than 350 mg/d, $n = 6$) or low caffeine users (less than 50 mg/d, $n = 5$) performed two treadmill exercise conditions at a constant work rate (50 per cent $\text{VO}_{2\text{max}}$) 45 mins after ingestion of 3.3 mg of caffeine/kg body weight or placebo using a double-blind protocol. Open circuit spirometry was used to determine ventilatory and gas exchange variables every 10 min during the 50 min of walking exercise. Analysis of variance showed that caffeine produced significant differences in alveolar ventilation (VA) and the physiological dead space ventilation/tidal volume ratio (VD/VT) with VA increased from 1.36 to 1.54/litre/minute and VD/VT decreased from 22.3 to 20.5 per cent between the placebo and caffeine treatments, respectively. Additionally, caffeine ingestion produced a significant increase in tidal volume (VT) and a significant decrease in frequency of breathing (fb). We conclude that caffeine consumed prior to exercise enhances ventilatory dynamics during exercise without regard to prior habitual caffeine consumption. Author.

Human cochlear nucleus: comparison of Nissl-stained neurons from deaf and hearing patients. Seldon, H. L., Clark, G. M. Department of Otolaryngology, University of Melbourne, Vict., Australia. *Brain Research* (1991) Jun 14, Vol. 551 (1-2), pp. 185-94.

In this study of the effects of deafness on the morphology of the human cochlear nuclei, non-parametric statistical analysis is used to quantify differences in sizes and shapes of neuron somata. Data on 81,007 neuron somata from 11 patients are presented, as well as the total volume and surface area of the cochlear nuclei. Soma size of deaf patients, especially postlinguistically deaf ones, was smaller than that of controls, but not significantly so; the same was true for total cochlear nucleus volume. The data also indicate a greater soma size on the right side (as well as a greater ventral cochlear nucleus volume), a caudal-to-rostral decrease in soma size, and a correlation between soma size and shape. The data base is being continually extended and in future will allow comparisons with measurements from patients suffering from various forms of hearing loss. Author.

Argyrophilic nucleolar organizer region counts and prognosis in pharyngeal carcinoma. Pich, A., Pisani, P., Kzengli, M., Cappello, N., Navone, R. Department of Biomedical Sciences and Human Oncology, University of Turin, Italy. *British Journal of Cancer* (1991) Aug, Vol. 64 (2), pp. 327-32.

The prognostic significance of argyrophilic nucleolar organizer regions (AgNORs) has been evaluated in biopsy specimens from 61 primary squamous and undifferentiated carcinomas of the pharynx prior to therapy. The univariate Kaplan-Meier survival analysis showed a significant correlation between three- and five-year survival rates and the mean AgNOR number per tumour cell (p less than 0.001). No significant correlation was found between prognosis and patients age and sex, tumour location, clinical stage, histologic grade, extent of lymphocytic infiltration, HMFG-2 positivity of tumour cells and UCHL1, LN2, MB2 positivity of infiltrating lymphocytes. There was no significant association between AgNOR counts and tumour histologic grade or clinical stage. Multivariate survival analysis showed that only two variables were significantly correlated with prognosis: AgNOR counts (p less than 0.001) and the extent of lymphocytic infiltration (p less than 0.027). Our results indicate the prognostic value of AgNOR counts and suggest the use of this method as a significant parameter in the pretherapeutic assessment of the aggressiveness of pharyngeal carcinomas. Author.

Radiation effects on uptake of $^{99\text{Tc}}$ -hexamethylpropylem amine oxime (HMPAO) in head and neck tumours. Minn, H., Ahonen, A., Paul, R. Department of Oncology and Radiotherapy, Turku University Central Hospital, Finland. *British Journal of Cancer* (1991) Oct, Vol. 64 (4), pp. 735-40.

Twenty patients with malignant head and neck tumours were imaged with $^{99\text{Tc}}$ -labelled hexamethylpropylene amine oxime (HMPAO), a radiopharmaceutical generally used for blood flow studies. Before radiotherapy (RT), 93 per cent of the tumours could be detected with single photon emission computed tomography (SPECT) and 45 per cent with planar imaging. Whole tumour-to-background $^{99\text{Tc}}$ HMPAO uptake ratios ranged from 3.6 to 1.0 (mean 1.7 ± 0.6) in untreated tumours. There was a good correlation between tumour volume and uptake ($r = 0.69$, $p = 0.002$). Sixteen patients were reimaged during or shortly after radical RT. $^{99\text{Tc}}$ HMPAO uptake was significantly lower after treatment (mean uptake ratio 1.2 ± 0.3 , p less than 0.001). However, RT associated changes in $^{99\text{Tc}}$ HMPAO uptake were in agreement with the clinical response in only 63 per cent of the studies. This study

indicates that $^{99\text{Tc}}$ HMPAO SPECT imaging can be used for pretherapeutic localization of head and neck tumours. Although most tumours show a decrease in uptake after irradiation the poor association with tumour regression does not allow for reliable assessment of treatment response. Author.

Elevated P53 expression correlates with a history of heavy smoking in squamous cell carcinoma of the head and neck. Field, J. K., Spandidos, D. A., Malliri, A., Gosney, J. R., Yiagnisis, M., Stell, P. M. Department of Clinical Dental Sciences, University of Liverpool, UK. *British Journal of Cancer* (1991) Sep, Vol. 64 (3), pp. 573-7.

Expression of the tumour suppressor gene P53 was examined in squamous cell carcinoma of the head and neck using two P53 antibodies. PAb 421 and PAb 1801. Elevated P53 expression was found in 67 per cent of the 73 patients investigated. P53 expression was not found to correlate with whether the patient had been previously treated or not, nor any of the clinico-pathological parameters. However a correlation was found between the patients' smoking history and positive P53 staining. Six out of seven non-smokers did not express P53 whereas 29 of 37 heavy smokers were found to have elevated P53 expression (p less than 0.005). Also, of a group of ten patients who had given up smoking more than five years ago, nine had elevated expression. Epidemiological studies have shown a correlation between heavy smoking and head and neck cancer. The present study indicate a genetic link for this correlation. Author.

The transfacial approach to the postnasal space and retro-maxillary structures. Brown, A. M., Lavery, K.M., Millar, B. G. West Midlands Regional Plastic and Jaw Surgery Unit, Wordsley Hospital. *British Journal of Oral and Maxillofacial Surgery* (1991) Aug, Vol. 29 (4), pp. 230-6.

Various surgical approaches to the region are discussed, and the procedure according to Hernandez Altemir (1986) described in detail. Six cases are presented to illustrate how this versatile osteoplastic technique may be adapted for individual patients. Author.

Evaluation of various treatments for carcinoma of the mandibular region. Soderholm, A. L., Lindqvist, C., Sankila, R., Pukkala, E., Teppo, L. Department of Oral and Maxillofacial Surgery, Helsinki University Central Hospital, Finland. *British Journal of Oral and Maxillofacial Surgery* (1991) Aug, Vol. 29 (4), pp. 223-9.

Cancers of the mandibular region show the lowest survival rates of all oral cancers. In order to compare the effect of five different modes of treatment (including surgery and/or radiotherapy), a series of 159 patients was analysed. When adjustments were made for age, sex and tumour stage in a log-linear multivariate analysis, no differences between treatments in the five-year relative survival rates (RSR) could be demonstrated for stage I and II tumours. In stage III and IV tumours, radiation treatment alone resulted in poor survival. Between the other four treatments, all including surgery, no statistically significant differences in the five-year relative survival rates were found. Radiation therapy as an element in combination therapy may have postponed a recurrence but did not affect the five-year survival rate. For advanced tumours, mostly responsible for the low overall five-year RSR, higher survival rates can possibly be achieved by improving surgical treatment of the primary lesion and the neck. At present, however, only earlier diagnosis might significantly increase the survival rates. Author.

