

Abstract Selection

Effect of a prosthetic appliance for treatment of sleep apnea syndrome on masticatory and tongue muscle activity. Yoshida, K. Department of Oral and Maxillofacial Surgery, Faculty of Medicine, Kyoto University, Japan. *Journal of Prosthetic Dentistry* (1998) May, Vol. 79 (5), pp. 537–44.

STATEMENT OF PROBLEM: The efficiency of an appliance for treatment of sleep apnea shows inordinate interindividual difference. The mechanism of its therapeutic effects remains unresolved. **PURPOSE:** This study examined the effect of the device on sleep apnea, and masticatory and tongue muscles. **MATERIAL AND METHODS:** Fifteen patients with sleep apnea syndrome were evaluated polysomnographically, with and without the appliance. Electromyograms (EMG) of genioglossal, masseter, and lateral pterygoid muscles were recorded and EMG amplitudes measured before, during, and after the apneas. Apneas were classified into three types: obstructive, central, and mixed. **RESULTS:** During obstructive apneas, muscles showed significantly lower EMG amplitudes; whereas during central apneas, no decrease in the mean EMG amplitude was observed. EMG amplitudes increased after insertion of the device. EMG amplitudes during obstructive apneas were significantly increased in the genioglossal ($p < 0.03$, t test) and lateral pterygoid muscles ($p < 0.03$) by the device. Obstructive and mixed apneas per hour were significantly reduced by the appliance; however, in contrast, central apneas showed slightly increased. The apnea index decreased significantly ($p < 0.002$) by the device owing to the paucity of central apneas. **CONCLUSIONS:** The apnea appliance activated masticatory and tongue muscles during sleep and prevented the upper airway from collapsing. The prosthetic appliance was useful in the treatment of sleep apnea syndrome. Author.

Recurrent left cervical abscess secondary to persistent pyriform sinus fistula. Hsin, M. K., Barker, G. J., Spitz, L. Department of Paediatric Surgery, Great Ormond Street Hospital for Sick Children, London, UK. *Journal of the Royal College of Surgeons (Edinburgh)* (1998) April, Vol. 43 (2), pp. 125–6.

Congenital pyriform sinus fistula is a rare defect arising from the failure of obliteration of the third or fourth pharyngeal pouch remnant. It is a recognized potential cause of acute suppurative thyroiditis. Author.

Endolymphatic sac tumours: report of three cases. Roche, P. H., Dufour, H., Figarella-Branger, D., Pellet, W. Service de Neurochirurgie, Hôpital St Marguerite, Marseille, France. *Neurosurgery* (1998) April, Vol. 42 (4), pp. 927–32.

OBJECTIVE AND IMPORTANCE: We present three cases of endolymphatic sac tumours and review the previously published cases. Despite frequent extension to the cerebellopontine angle, these rare tumours have only recently been recognized by neurosurgeons. **CLINICAL REPRESENTATION:** A 26-year-old man developed a progressive hearing loss, revealing an intrapetrous retrolabyrinthine tumour on the right side. A 28-year-old woman experienced a left cerebellopontine angle syndrome, with a lytic intrapetrous mass extending into the cerebellopontine angle. A 38-year-old woman presented with an intracranial hypertension syndrome caused by a tumour of the jugular foramen. **INTERVENTION:** For the first and second patients, the tumours originated from the operculum of the endolymphatic sac. Total removal was achieved, via a transpetrosal approach, in these two cases. No recurrence was detected after a 20-month follow-up period. For the third patient, the tumour originated from the distal part of the sac. Recurrence was observed eight years after subtotal removal via a retrosigmoid route. Histological analysis revealed a papillary-cystic adenocarcinomatous pattern in all cases, without features of aggressiveness. **CONCLUSION:** Endolymphatic sac tumours are locally invasive neoplasms characterized by bipolar intrapetrous and posterior fossa involve-

ment. The anatomic complexity of the endolymphatic sac may explain the distinct patterns of extension of these tumours. Early radical surgery is related to good outcomes. Author.

Risk factors for permanent hypernasality after adenoidectomy. Schman, L., Jordaan, H., Jammie, G. H. Department of Speech Pathology and Audiology, University of the Witwatersrand, Johannesburg. *South African Medical Journal* (1998) March, Vol. 88 (3), pp. 266–9.