Fine needle cutting biopsy of lesions of the head and neck. Southam, J. C., Bradley, P. F., Musgrove, B. T. Department of Oral Medicine and Oral Pathology, University of Edinburgh. *British Journal of Oral and Maxillofacial Surgery* (1991) Aug, Vol. 29 (4), pp. 219-22.

One hundred and twenty-four fine needle cutting biopsies of lesions of the head and neck have been carried out over the last seven years. While the overall accuracy of diagnosis was 79 per cent, the accuracy of the 43 biopsies carried out during the last two years was 93 per cent. These results compare very favourably with published results of the accuracy of fine needle aspiration cytology. Author.

Prenatal diagnosis of nuchal cystic hygroma. MacLeod, A. M., McHugo, J. M. Department of Radiology, Birmingham Maternity Hospital, Edgbaston, UK. *British Journal of Radiology* (1991) Sep, Vol. 64 (765), pp. 802-7.

Twenty-seven cases of nuchal cystic hygroma were diagnosed prenatally over a five-year period at the Birmingham Maternity Hospital. Karyotypes were obtained in 20 cases, of which 14 (70 per cent)

were abnormal. Two-thirds of these represented various trisomy syndromes in contrast to other series where cases of Turner's syndrome have predominated. Twenty pregnancies were terminated. There was one intra-uterine death and two neonatal deaths. Hydrops was present in 15 cases, none of which survived to term. Associated structural abnormalities, mainly skeletal, renal and cardiac, were present in 18 cases. There were four long-term survivors with good quality of life, including both normal and abnormal karyotypes. In utero regression of the hygroma was documented in five cases, total in three and subtotal in two cases born with residual neck webbing. Author.

Basaloid squamous carcinoma of the hypopharynx and larynx associated with second primary tumours. Seidman, J. D., Berman, J. J., Yost, B. A., Iseri, O. A. Department of Pathology, University of Maryland School of Medicine, Baltimore. *Cancer* (1991) Oct 1, Vol. 68 (7), pp. 1545-9.

Basaloid squamous carcinoma is believed to be a histologically distinct variant of squamous cell carcinoma of the neck region with 11 cases reported. Two cases arising in the pyriform fossa and vallecula are reported, both of which were associated with second primary malignant tumours: esophageal small cell carcinoma and palatal squamous cell carcinoma, respectively. The authors suggest that basaloid squamous carcinoma may be associated with a high incidence of second primary tumours in the upper gastrointestinal tract of larynx. Author.

Chemotherapy for recurrent or metastatic carcinoma of the nasopharynx. A review of the Princess Margaret Hospital Experience. Choo, R., Tannock, I. Department of Medicine, Princess Margaret Hospital, Toronto, Ontario, Canada. *Cancer* (1991) Nov 15, Vol. 68 (10), pp. 2120-4.

There is little information about the ability of chemotherapy to achieve palliation for patients with recurrent or metastatic carcinoma of the nasopharynx. Therefore, the authors reviewed the records of all patients who had received chemotherapy for this disease at the Princess Margaret Hospital between 1970 and 1989. Seventy patients were identified who had measurable disease and had not received prior systemic therapy. Forty patients received single agents or nonaggressive drug combinations, most of them before 1980. There were three complete responses (CR) and seven partial responses (PR) among this group for a response rate of 25 per cent (95 per cent confidence limits, 13 to 41 per cent). Thirty patients received either drug combinations that were active in aggressive lymphomas or cisplatin-based combinations. There were seven CR and 14 PR among this group for a response rate of 70 per cent (95 per cent confidence limits, 51 to 85 per cent). Two patients who were treated aggressively are still alive and in complete remission at three and 12 years. This type of retrospective review cannot exclude bias caused by patient selection. However, in the absence of randomized trials, the authors suggest the following: (1) carcinoma of the nasopharynx should be considered a malignant neoplasm that is distinct from squamous cell cancer in other sites of the head and neck; and (2) selected patients with recurrent or metastatic carcinoma of the nasopharynx should receive aggressive combination chemotherapy. Author.

Chondrosarcoma of the larynx after radiation treatment for vocal cord cancer. Glaubiger, D. L., Casler, J. D., Garrett, W. L., Yuo, H. S., Lillis-Hearne, P. K. Department of Radiology, Letterman Army Medical Centre, San Francisco, California. *Cancer* (1991) Oct 15, Vol. 68 (8), pp. 1828-31.

The case of a 57-year-old man with chondrosarcoma of the laryngeal cartilage is presented, occurring 16 years after radiation treatment for squamous cell carcinoma of the right true vocal cord. Chondrosarcoma of the larynx is an uncommon tumour. The location, grade, and time elapsed from initial treatment make it probable that this patient's chondrosarcoma is associated with his prior radiation treatment. However, it is a rare occurrence, this being the second case reported in the literature. Author.

On the origin of wave II of the auditory brain stem evoked response. Ananthanarayan, A. K., Durrant, J. D. University of Tennessee, Knoxville. *Ear and Hearing* (1991) Jun, Vol. 12 (3), pp. 174-9.

The generators of the several components of the auditory brain stem evoked response (ABR) have yet to be completely identified. However, there is compelling evidence to suggest specific generators for waves I and II, namely the distal and proximal portions of the audi-

tory nerve, respectively. Although there is no question concerning the origin of wave I, there remains some uncertainty as to whether or not wave II arises entirely from the auditory nerve. The purpose of this study was to examine the behaviour of wave II, as recorded via vertical versus horizontal derivations, in an effort to determine if wave II in both derivations is equally affected by stimulus manipulations (i.e. as would be presumed from a single generator theory). ABR recordings were obtained from normal-hearing young adults using vertical (hairline-to-ipsilateral mastoid and hairline-to-contralateral mastoid) and horizontal (mastoid-to-mastoid) derivations of responses to clicks presented at a variety of stimulus levels (40-80 dB nHL) and rates (19.9-59.9/sec). The results indicate a shorter latency for wave II recorded in the horizontal derivation (wave IIa), compared to the vertical derivation (wave IIb). Also, wave IIa was found to be more susceptible to increased stimulus rate and exhibited a different latency behaviour than wave IIb. These findings seem difficult to reconcile on the basis of a single generator for waves IIa and IIb. Author.

Evaluation of three strategies for fitting hearing aids binaurally. Punch, J. L., Jenison, R. L., Allan, J., Durrant, J. D. Michigan State University, East Lansing. *Ear and Hearing* (1991) Jun, Vol. 12 (3), pp. 205-15.

Three strategies for evaluating optimum frequency shaping and noise reduction in binaural digital hearing aids were compared in a repeated-measures design, using a new preference-based prescriptive fitting method. These strategies consisted of using preferred frequency shaping and noise reduction values binaurally: (1) based on monaural testing; (2) based on separate evaluations of each ear; and (3) based on evaluation of a second ear while subjects wore an aid programmed with the preferred values in the first ear. Individually preferred characteristics were programmed for 17 hearing-impaired subjects, most of whom exhibited symmetrical sensorineural hearing loss. Each subject was administered intelligibility estimation and midplane localization measurements in the laboratory, as well as a questionnaire survey based on situational listening in the real world. No statistically significant differences in preferences for either frequency shaping or noise reduction were found for the three fitting strategies, suggesting that monaural testing is sufficient in symmetrical cases to provide information for binaural fitting. Related to this finding, differences across binaural conditions were minimal for both intelligibility estimation and localization results. A significant improvement in localization performance under binaural conditions over monaural listening, however, was documented by both the laboratory and the real world data. A strong overall preference for binaural over monaural amplification was also documented under real world conditions. Author.

Auditory event-related potentials in obstructive sleep apnea: effects of treatment with nasal continuous positive airway pressure. Rumbach, L., Krieger, J., Kurtz, D. Service d'Explorations Fonctionnelles du Systeme Nerveux, Clinique Neurologique, CHU, Strasbourg, France. *Electroencephalography and Clinical Neurophysiology* (1991) Sep-Oct, Vol. 80 (5), pp. 454-7.

Event-related potentials (ERPs) were recorded in 47 patients with obstructive sleep apnea (OSA) syndrome prior to and after six weeks of treatment with continuous positive airway pressure (CPAP). Compared with a control group, the OSA patients showed ERP abnormalities: lengthened P3 latencies and decreased N2-P3 amplitudes. After six weeks of CPAP treatment, there was a highly significant improvement in the abnormal ERPs: the P3 and N2 latencies were shortened, but remained longer than in controls, and the N2-P3 and N1-P2 amplitudes were increased. No correlations could be established with various sleep variables. ERPs may be used as an electrophysiological marker of brain dysfunction; treatment of OSA with CPAP is probably responsible for functional brain modifications. On the other hand, possible relationships between the ERP abnormalities and the neuropsychological disorders observed in OSA remain to be established. Author.

Neuromagnetic responses elicited by auditory stimuli in dichotic listening. Kuriki, S., Takeuchi, F. Research Institute of Applied Electricity, Hokkaido University, Sapporo, Japan. *Electroencephalography and Clinical Neurophysiology* (1991) Sep-Oct, Vol. 80 (5), pp. 406-11.

We measured N1m and P2m components of the magnetic field responses that were elicited by random series of a tone burst given to the left ear and a monosyllabic speech sound given to the right ear. The magnetic responses had smaller amplitudes and/or longer peak

latencies of the N1m and the P2m when the stimulus was preceded by a stimulus at the same ear than when preceded by a stimulus at the different ear. This reduction of the response by preceding stimulation of the same ear was significant over the hemisphere contralateral, but not ipsilateral, to the ear stimulated. The peak latencies of N1m and P2m were significantly longer in the response over the hemisphere contralateral than ipsilateral to the stimulated ear. Author.

Differential auditory processing continues during sleep. Nielsen-Bohlman, L., Knight, R. T., Woods, D. L., Woodward, K. Department of Neurology, University of California, Davis. *Electroencephalography and Clinical Neurophysiology* (1991) Oct, Vol. 79 (4), pp. 281–90.

Auditory evoked potentials (AEPs) were used to examine selective stimulus processing in sleep. In waking, repetitive stimuli generate exogenous P1, N1 and P2 components of the auditory evoked potential (AEP). Deviant stimuli generate endogenous cognitive components including the mismatch negativity (MMN), N2 and P3 components. We examined long-latency auditory evoked potentials elicited by repetitive and deviant stimuli during waking and stage II–IV sleep to assess whether stimulus deviance is detected during sleep. The waking P1, N1b and P2 had maximal amplitudes at fronto-central scalp sites, with additional peaks (N1a, N1c) at temporal sites. Deviant tones generated a frontal maximal MMN, and complex novel tones generated an additional P3 component maximal at centro-parietal sites. During stages II–IV sleep N1a, b, c amplitudes were reduced. During stage II sleep all stimuli generated increased P2 amplitudes and a late negative component (N340). Deviant stimuli generated greater P2 and N340 amplitudes than frequent stimuli in stage II sleep, as well as an additional P420 component. In stage III–IV sleep the P420 was absent and the AEP was dominated by a negativity of long duration whose amplitude increased in response to deviant stimuli. These data indicate that auditory evoked activity changes from wakefulness to sleep. The differential response to deviant sounds observed during waking and all sleep stages supports the theory that selective processing of auditory stimuli persists during sleep. Author.

Electroencephalography, evoked potentials and MRI brain scans in saturation divers. An epidemiological study. Todnem, K., Skeidsvoll, H., Svihus, R., Rinck, P., Riise, T., Kambestad, B. K., Aarli, J. A. Norwegian Underwater Technology Centre, Bergen. *Electroencephalography and Clinical Neurophysiology* (1991) Oct, Vol. 79 (4), pp. 322–9.

One hundred and fifty-six air and saturation divers, mean age 33.6 (range 21–49) years, were examined. The control group consisted of 100 offshore workers and policemen with the health requirements to have a diving certificate, mean age 34.0 (range 22–48) years. The examination protocol included electroencephalography (EEG), visual evoked potentials (VEPs), brainstem auditory evoked potentials (BAEPs) and magnetic resonance imaging (MRI) of the brain and brainstem. Abnormal EEGs, with focal slow waves mostly in the temporal regions and sharp potentials, were found in 18 per cent of the divers and in 5 per cent of the controls ($p = 0.003$). Abnormal EEGs correlated significantly with the exposure to saturation diving ($p = 0.0006$) and the prevalence of decompression sickness ($p = 0.0102$). Alcohol consumption was negatively correlated with abnormal EEGs ($p = 0.0006$). Mean I–III BAEP latency was increased ($p = 0.047$) in the diver group. P100 VEP latency decreased with age (21–49 years). High signal intensity changes obtained by MRI were found in 33 per cent of the divers and in 43 per cent of the controls ($p = 0.14$). It is concluded that the nervous system of saturation divers is influenced by their occupation and that EEG is a useful method in the health examination of divers. Author.

New markers for the neurofibromatosis-2 region generated by microdissection of chromosome 22. Fiedler, W., Claussen, U., Ludecke, H. J., Senger, G., Horsthemke, B., Geurts-Van-Kessel, A., Goertzen, W., Fahsold, R. Institut für Humangenetik, Universität Erlangen, Federal Republic of Germany. *Genomics* (1991) Jul, Vol. 10 (3), pp. 786–91.

To identify new DNA markers around the neurofibromatosis-2 gene on human chromosome 22, the critical region (22q12-q13-1) was microdissected and microcloned from GTG-banded metaphase chromosomes. Eighteen thousand recombinant clones were obtained. Twenty-seven of 55 clones tested (50 per cent) detected single-copy DNA sequences. Nine of nine clones analysed in detail were found to map to chromosome 22. Interestingly one clone

(EAN04) is part of the leukemia inhibitory factor gene which has previously been mapped to 22q11.2-q13.1. Four clones (EAN01, EAN47, EAN57, and EAN68) detect DNA polymorphisms. These probes were used to compare constitutional and tumour genotypes of 41 patients with acoustic neurinoma. Loss of constitutional heterozygosity was identified in 17 of 31 informative cases (55 per cent). From our data we conclude that the microdissection library is a valuable resource for physical and genetic mapping studies in neurofibromatosis-2. Author.

The need for intubation in serious upper respiratory tract infection in pediatric patients (a retrospective study). Sofer, S., Dagan, R., Tal, A. Pediatric Intensive Care Unit, Soroka Medical Centre, Beer-Sheva, Israel. *Infection* (1991) May–Jun, Vol. 19 (3), pp. 131–4.