OBJECTIVES: To investigate the causes of persistent, apparently permanent hypernasal speech following adenoidectomy in 10 subjects without overt cleft palates, and to establish a protocol to be followed before this operation is performed. **DESIGN:** Retrospective and descriptive design. **PARTICIPANTS:** Ten subjects, fulfilling the following criteria, were included: (i) subjects had undergone adenoidectomy which resulted in hypernasal speech that persisted for longer than three months (and was therefore considered to be permanent); (ii) subjects did not have a cleft lip or overt cleft palate; (iii) there was no hearing loss of sufficient magnitude to account for the hypernasal speech; and (iv) the hypernasality was rated as severe by a speech therapist, could not be remedied by speech therapy alone and required further management by a plastic surgeon through pharyngoplasty. Ten subjects were found through the clinical records of speech therapists and plastic surgeons working in hospitals and private practice. The following information was obtained through interviews or by reading the case files: (i) identifying information; (ii) the presence of any of the factors reported in the literature to be associated with the permanent hypernasality or nasal emission, as well as the method of identification; and (iii) whether these factors had been identified before or after the adenoidectomy. **RESULTS:** Nine out of a total of 10 subjects showed preoperative perceptual and structural characteristics and/or case history factors that have been documented to constitute risk factors for the development of nasal speech, should an adenoidectomy be performed. The methods used to investigate these factors pre-operatively appear to have been inadequate. **CONCLUSION:** This undesirable sequel to surgery can be prevented if certain case history and speech factors are investigated and followed up with radiographic procedures if necessary. Author.

Occupational hearing loss in Washington state, 1984–1991: I. Statewide and industry-specific incidence. Daniell, W. E., Fulton-Kehoe, D., Smith-Weller, T., Franklin, G. M. Department of Environmental Health, School of Public Health & Community Medicine, University of Washington, Seattle 98195-7234, USA. bdaniell@u.washington.edu *American Journal of Industrial Medicine* (1998) June, Vol. 33 (6), pp. 519–28.

This study examined non-federal workers' compensation claims accepted for hearing-related conditions in Washington state during 1984–1991. Seventy per cent of 6,539 filed claims were accepted ($n = 4,547$); most accepted claims resulted in disability compensation ($n = 3,660$; 80 per cent). A transient 50-fold increase in claims from one worksite accounted for one-third of all hearing-related claims in the state for two years. The number and incidence of accepted claims from all other worksites increased significantly across the study period. The incidence was 0.3 per 10(3) workers per year, overall, but was at least five-fold higher in industries that accounted for half of accepted claims, and reached 38- to 71-fold higher in some industries. This study indicates: 1) workers' compensation claims under-estimate the true frequency of occupational illness, representing only the 'tip of the iceberg'; 2) hearing loss is a growing problem in occupational health; and 3) workers' compensation data are not potentially useful to identify specific high-incidence industries for possible interventions. Author.

The cuffed oropharyngeal airway as an aid to fiberoptic intubation. Pigott, D. W., Kay, N. H., Greenberg, R. S. Department of

Anaesthetics, Northampton General Hospital, UK. *Anaesthesia* (1998) May, Vol. 53 (5), pp. 480–3.

The cuffed oropharyngeal airway is a new disposable airway based on the Guedel oral airway. It has an asymmetrical cuff which provides a seal as well as lifting the base of the tongue forwards, and a 15 mm connector allowing attachment to an anaesthetic breathing system. The device does not extend beyond the vallecula, so that the laryngeal inlet can be visualized with a fiberoptic laryngoscope passed between the cuff of the device and the pharyngeal wall. The advantage is that ventilation is maintained throughout the intubating sequence. We describe its use in a patient with oropharyngeal carcinoma. Author.

An inexpensive self fabricated pressure clip for the ear lobe.

Agrawal, K., Panda, K. N., Arumugam, A. Department of Plastic Surgery, Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry India. *British Journal of Plastic Surgery* (1998) March, Vol. 51 (2), pp. 122–3.

Pressure therapy is an integral part of keloid treatment. There are certain areas of the body which are prone to keloid formation but are not amenable to pressure therapy. The ear lobe is one such area. A simple, self fabricated and inexpensive pressure clip has been used for applying postoperative pressure to the ear lobe. This is fabricated with cold-cure poly methyl methacrylate and orthodontic wire. This has been used in 41 ear lobe keloids in 26 patients along with postexcisional triamcinolone acetonide therapy, five ear lobe reconstructions and two cases of ear lobe clefts over a period of eight years. Although these clips are not very aesthetic, still the acceptability is very high as the patients were well motivated. A total of 27 ear lobes in 18 patients of ear lobe keloids have undergone ear boring after six to 18 months of pressure therapy. The only complication noticed is in the form of pressure ulcer due to continuous pressure in two patients at the beginning of our experience with these clips. These healed well after temporarily stopping the use of the clip. Author.

Chondrosarcoma of the maxilla: panoramic radiographic and computed tomographic with multiplanar reconstruction findings.

Hayt, M. W., Becker, L., Katz, D. S. Department of Radiology, Winthrop University Hospital, Mineola, NY 11501, USA. *Dentomaxillofacial Radiology* (1998) March, Vol. 27 (2), pp. 113–6.

Chondrosarcomas are extremely rare tumours of which approximately 10 per cent are found in the maxillofacial region. In this report, we present the imaging findings of a maxillary chondrosarcoma on a panoramic radiograph of the jaws and computed tomography with multiplanar reconstructions. We recommend the latter as an excellent way to image evolving or suspected lesions of the maxilla, particularly for surgical treatment planning. Author.

Thermology and facial telethermography: Part II. Current and future clinical applications in dentistry.

Gratt, B. M., Anbar, M. Section of Oral Radiology, UCLA School of Dentistry 90095-1668, USA. *Dentomaxillofacial Radiology* (1998) March, Vol. 27 (2), pp. 68–74.

Selected clinical applications using thermal imaging as an aid in dentistry are reviewed. Facial skin temperature can easily be measured in a clinical setting, without direct skin contact, by monitoring the emitted infrared radiation. This is the basis of static area telethermography (SAT) and dynamic area telethermography (DAT). SAT has recently been shown to be of help to the dentist in (1) the diagnosis of chronic orofacial pain, (2) as a unique tool in assessment of TMJ disorders, (3) as an aid in assessment of inferior alveolar nerve deficit, and (4) as a promising research tool. DAT, recently made possible by advances in computing technology combined with advanced infrared sensor technology, extracts quantitative information about hemodynamic processes from hundreds to thousands of digital thermal images of the affected facial areas, measured and collected within less than three min. DAT has promise of offering a better insight into aberrations of the neuronal control of facial skin perfusion and aiding our understanding of the correlation between orofacial pain and facial thermal abnormalities. This promising new insight may help in the management of orofacial pain. Author.

Induction of endolymphatic hydrops in the guinea pig by perisaccular deposition of sepharose beads carrying and not carrying immune complexes. Bouman, H., Klis, S. F., de Groot, J. C., Huizing, E. H., Smoorenburg, G. F., Veldman, J. E. Department of Otorhinolaryngology, University Hospital, Utrecht, The Netherlands. *Hearing Research* (1998) March, Vol. 117 (1–2), pp. 119–30.

We tried to induce endolymphatic hydrops in guinea pig cochleas by unilateral, perisaccular deposition of sepharose beads carrying immune complexes. Controls consisted of the deposition of sepharose beads without immune complexes and the contralateral, untreated ear. The effects of the treatment were studied by light microscopy and electrophysiological recordings of the gross cochlear potentials one, two and six weeks after treatment. Each condition included six animals. Analysis of variance of the morphometric data concerning the ears treated with deposition of the beads showed a statistically significant difference ($p = 0.04$) between the degree of hydrops found for the beads with immune complexes and for those without. The difference between the treated ears and the contralateral untreated ears was significant ($p = 0.01$) for the beads with immune complexes and not significant ($p = 0.8$) for those without immune complexes while there was no significant effect of post-treatment time interval. Analysis of variance of the electrophysiological data, collected in response to tone bursts at the apex of the cochlea, showed no significant differences between the results for the beads with and without immune complexes. Therefore these results were pooled. One week after treatment the pooled results for the compound action potential showed a small decrease in amplitude, just significant at 2 kHz, but not at 4 and 8 kHz. This decrease disappeared completely after six weeks. The pooled results for the negative summing potential (SP) showed a significant increase in magnitude at all frequencies decreasing with post-treatment interval. The cochlear microphones did not demonstrate any change in amplitude after treatment. The results indicate that deposition of sepharose beads with immune complexes induces endolymphatic hydrops. Also, deposition of the sepharose beads itself may have induced hydrops together with enhancement of the SP. SP enhancement may be related to the development of endolymphatic hydrops rather than to the presence of hydrops as such. This may be based on pressure build-up while hydrops develops. Author.