Serious bacterial infections occurred in ten children (1.4 per cent) of 710 patients with croup admitted to the Soroka Medical Centre during the years 1983–1989. Sixty-four patients (9 per cent of all croup patients) were admitted to the pediatric intensive care unit (PICU) and 13 of them (20 per cent) required intubation. Bacterial infections were noted in nine of the 13 intubated patients, in none of the other 51 PICU patients who did not require intubation and in one of the 646 patients (0.2 per cent) who were not admitted to the PICU (p less than 0.001). There was no difference in age, ethnic origin, or body temperature on arrival between the two PICU groups. Causative microorganisms were isolated from blood samples (three cases) and tracheal pus (eight cases). All intubated PICU patients were seriously ill: eight had bacterial tracheitis and one supraglottitis. Patients with bacterial tracheitis required frequent suctioning of the trachea for copious purulent secretions. The single patient with bacterial infection who was not admitted to the PICU had transient bacteremia. We conclude that the need for intubation in croup patients was an indicator for the presence of a serious bacterial infection. Author.

Beta-lactamase production and bacterial tolerance in recurrent acute otitis media. Roos, K., Lind, L., Holm, S. E. ENT Department, Lundby Hospital, Goteborg, Sweden. *International Journal of Pediatric Otorhinolaryngology* (1991) Apr, Vol. 21 (2), pp. 155–61.

Different reasons for treatment failure or relapse of acute otitis media (AOM) have been suggested. In this study 38 children (eight treatment failures, 13 relapses of AOM within one month and 17 with a new AOM) were compared to 25 matching healthy children, regarding beta-lactamase producing bacteria and tolerance to penicillin V and ampicillin. *Branhamella catarrhalis* was the most common bacteria found in the nasopharynx and was isolated in 60 per cent of children with AOM and in 48 per cent of the control group. Fifty-two per cent of the children classified as treatment failure or relapse of AOM had aerobic beta-lactamase producing bacteria in NPH. No bacteria tolerant to penicillin or ampicillin were found. Thus, beta-lactamase-producing bacteria seem to play a decisive role in treatment failure and relapse of AOM. On the other hand, tolerance to penicillin V or ampicillin does not seem to have any impact on healing of AOM. Author.

Management of epistaxis in children. Ruddy, J., Proops, D. W., Pearman, K., Ruddy, H. Department of ENT Surgery, Birmingham Children's Hospital, UK. *International Journal of Pediatric Otorhinolaryngology* (1991) Apr, Vol. 21 (2), pp. 139–42.

A randomized clinical trial of antiseptic nasal carrier cream (Naseptin) and silver nitrate cautery in the treatment of epistaxes in children was carried out. Fifty-four per cent responded to cautery with silver nitrate and 50 per cent to treatment with Naseptin antiseptic carrier cream. There were 24 patients in each group. No statistically significant difference was observed between the groups when tested with the χ^2 -test. We believe that the first line treatment of epistaxis in children should be the use of antiseptic nasal cream. Author.

Eustachian tube function in otitis-prone and healthy children. Stenstrom, C., Bylander-Groth, A., Ingvarsson, L. Department of Oto-rhino-laryngology, University of Lund, Malmo General Hospital, Sweden. *International Journal of Pediatric Otorhinolaryngology* (1991) Apr, Vol. 21 (2), pp. 127–38.

To evaluate the significance of Eustachian tube function in recurrent acute otitis media (rAOM), 50 otitis-prone children (greater than 11 episodes of AOM) were compared with 49 children without rAOM. Tubal function tests were: initial middle-ear pressure, active tubal function (muscular opening function), passive function (pressure

opening and closing levels), and inflationary and deflationary capacity. The otitis-prone children were found to have significantly poorer active tubal function than controls. Other test results did not differ between the two groups. The otitis-prone children were also divided into subgroups with and without intermittent secretory otitis media (SOM), and with and without allergy, but no differences in tubal function tests were found between the different subgroups. The findings suggest active tubal function to be the most significant variable regarding proneness to rAOM, but not to distinguish between particular subgroups of otitis-prone children. The available technique for testing Eustachian tube function is insufficiently sensitive, however, to be conclusive in individual cases, and it is still not possible to predict individual outcome of the illness from tubal function test results alone. Author.

Psychological aspects of psychogenic deafness in children. Yamamoto, M., Kanzaki, J., Ogawa, K., Asano, K. Department of Otolaryngology, School of Medicine, Keio University, Tokyo, Japan. *International Journal of Pediatric Otorhinolaryngology* (1991) Apr, Vol. 21 (2), pp. 113–20.

Twenty-nine children with psychogenic deafness were investigated from audiological and psychological aspects. ABR and Bekey audiometry were useful for diagnosing psychogenic deafness. The elapsed time from the start of treatment to audiometric recovery was significantly shorter in patients receiving psychological treatment, indicating that treatment by a team of otologists and counsellors was able to hasten recovery in children with psychogenic deafness. The pattern of hearing recovery in the treated group was classified into three types and in the control group into four types. Counselling seemed to have a positive effect on patients with fluctuating improvement. In the patients in the treated group, the elapsed time to audiometric recovery from the beginning of psychological treatment was 7.5 months; however, in the control group recovery took 17.1 months. Psychological treatment revealed that the clinical course of psychogenic deafness in children seemed to have some relation to the patient's personality and psychological stresses. Author.

Is attachment of bacteria to the epithelial cells of the nasopharynx the key to otitis media? Stenfors, L.E., Raisanen, S. Department of Otolaryngology, University of Tromsø, Norway. *International Journal of Otorhinolaryngology* (1991) Jul, Vol. 22 (1) pp. 1–8.

Epithelial cells from the nasopharynx of 42 young healthy individuals were obtained by swabbing. The filtered cellular mixture was stained with acridine orange and bacteria attached to the epithelial cells were counted using a fluorescence microscope. Simultaneously qualitative and quantitative bacteriological analyses were performed. Young individuals (less than two years) had significantly more attached bacteria than older ones (11–15 years) ($p = 0.0001$). The presence of middle ear pathogens in the nasopharynx of young children was significantly more prominent than in the older age groups (p less than 0.001). Attachment of middle ear pathogens to nasopharyngeal epithelial cells of young individuals may predispose to otitis media. Author.

Airway obstruction in Hurler's syndrome—radiographic features. Myer, C. M. Department of Otolaryngology and Maxillofacial Surgery, Children's Hospital Medical Centre, Cincinnati, OH 45229. *International Journal of Pediatric Otorhinolaryngology* (1991) Jul, Vol. 22 (1), pp. 91–6.

The mucopolysaccharidosis (MPS) diseases are progressive clinical disorders which are characterized by a deficiency of lysosomal enzymes. In MPS I (Hurler's syndrome), reduced activity of alpha-L-iduronidase leads to intralysosomal storage of dermatan and heparan sulfate in various tissues. Airway obstruction is a frequent problem in these patients, often secondary to abnormal cervical vertebra, a short neck, a high epiglottis, and mucopolysaccharide infiltration of the soft tissues in the upper aerodigestive tract. Evaluation of these abnormalities may include plain film and videofluoroscopic examinations of the airway. The therapeutic and diagnostic implications of such studies are discussed in a review of four patients with Hurler's syndrome manifesting upper airway obstruction. Author.

Hearing loss and ear disorders in Malaysian school children. Elango, S., Purohit, G. N., Hashim, M., Hilmi, R. Department of Otorhinolaryngology, School of Medical Sciences, University Sains Malaysia, Kota Bharu. *International Journal of Pediatric Otorhinolaryngology* (1991) July, Vol. 22 (1), pp. 75–80.

In Malaysia 1,307 randomly selected primary school children were

screened to find out the prevalence of hearing loss and middle ear disorders. Seventy-six students (5.81 per cent) failed the screening audiometric test. There were 95 students (7.26 per cent) with middle ear disorders. History of ear discharge was absent in 24 out of 57 cases with CSOM (42.11 per cent) (p less than 0.001). Forty-three out of 95 children having middle ear disorders passed the screening audiometric test (p less than 0.01 Fisher exact test). Screening audiometric test fails to detect about 46 per cent of cases with middle ear disorders. Screening audiometric test and otological examination if conducted by the school health medical officers regularly will be able to detect almost all the cases with hearing loss and middle ear disorders. Author.

The impact of a syndromal diagnosis on surgery for congenital minor ear anomalies. Cremers, C. W., Teunissen, E. Institute of Otorhinolaryngology, University Hospital of Nijmegen, The Netherlands. *International Journal of Pediatric Otorhinolaryngology* (1991) Jul, Vol. 22 (1), pp. 59–74.

Between 1964 and 1986, 104 ears of 86 patients with a minor congenital ear anomaly underwent an exploratory tympanotomy at the Institute of Otorhinolaryngology of the University Hospital Nijmegen. A classification of these anomalies is proposed based on the surgical findings and results. The four groups in this classification are: isolated stapes ankylosis, stapes ankylosis associated with an anomaly of the malleus and incus, an isolated anomaly of the malleus and incus with a mobile stapes footplate and finally, aplasia of the oval and/or round window. In a total of 29 ears (22 patients) out of these 104 ears, the anomaly formed part of a syndrome. The various syndromes and the anomalies encountered are discussed. The impact of a syndromal diagnosis on the outcome of reconstructive ear surgery is discussed per syndrome. Author.

The Jervell and Lange-Nielsen syndrome. Cusimano, F., Martines, E., Rizzo, C. Department of Audiology, University of Palermo, Italy. *International Journal of Pediatric Otorhinolaryngology* (1991) Jul, Vol. 22 (1), pp. 49–58.

Deafness and electrocardiographic changes (prolongation of the Q-T interval and inversion of the T wave) with a clinical picture of syncopal attacks and sudden death, were described as a distinct syndrome by Jervell and Lange-Nielsen, in 1957. The syndrome is inherited as an autosomal recessive trait. In this study, all the cases reported since 1957 and their proposed prevalence are reviewed. The authors describe the four cases they have studied, all of which presented congenital sensorineural hearing loss and electrocardiographic changes characteristic of the syndrome. The relatively high number of cases they have encountered casts doubt on literature that states that the syndrome occurs more frequently in Northern-European populations. Consequently, it is advisable to perform an electrocardiogram in all children affected by congenital deafness. Author.

Pregnancy-induced hypertension and congenital hearing loss. Wells, M. D. William Harvey Hospital, Ashford, Kent, UK. *International Journal of Pediatric Otorhinolaryngology* (1991) Jul, Vol. 22 (1), pp. 39–47.

It has been suggested that pregnancy-induced hypertension (PIH-preeclampsia or toxemia of pregnancy) may cause sensorineural hearing loss (SNHL) in the offspring. To establish the validity of this concept a clinical survey of the prevalence of congenital hearing loss in relation to PIH in the South East Kent Health district in the United Kingdom over a period of four years was undertaken. Description of the temporal bones in a case of PIH is presented. The total number of live-births in this period was 12,927, out of which 512 mothers (3.9 per cent) were diagnosed as having PIH. To date 17 cases of bilateral SNHL have been diagnosed in this period (excluding known syndromes, conductive hearing loss and unilateral SNHL). One of the mothers of these children had PIH. It is possible that otologists, in the absence of any obvious cause, have attributed the cause of bilateral SNHL to PIH. Histopathological findings in temporal bones from a 29-week fetus, whose cause of death was severe maternal hypertension, showed massive haemorrhages in the inner ear and middle ear and internal auditory meatus, a frequent finding in temporal bones obtained at autopsy from fetuses and neonates who were born prematurely. This study suggests that PIH per se is unlikely to cause SNHL in the newborn. Author.

Sound exposures and hearing thresholds of symphony orchestra musicians. Royster, J. D., Royster, L. H., Killion, M. C. Environmental Noise Consultants, Inc., Raleigh, North Carolina 27622-

0698. *Journal of the Acoustical Society of America* (1991) Jun, Vol. 89 (6), pp. 2793–803.

To assess the risk of noise-induced hearing loss among musicians in the Chicago Symphony Orchestra, personal dosimeters set to the 3-dB exchange rate were used to obtain 68 noise exposure measurements during rehearsals and concerts. The musicians' Leq values ranged from 79–99 dB A-weighted sound pressure level (dB(A)), with a mean of 89.9 dB(A). Based on 15 h of on-the-job exposure per week, the corresponding 8 h daily Leq (excluding off-the-job practice and playing) ranged from 75–95 dB(A) with a mean of 85.5 dB(A). Mean hearing threshold levels (HTLs) for 59 musicians were better than those for an unscreened nonindustrial noise-exposed population (NINEP), and only slightly worse than the 0.50 fractile data for the ISO 7029 (1984) screened presbycusis population. However, 52.5 per cent of individual musicians showed notched audiograms consistent with noise-induced hearing damage. Violinists and violists showed significantly poorer thresholds at 3–6 kHz in the left ear than in the right ear, consistent with the left ear's greater exposure from their instruments. After HTLs were corrected for age and sex, HTLs were found to be significantly better for both ears of musicians playing bass, cello, harp, or piano and for the right ears of violinists and violists than for their left ears or for both ears of other musicians. For 32 musicians for whom both HTLs and Leq were obtained, HTLs at 3–6 kHz were found to be correlated with the Leq measured. Author.

Effect of different types of auditory stimulation on vowel formant frequencies in multichannel cochlear implant users. Svirsky, M. A., Tobey, E. A. Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge 02139. *Journal of the Acoustical Society of America* (1991) Jun, Vol. 89 (6), pp. 2895–904.

Two experiments investigating the effects of auditory stimulation delivered via a Nucleus multichannel cochlear implant upon vowel production in adventitiously deafened adult speakers are reported. The first experiment contrasts vowel formant frequencies produced without auditory stimulation (implant processor OFF) to those produced with auditory stimulation (processor ON). Significant shifts in second formant frequencies were observed for intermediate vowels produced without auditory stimulation; however, no significant shifts were observed for the point vowels. Higher first formant frequencies occurred in five of eight vowels when the processor was turned ON versus OFF. A second experiment contrasted productions of the word 'head' produced with a FULL map, OFF condition, and a SINGLE channel condition that restricted the amount of auditory information received by the subjects. This experiment revealed significant shifts in second formant frequencies between FULL map utterances and the other conditions. No significant differences in second formant frequencies were observed between SINGLE channel and OFF conditions. These data suggest auditory feedback information may be used to adjust the articulation of some speech sounds. Author.

Immunoglobulin concentrations in nasal secretions differ between patients with an IgE-mediated rhinopathy and a non-IgE-mediated rhinopathy. Swart, S. J., van der Baan, S., Steenbergen, J. J., Nauta, J. J., van-Kamp, G. J., Biewenga, J. Department of Cell Biology, Medical Faculty, Vrije Universiteit, Amsterdam, The Netherlands. *Journal of Allergy and Clinical Immunology* (1991) Oct, Vol. 88 (4), pp. 612–9.