The immediate effects of local trauma on the shape of the cricoid cartilage. ten-Koppel, P. G., van Osch, G. J., Verwoerd, C. D., Verwoerd-Verhoef, H. L. Department of Otorhinolaryngology, Head and Neck Surgery, Erasmus University Medical Center Rotterdam, The Netherlands. *International Journal of Pediatric Otorhinolaryngology* (1998) February, Vol. 43 (1), pp. 1–10.

Injury-induced abnormal development of the cricoid ring has been demonstrated in previous growth studies. In this study we focused on the immediate effects of various types of lesions to the cricoid, eliminating the influence of inserting muscles. In isolated, vital cricoids (cricoid explants) the anterior arch was split, creating a small gap between the cut ends. Previous injury to the internal surface of the cricoid ring resulted in a three to four fold increase of the diameter of the gap, actually widening the interrupted cricoid. On the contrary, injuring the external surface of the cricoid cartilage prior to anterior cricoid split, leads to an overlap of the cut edges, and a narrowing of the ring. These injury-specific changes in shape of the cricoid ring are ascribed to the release of interlocked stresses, present in the cartilage. It is suggested that the demonstrated methods to change the shape of the cricoid ring in a predictable way, are relevant for the treatment of patients with cricoid malformation. Author.

Gastroesophageal reflux association with laryngomalacia: a prospective study. Giannoni, C., Sulek, M., Friedman, E. M., Duncan, N. O. III. Department of Otolaryngology, University of Florida, Gainesville 32610, USA. *International Journal of Pediatric Otorhinolaryngology* (1998) February, Vol. 43 (1), pp. 11–20.

OBJECTIVE: To identify the incidence and clinical role of gastroesophageal reflux (GER) in patients with laryngomalacia. **DESIGN:** Prospective evaluation of consecutive infants with a new diagnosis of laryngomalacia with an initial questionnaire, a barium esophagram or 24 h pH probe and record of their subsequent clinical course. **SETTING:** A large, tertiary pediatric referral centre and its associated outpatient clinic. **PATIENTS:** New diagnosis of laryngomalacia in 33 consecutive infants were evaluated by questionnaire and 27 of these were evaluated for GER. **RESULTS:** GER was observed in 64 per cent of patients

and was significantly associated with severe symptoms and complicated clinical course ($p = 0.0163$). The presence of smokers in the infant's household negatively impacted his or her clinical course and symptomatology ($p = 0.013$) as did the presence of other major, concurrent medical problems ($p = 0.065$). **CONCLUSIONS:** In patients with laryngomalacia, GER was significantly associated with severe symptoms (a complicated clinical course), as was smoking in an infant's household and other significant medical problems. Author.

A nation-wide, population-based survey of otitis media and school achievement. Luotonen, M., Uhari, M., Aitola, L., Lukkaroinen, A. M., Luotonen, J., Uhari, M. Department of Otorhinolaryngology, University of Oulu, Finland. *International Journal of Pediatric Otorhinolaryngology* (1998) February, Vol. 43 (1), pp. 41–51.