Nasal secretions from patients with an IgE-mediated rhinopathy, patients with a non-IgE-mediated rhinopathy, and healthy control subjects were collected with a newly developed direct aspiration system. Total protein, albumin, secretory IgA (sIgA), IgE, IgG, and IgM concentrations were measured in the nasal secretions to detect whether the nasal pathology is reflected in nasal secretion protein concentrations. It was found that protein and immunoglobulin concentrations in nasal secretions were inversely related to amount of secretion in the nasal cavity. Both patients' groups had a significantly higher sIgA to protein ratio than the healthy control subjects. Furthermore, patients with an IgE-mediated rhinopathy had significantly higher sIgA and IgM to total protein ratios in their nasal secretions than patients with a non-IgE-mediated rhinopathy. Probably these differences are due to changes in immunoregulation. author.

Bacteriology of acute otitis media in adults. Celin, S.E., Bluestone, C. D., Stephenson, J., Yilmaz, H. M., Collins, J.J. Department of Otolaryngology, University of Pittsburgh, School of Medicine, PA. *JAMA* (1991) Oct 23–30, Vol. 266 (16), pp. 2249–52.

OBJECTIVE: The objective of this study was to determine the bacteriology of acute otitis media in adults. Although this has frequently been studied in children, no data have recently been reported from adults in the United States. Additionally, information on the prevalence of *Haemophilus influenzae* as a causative organism in acute otitis media in adults has not been available. **DESIGN:** Middle-ear aspirates for cultures were obtained by myringotomy from adults meeting entry criteria. **SETTING:** Emergency department, Eye and Ear Hospital of Pittsburgh, Pa. **PATIENTS:** Thirty-four patients (volunteer sample) met the eligibility requirements. Exclusion criteria included history of chronic otitis media, recent antibiotic therapy, immunosuppressive illnesses, or prior otologic surgery. **INTERVENTION:** Ten days of oral cefuroxime axetil (250 mg) was prescribed. **MAIN OUTCOME MEASURES:** Patients were followed closely for at least six weeks. Aerobic and anaerobic cultures were incubated and evaluated per the scheduled protocol. **RESULTS:** *Haemophilus influenzae* and *Streptococcus pneumoniae* were grown on culture of specimens from nine and seven patients (26 per cent and 21 per cent), respectively. Twenty-two per cent (2/9) of the *H influenzae* isolates and the single isolate of *Moraxella catarrhalis* produced beta-lactamase (9 per cent overall). **CONCLUSIONS:** The present results suggest that, as in children, amoxicillin would be an appropriate first-line agent for empiric therapy of acute otitis media in adults. Antimicrobials inactive against *H influenzae* (e.g. penicillin V, cephalixin, erythromycin, or tetracyclines) are not appropriate for initial therapy. Antimicrobials with efficacy against organisms producing beta-lactamase, such as cefuroxime axetil, which was used to treat the study patients, do not appear to be required for routine initial therapy in adults. However, they would be appropriate when an organism producing beta-lactamase is isolated from the middle ear or when a patient fails to improve rapidly on amoxicillin therapy. Author.

A new method to measure nasal impedance in spontaneously breathing adults. Tawfik, B., Sullivan, K. J., Chang, H. K. Department of Biomedical Engineering, University of Southern California, Los Angeles 90089-1451. *Journal of Applied Physiology* (1991) Jul, Vol. 71 (1), pp. 9–15.

As an alternative to standard rhinomanometric methods, we applied forced oscillations at the mouth of five normal subjects and determined their nasal impedance with a novel method involving flow subtraction. Pressure oscillations of constant amplitude were applied at the mouth of a subject both when the nostrils were open and when they were closed with a noseclip. The airflows measured under the two conditions they were subtracted to yield the oscillating nasal airflow at the imposed pressure. The resultant pressure-flow relation defined the nasal impedance of the subject. For frequencies between 3 and 15 Hz, the transnasal pressure-flow relation was well described by a linear lumped parameter model consisting of a resistive and inertial element. Nasal resistance obtained with flow subtraction did not differ significantly from control measurements obtained while the subjects performed the Valsalva manoeuvre. In contrast, nasal inertance obtained with flow subtraction was approximately twice that obtained with the Valsalva method. The difference between inertances may reflect structural changes in nasopharyngeal dimensions that occur with the Valsalva manoeuvre. We conclude that the mechanical impedance of the nasal passage may be determined during spontaneous breathing from the response to imposed forced oscillations at the mouth. The noninvasive nature of this method suggests that it may be simpler to implement than traditional rhinomanometric methods. Author.

Middle ear adenoma: tumour of mixed mucinous and neuroendocrine differentiation. Hale, R.J., McMahon, R. F., Whitaker, J. S. Department of Histopathology, Wythenshawe Hospital. *Journal of Clinical Pathology* (1991) Aug, Vol. 44 (8), pp. 652–4.

Two cases of progressive hearing loss due to middle ear tumours are described. The histological characteristics numbered intraluminal mucin production and neuroendocrine features, as shown by argyrophilia and ultrastructural demonstration of dense core granules. These tumours have been known by many different names, reflecting the controversies relating to their presumed histogenesis and differentiation. The currently preferred designation is middle ear adenoma, and these two cases provide further evidence for dual lines of differentiation. Author.

Excision of exposed cartilage for management of Mohs surgery defects of the ear. Larson, P. O., Ragi, G., Mohs, F. E., Snow, S. N. Department of Surgery, University of Wisconsin, Madison 53705.

Journal of Dermatologic Surgery and Oncology (1991) Sep, Vol. 17 (9), pp. 749–52.

Cartilage of the ear is often exposed during Mohs surgical procedures. Fenestration of the cartilage with a skin punch has been recommended to stimulate granulation tissue where the perichondrium has been destroyed. This article describes an alternative method—the excision of a window through the exposed cartilage, fully exposing the perichondrium on the other side of the cartilage. This promotes the rapid healing by second intention or provides a vascular bed for immediate skin grafting. Also, aggressive excision of nonviable cartilage helps prevent chondritis or perichondritis. Author.

Presence and integration of human papillomavirus type 6 in a tonsillar carcinoma. Bercovich, J. A., Centeno, C.R., Aguilar, O. G., Grinstein, S., Kahn, T. Virology Laboratory, Buenos Aires Children's Hospital, Argentina. *Journal of General Virology* (1991) Oct, Vol. 72 (Pt 10), pp. 2569–72.

Human papillomavirus type 6 subtype a (HPV-6a) was detected in a human invasive tonsillar carcinoma. Southern blot hybridization analysis showed the presence of additional bands when using non-cutting and single-cut restriction enzymes. Molecular cloning yielded two recombinant clones of 8.0 and 1.4 kb in size. The first represents the complete HPV-6a genome. Sequence analysis of the second clone showed a 0.6 kb DNA sequence corresponding to the L2 region of HPV-6a, whereas the rest belongs to cellular sequences. These data show the presence of a usually low risk HPV type in an invasive carcinoma, a tan unusual infection site, with viral DNA integrated into the host genome. These findings add evidence in support of the hypothesis of a relationship between HPV infection and at least some oro-respiratory cancers. Author.

Temporalis myofascial flap for maxillofacial reconstruction. Colmenero, C., Martorell, V., Colmenero, B., Sierra, I. Department of Oral and Maxillofacial Surgery, La Paz, General Hospital, Madrid, Spain. *Journal of Oral and Maxillofacial Surgery* (1991) Oct, Vol. 49 (10), pp. 1067–73.

To date, the temporalis myofascial flap has been used only to a limited extent for reconstruction in the maxillofacial region. Experience gained with 26 temporalis flaps in reconstruction of tissue defects in the periorbital region, skull base, maxilla, and oral cavity is presented. Only one patient developed total necrosis of the flap; significant necrosis did not occur in any other patient. The anatomy of the flap and surgical technique are briefly presented. Author.

Calcium regulation of ciliary beat frequency in human respiratory epithelium in vitro. Di Benedetto, G., Magnus, C. J., Gray, P. T., Mehta, A. Department of Medicine, Faculty of Clinical Sciences, University College, London. *Journal of Physiology (London)* (1991) Aug, Vol. 439, pp. 103–13.

The changes in ciliary beat frequency (CBF) of human nasal respiratory epithelial cells were measured in vitro with a photometric technique following exposure to either 4-bromo-calcium ionophore A23187 (4-Br-A23187) or trifluoperazine (TFP), an inhibitor of calmodulin-sensitive calcium-dependent protein kinases. Changes in intracellular free calcium concentrations in response to 4-Br-A23187 were studied using a fluorescent dye (Fura-2). (2) Addition of 10⁻⁵ M 4-Br-A23187 caused a time-dependent (p less than 0.01) rise in CBF. The increment in CBF was statistically significant 10 min after challenge (+10 per cent; p less than 0.01) and was sustained for at least 1 h, with maximal stimulation after 40 min (+18 per cent; p less than 0.01). (3) Exposure to 10⁻⁵ M 4-Br-A23187 caused an immediate increase in intracellular free calcium concentration, which preceded the rise in CBF. (4) TFP (10⁻⁴ M) caused a reduction of baseline CBF (-10 per cent; p less than 0.01) and prevented the expected rise when the cells were subsequently exposed to 10⁻⁵ M 4-Br-A23187. (5) We conclude that: (1) calcium ionophore stimulates the CBF of human respiratory cells; (2) this effect is mediated through a calmodulin-sensitive system, since it is abolished in the presence of TFP; (3) the same pathway appears to control the basal CBF of these cells, since TFP also decreases CBF. Author.

Anxiety and depression in tinnitus sufferers. Halford, J. B., Anderson, S. D. Department of Neurophysiology, Cromwell Hospital, London, UK. *Journal of Psychosomatic Research* (1991) Vol. 35 (4–5), pp. 383–90.

This paper focuses upon the relationship between tinnitus and personality. One hundred and twelve members of a tinnitus self-help

group completed psychological and tinnitus questionnaires. In line with prior studies we found that tinnitus was associated with elevated anxiety trait and depression. Unlike previous work, use of a validated subjective tinnitus scale allowed us to directly test the strength of association. Although both anxiety trait and depressive tendency were significantly correlated with overall tinnitus severity, the coefficients were of low magnitude. Advancing age was related to a reduction in depressive tendency; and being male was associated with lower anxiety and depression scores. While hypothesizing a bidirectional causality between personality and the impact of tinnitus, we acknowledge that only longitudinal research can unequivocally test this. Author.

Emotional stability; its relationship to confidence in maintaining balance. Hallam, R.S., Hinchcliffe, R. Department of Psychology, University College, London, UK. *Journal of Psychosomatic Research* (1991) Vol. 35 (4–5), pp. 421–30.

Previous failures to find an association between postural test results and the complaints of dizziness/imbalance were further investigated in neuro-otology outpatients, testing in a range of everyday situations requiring balance. Three matched groups of patients were compared: those complaining of dizziness/imbalance; those reporting but not complaining of dizziness/imbalance; and those who had never experienced these symptoms as noteworthy. No difference was found between the groups in measures of postural performance, self-reported confidence in balance, or in several trait measures of fear/anxiety. However, confidence in balance was significantly correlated with fear/anxiety measures across the sample. The correlations were strongest in complaining patients and weakest in patients reporting but not complaining of dizziness/imbalance. The results suggest that psychological characteristics are likely to influence the reporting of symptoms of dizziness/imbalance. The contribution of vestibular and other balance disorders is unclear given that the three groups performed equally well on postural tests. Author.

Habituation and tinnitus: an experimental study. Carlsson, S. G., Erlandsson, S. I. Department of Psychology, University of Goteborg, Sweden. *Journal of Psychosomatic Research* (1991) Vol. 35 (4–5), pp. 509–14.

The study is an experimental test of Hallam's habituation theory of tinnitus; this theory implies that the huge variation in suffering among individuals with about the same amount of tinnitus is due to differences in habituation to the perceived sound. Fourteen patients, seven 'complainers' and seven 'non-complainers', participated in an experiment where we studied changes in skin conductance and heart rate responses to a series of tinnitus-like sound stimuli. No group differences in habituation were observed. We suggest that facilitatory processes, like disinhibition, may be more important than deficient habituation for the inability, in some individuals, to adapt to their tinnitus. Author.

Extended single transverse neck incision for composite resections: does it work? Mysiorek, D., Becker, G. D. Department of Otolaryngology and Communicative Disorders, Long Island Jewish Medical Centre, New Hyde Park, New York 11042. *Journal of Surgical Oncology* (1991) Oct, Vol. 48 (2), pp. 101–5.

Since Crile's original description of neck dissection in 1906 (Crile G.W.; *JAMA* 47: 1780–1786, 1906), a variety of neck incisions has been described, suggesting that none is sufficiently versatile to satisfy the criteria necessary for the ideal neck flap. Single transverse neck incisions (STNI) for complete neck dissections have been performed since the 1950s but are not as commonly used as trifurcate incisions. A criticism of the STNI is that the perceived difficulty exposing the surgical field may compromise removal of disease and impair normal surgical technique, resulting in a higher incidence of recurrent neck disease and postoperative complications. One hundred and nine patients with squamous cell carcinoma of the head and neck were operated using the STNI. There was no incidence of skin-necrosis or carotid artery hemorrhage. Fourteen per cent developed fistulae and 12 per cent developed wound dehiscences. Recurrence in the operated neck was not identified. Cosmesis was considered good in all patients. We conclude that STNI does not result in an increased incidence of postoperative complications or recurrent neck disease compared with standard trifurcate incisions. Author.

Surgical access to the base of skull and upper cervical spine by extended maxillotomy. James, D., Crockard, H. A. Department of Maxillofacial Surgery, University College Hospital, London, England. *Neurosurgery* (1991) Sep, Vol. 29 (3), pp. 411–6.

An extended maxillotomy has been developed to permit wider surgical access to the base of the skull. It has proven particularly useful in the management of the previously untreatable neuraxial compression caused by basilar invagination in cases of osteogenesis imperfecta. In addition, patients with extensive extradural space-occupying lesions have been treated. The surgical technique is described and the results of its use in nine patients are presented. Author.

Osteomyelitis of the mandible as a result of sickle cell disease. Report and literature review. Shroyer, J. V., Lew, D., Abreo, F., Unhold, G. P. Louisiana State University Medical Centre, Shreveport. *Oral Surgery, Oral Medicine, Oral Pathology* (1991) Jul, Vol. 72 (1), pp. 25–8.

Only five cases of osteomyelitis of the mandible as a result of sickle cell disease have been published. We report another case, which uniquely affected not only the osseous portion of the mandible, including the condyle, but also the adjacent musculature. Radical resection of the involved hard and soft tissue was necessary to cure the patient. Two possible etiologies are discussed. The first states that the sickle cell crisis caused a tissue anoxia in which this tissue became secondarily infected; the second states that the preexisting infection triggered or augmented the sickling phenomena. Author.

Cervical necrotizing fasciitis of odontogenic origin. Rapoport, Y., Himelfarb, M. Z., Zikk, D., Bloom, J. Department of Otorhinolaryngology, Tel Aviv Scurasky Medical Centre, Ichilov Hospital, Sackler Faculty of Medicine, Tel Aviv University, Israel. *Oral Surgery, Oral Medicine, Oral Pathology* (1991) Jul, Vol. 72 (1), pp. 15–8.