The purpose of the study was to evaluate whether there is an association between early recurrent otitis media and later school achievement. A nation-wide, population-based random cluster sampling of 1,708 children in 119 school classes was performed throughout Finland. Data were collected with questionnaires sent to the parents and teachers of the children. Teachers evaluated each child's performance at school, and the association between the number of episodes of early otitis media and school achievement was determined. Recurrent otitis media episodes before the age of three years associated significantly with lower performance in mathematical skills (risk ratios (RR) 1.2–1.4, 95 per cent confidence intervals (95 per cent CI) 1.0–1.7, p -values 0.04–0.02) and classroom concentration (RR 1.4, 95 per cent CI 1.1–1.8, p -value 0.02) among the girls. The boys with recurrent otitis episodes performed more poorly in reading (RR 1.3, 95 per cent, CI 1.0–1.6, p -value 0.05) and oral performance (RR 1.2, 95 per cent, CI 1.1–1.4, p -value 0.01). No association between otitis episodes after the age of three years and school achievement was found. Our findings suggest that recurrent otitis media episodes before the age of three years have adverse long-term consequences even when treated actively. Even though the risk ratios were low our finding is important because recurrent otitis media is a common problem during infancy and school achievement has many practical influences on a child's future. Author.

Recurrent therapy resistant mastoiditis by Mycobacterium chelonae abscessus, a nontuberculous mycobacterium. van Aarem, A., Muijtjens, H. L., Smits, M. M., Cremers, C. W. Department of Otorhinolaryngology, University Hospital Nijmegen, The Netherlands. *International Journal of Pediatric Otorhinolaryngology* (1998) February, Vol. 43 (1), pp. 61–72.

A rare case of recurrent mastoiditis is described with abscess formation caused by a nontuberculous mycobacterium (NTM) *Mycobacterium chelonae abscessus*. The exceptionally slow wound healing after repeated surgical debridement was striking. A literature study showed that in contrast with NTM infections of other parts of the body, infections of the middle ear were most commonly seen in immunocompetent children. If a case of chronic unilateral otitis media shows insufficient response to antibiotic therapy and surgical debridement, mycobacterial infection should be considered. The case described below illustrates the importance of histopathological and microbiological investigations. Author.

Histological identification of carcinoma in 21 gauge needle tracks after fine needle aspiration biopsy of head and neck carcinoma. Mighell, A. J., High, A. S. Diagnostic Services, Leeds Dental Institute, UK. *Journal of Clinical Pathology* (1998) March, Vol. 51 (3), pp. 241–3.

Six cancer resection specimens were thoroughly sectioned and microscopically examined at areas known to have been around 21 gauge fine needle aspiration (FNA) biopsy sites, in an attempt to identify needle tracks. All cases had an interval of not less than 10 days between FNA biopsy and surgery. Foci of tumour were identified histologically in needle tracks from two patients with carcinoma. This is the first instance, outside of experimental animal models, of histologically confirmed, viable tumour spread in FNA biopsy tracks. Although this complication is not common and is of unknown clinical significance, it is one that all clinicians who undertake FNA of malignant neoplasms should be aware of. Author.

Auditory evoked neuromagnetic response in cerebrovascular diseases: a preliminary study. Toyoda, K., Ibayashi, S., Yamamoto, T., Kuwabara, Y., Fujishima, M. Second Department of Internal

Medicine, Faculty of Medicine, Kyushu University, Fukuoka, Japan. *Journal of Neurology, Neurosurgery and Psychiatry* (1998) June, Vol. 64 (6), pp. 777–84.

OBJECTIVES: Magnetoencephalography (MEG) measures aspects of the function of the auditory cortex of the human brain with high spatial resolution. The objective was to determine whether MEG also accurately identifies the auditory cortex of the brain in patients with ischaemic strokes. **METHODS:** The auditory evoked magnetic field (AEF) was examined after stimuli of 1 kHz tone bursts in 24 stroke patients without apparent infarcts in the auditory cortex, and compared the topography of sources of 50 ms (P50m) and 100 ms latency deflections (N100m), the most prominent components of middle and long latency AEFs, with that of 12 normal subjects. Cerebral haemodynamics in and around the auditory cortex were evaluated using PET. **RESULTS:** In nine of 24 stroke patients, the accurate magnetic sources of P50m or N100m were not identified. The distribution of P50m sources varied more widely than N100m. Eight of these nine patients had severe stenotic lesions in the carotid or middle cerebral arterial trunks. Patients with abnormal P50m responses had decreased supratemporal and hemispheric blood flow compared with patients with normal P50m responses. **CONCLUSIONS:** These findings suggest that large vessel disease with disturbed cerebral haemodynamics in and near the auditory cortex tend to affect AEFs, especially the middle latency components. This is the first combined study of MEG and PET to show a significant correlation between AEF responses in stroke patients and their PET indices. Author.