Necrotizing fasciitis is a severe soft tissue infection caused by both aerobic and anaerobic bacteria and is characterized by a rapid extension along fascial planes and by necrosis of soft tissues. The disease rarely occurs in the head and neck. Three cases of necrotizing fasciitis of the neck after a dental infection are presented. The difficulty in diagnosing the early stage of this condition in relation to other soft tissue infections of odontogenic origin in the neck is discussed. The importance of an early diagnosis followed by an appropriate combination of medical, surgical, and dental treatment is emphasized. Author.

Oral neurofibrosarcoma associated with neurofibromatosis type I. Neville, B. W., Hann, J., Narang, R., Garen, P. Division of Oral Pathology, College of Dental Medicine, Medical University of South Carolina, Charleston. *Oral Surgery, Oral Medicine, Oral Pathology* (1991) Oct, Vol. 72 (4), pp. 456–61.

One of the most feared complications of neurofibromatosis type I (NF-1) is development of cancer, which is estimated to occur in about 5 per cent of cases. The most common associated malignancy is the neurofibrosarcoma (NFS). However, oral NFS in association with NF-1 has rarely been reported. We report two cases of oral NFS arising in patients with NF-1. Both patients died of their tumours. Oral NFS arising in association with NF-1 appears to have an extremely poor prognosis, as do these tumours at other sites of the body. Author.

Focal amyloidosis of the head and neck: evaluation with CT and MR imaging. Gean Marton, A. D., Kirsch, C. F., Vezina, L. G., Weber, A. L. Department of Radiology, San Francisco General Hospital, University of California 94110. *Radiology* (1991) Nov, Vol. 181 (2), pp. 521–5.

Localized amyloidosis of the head and neck was found retrospectively in the nasopharynx (n = 3) and orbit (n = 1) of four female patients (mean age, 32 years), three of whom had a prior history of antigenic stimulation. In all patients, computed tomography revealed a slightly high absorption and a relatively homogeneous, partially calcified mass. In the one patient who underwent magnetic resonance (MR) imaging, a distinctive loss of signal intensity was seen on the long repetition time/echo time sequence. This enhanced T2 relaxation may be due to (a) static or slowly fluctuating internal magnetic fields arising from adjacent amyloid protons held in relatively fixed positions within the beta-pleated sheet, resulting in quick phase dispersion; (b) chemical exchange and spin-spin interaction with adjacent water protons; and (c) diffusion through differences in diamagnetic susceptibility. This unusual appearance at MR imaging may improve the ability of radiologists to distinguish focal amyloidosis from many other diseases that affect the head and neck. Author.

Pott's puffy tumour: a complication of intranasal cocaine abuse.

Noskin, G. A., Kalish, S. B. Department of Medicine, Northwestern University Medical School, Chicago, Illinois 60611. *Reviews of Infectious Diseases* (1991) Jul–Aug, Vol. 13 (4), pp. 606–8.

The increasing intranasal abuse of cocaine has been associated with numerous medical problems. Among the most common complications are chronic sinusitis and septal perforation, although myocardial infarction and death also have been reported. We describe the development of Pott's puffy tumour in a patient who chronically abused cocaine. Pott's puffy tumour, a subperiosteal abscess of the frontal bone associated with frontal osteomyelitis, is a rare complication of frontal sinusitis. This case report underscores the dangers of cocaine abuse and describes yet another potentially serious sequela. Author.

The medial temporal lobe memory system. Squire, L. R., Zola-Morgan, S. Veterans Affairs Medical Centre, San Diego, CA 92161. *Science* (1991) Sep 20, Vol. 253 (5026), pp. 1380–6.

Studies of human amnesia and studies of an animal model of human amnesia in the monkey have identified the anatomical components of the brain system for memory in the medial temporal lobe and have illuminated its function. This neural system consists of the hippocampus and adjacent, anatomically related cortex, including entorhinal, perirhinal, and parahippocampal cortices. These structures, presumably by virtue of their widespread and reciprocal connections with neocortex, are essential for establishing long-term memory for facts and events (declarative memory). The medial temporal lobe memory system is needed to bind together the distributed storage sites in neocortex that represent a whole memory. However, the role of this system is only temporary. As time passes after learning, memory stored in neocortex gradually becomes independent of medial temporal lobe structures. Author.

Accelerated fractionation radiation therapy for advanced squamous cell carcinoma of the head and neck. Giri, P. G., Gerner, L. S. Department of Radiation Oncology, University of Kansas Medical Centre, Kansas City 66103. *Southern Medical Journal* (1991) Sep, Vol. 84 (9), pp. 1103–7.

We treated 14 patients who had advanced head and neck cancer with an accelerated fractionation schedule of irradiation consisting of two fractions given 6 h apart. In the morning a volume of 1.7 Gy was given to an area that encompassed the entire tumour, enlarged lymph nodes, and all areas at risk for microscopic disease. Six hours later, 1.1 Gy was given to an area that included only the tumour and any enlarged lymph nodes, with a 2 cm margin. The treatment was well tolerated; of the 13 patients who completed therapy, six did not require a break in therapy, and seven patients did. The median rest period was two days. There was no grade 4 toxicity. Grade 3 toxicity included skin changes (one case), mucositis (two), dysphagia (two), weight loss (three), and a decrease in the hemoglobin level (one case). The response rate in the 13 who completed therapy was 13/13 (100 per cent); 11 of the 13 (83 per cent) had a complete response. Only one of the 11 who achieved a complete response had failure at the primary site. At a median follow-up of 24 months, the absolute survival was 7/13 (54 per cent) and the corrected survival was 7/10 (70 per cent). This technique permits radiation therapy to be given on an accelerated schedule without a planned break in treatment. The overall response rate and survival at two years was excellent. Author.

Erythromycin ototoxicity: a call to heighten recognition. Whiteaker, C. J., Parker, J. E., Lapp, N. L. Department of Medicine, Milton S. Hershey Medical Centre, Hershey, Pa. *Southern Medical Journal* (1991) Oct, Vol. 84 (10), pp. 1214–6.

Bilateral sensorineural hearing loss developed in a 64-year-old woman treated with intravenous erythromycin lactobionate for bacteremic pneumococcal pneumonia. Discontinuation of the antibiotic led to prompt correction of the hearing deficit. Reversible hearing loss is an infrequently described adverse effect attributable to high-dose erythromycin therapy. Possible risk factors, including age, gender, and hepatic and renal function, may contribute to the development of erythromycin ototoxicity. Author.

Whiplash, postural control, and the inner ear. Chester, J. B., Jr. Salem Hospital, Regional Rehabilitation Centre, Oregon. *Spine* (1991) Jul, Vol. 16 (7), pp. 716–20.

Many patients with 'whiplash syndrome' experience unrelenting neck stiffness and pain. This abnormal muscular tension is postulated to be causally related to a central disorder of postural control, which has evolved secondary to injury of the inner ear labyrinthine structures. Moving platform posturography was used to demonstrate

the presence or absence of a static or dynamic equilibrium disorder in 48 patients who had experienced the oscillation forces induced by a rear-end automobile collision. Other vestibular tests were used to document dysfunction of the semicircular canals and the otolith

structures. A high percentage of patients were found to have faulty inner ear functioning leading to inefficient muscular control of balance and erect posture. Active perilymph fistulas were identified at surgery in seven patients. Author.