Neurofibromatosis type 2: growth stimulation of mixed acoustic schwannoma by concurrent adjacent meningioma: possible role of growth factors. Case report. Pallini, R., Tancredi, A., Casalbore, P., Mercanti, D., Larocca, L. M., Consales, A., Lauretti, L., Fernandez, E. Institute of Neurosurgery, Catholic University School of Medicine, Rome, Italy. *Journal of Neurosurgery* (1998) July, Vol. 89 (1), pp. 149–54.

The authors report the case of a young man suffering from neurofibromatosis type 2 (NF2) who harboured bilateral acoustic schwannomas and a parasellar meningioma. Neuroimaging studies performed during a four-year follow-up period showed that the bilateral schwannomas had grown very little and at similar rates. However, after the meningioma had infiltrated the tentorium and approached the ipsilateral schwannoma at the incisura, both Schwann cell tumours started to grow rapidly, particularly the one adjacent to the meningioma, of which the percentage of annual growth rate increased by approximately a factor of 10(2). At the same time, magnetic resonance imaging showed that this tumour also changed its features. During surgery, the acoustic schwannoma was firmly adherent to both meningioma and tentorium. Histological examination revealed meningotheiomatous cells in the schwannoma adjacent to the meningioma. Antiphosphotyrosine immunoblotting of PC12 cells was compatible with the presence of an epidermal growth factor (EGF)-like molecule in the cerebrospinal fluid (CSF) of the patient. This factor was not detected in the CSF of five other NF2 patients, two of whom bore associated bilateral acoustic schwannomas and meningioma in remote locations. It is hypothesized that the meningotheiomatous cells infiltrating the schwannoma triggered an autocrine/paracrine growth-stimulatory mechanism that involved an EGF-like factor. Author.

Metabolic abnormalities in developmental dyslexia detected by 1H magnetic resonance spectroscopy. Rae, C., Lee, M. A., Dixon, R. M., Blamire, A. M., Thompson, C. H., Styles, P., Talcott, J., Richardson, A. J., Stein, J. F. MRC Biochemical and Clinical Magnetic Resonance Unit, John Radcliffe Hospital, Oxford, UK. *crac@biochem.usyd.edu.au. Lancet* (1998) June 20, Vol. 351 (9119), pp. 1849–52.

BACKGROUND: Neurological and physiological deficits have been reported in the brain in developmental dyslexia. The temporoparietal cortex has been directly implicated in dyslexic dysfunction, and substantial indirect evidence suggests that the cerebellum is also implicated. We wanted to find out whether the neurological and physiological deficits manifested as biochemical changes in the brain. **METHODS:** We obtained localized proton magnetic resonance spectra bilaterally from the temporo-parietal cortex and cerebellum of 14 well-defined dyslexic men and 15 control men of similar age. **FINDINGS:** We found biochemical differences between dyslexic men and controls in the left temporo-

parietal lobe (ratio of choline-containing compounds (Cho) to N-acetylaspartate (NA) $p < \text{or} = 0.01$) and right cerebellum (Cho/NA, $p < \text{or} = 0.01$; creatine (Cre) to NA $p < \text{or} = 0.05$; (not significant). We found lateral biochemical differences in dyslexic men in both these brain regions (Cho/NA in temporo-parietal lobe, left vs right, $p < \text{or} = 0.01$; Cre/NA in cerebellum, left vs right, $p < \text{or} = 0.001$). We found no such lateral differences in controls. There was no significant relation between the degree of contralateral chemical difference and handedness in dyslexic or control men. **INTERPRETATION:** We suggest that the observed differences reflect changes in cell density in the temporo-parietal lobe in developmental dyslexia and that the altered cerebral structural symmetry in dyslexia is associated with abnormal development of cells or intracellular connections or both. The cerebellum is biochemically asymmetric in dyslexic men, indicating altered development of this organ. These differences provide direct evidence of the involvement of the cerebellum in dyslexic dysfunction. Author.

The suboccipital carrefour: cervical and vertebral arterial anastomosis. Ayad, M., Vinuela, F., Rubinstein, F. H. Department of Physiology, UCLA School of Medicine, Los Angeles, CA 90024, USA. *American Journal of Neuro-Radiology* (1998) May, Vol. 19 (5), pp. 925–31.

PURPOSE: Our objective was to anatomically define the anastomoses between cervical and carotid arterial distributions (the carrefour) in the rabbit and to assess the contribution of these collaterals to cortical blood flow (CBF) during cerebral ischaemia. **METHODS:** Angiography was carried out in six rabbits with basilar artery occlusion using selective contrast injection into the right subclavian, external carotid, and internal carotid arteries. Anastomoses were corroborated with methacrylate vascular casts prepared in five additional rabbits. CBF was measured in eight rabbits by H₂ clearance after basilar artery occlusion and again after bilateral common carotid artery occlusion. Cortical DC potential was measured during ischemia in these rabbits and in another 19 rabbits after additional occlusion of the cervical collateral arteries. **RESULTS:** A network of anastomoses between superficial and ascending cervical, superior intercostal, vertebral, and occipital arteries was found by angiography and corrosion casts. Additional communications in the ophthalmic, ethmoidal, and cerebellar arterial distributions are described. These pathways were found to supply a mean of 15 ± 7 mL/100 g per minute residual CBF during three-vessel ischemia, or 24 per cent of the preischemic CBF. Ischemic depolarization of DC potential occurred in seven of the eight rabbits with collateral CBF at a mean latency of 2.64 ± 0.59 minutes and at 1.71 ± 0.09 minutes in those without. **CONCLUSION:** The suboccipital collateral network of the rabbit resembles that of humans and can contribute significantly to CBF during ischemia. The results suggest that this model may be useful for evaluating methods of optimizing hemodynamic control of the anastomoses in situations such as those encountered during endovascular therapy. Author.

An organ-preserving selective arterial chemotherapy strategy for head and neck cancer. Kerber, C. W., Wong, W. H., Howell, S. B., Hanchett, K., Robbins, K. T. Department of Radiology, University of California at San Diego, Medical Center, 92103, USA. *American Journal of Neuro-Radiology* (1998) May, Vol. 19 (5), pp. 935–41.

PURPOSE: Squamous cancer of the upper aerodigestive tract is a disheartening disease. Despite our best efforts, the long-term survival rate remains only 15 per cent to 40 per cent, and surgical cures often decrease the quality of life owing to the loss of swallowing and speech organs. A better understanding of tumour dynamics and the discovery that thiosulfate can neutralize cisplatin led us to develop a treatment plan that combines a rapid superselective high-dose intraarterial delivery of cisplatin (CDDP), simultaneous intravenous infusion of its antagonist, thiosulfate, and radiation therapy. **METHODS:** Patients with advanced head and neck squamous cancer were entered into the protocol after a multidisciplinary evaluation that included CT or MR imaging. Forty-two patients constituted the first cohort. After baseline angiography, an arterial acceptance test determined the maximum infusion rate that the tumour's nutrient artery would accept. CDDP was then infused at that rate, usually within three to five minutes, while the antagonist thiosulfate was given intravenously. In the second cohort of 85 patients with stage three or four

previously untreated and unresectable disease, local radiation was added to the treatment plan. The radiation dose (180–200 cGy/d \times 35) was delivered regionally on the basis of the known radiosensitizing effect of CDDP. **RESULTS:** Cohort 1 allowed us to develop the infusion technique and to establish a dose quantity and delivery frequency. When 150 mg/m² was administered weekly for four weeks, no severe toxicity was found. In cohort two, 72 (92 per cent) of the remaining 78 patients had complete disappearance of their tumour. Seventeen severe toxic events were associated with 323 femoral catheterizations. One patient died of pulmonary embolus, precluding follow-up evaluation. Six patients had neurologic sequelae, three with transient and three with permanent strokes. **CONCLUSION:** Rapid superselective chemotherapy with CDDP combined with a circulatory systemic antagonist allowed delivery of an antitumoral drug directly into the lesion while protecting the kidneys and bone marrow from the agent's systemic effects. Use of a dose regimen of 150 mg CDDP/m² per week for four weeks resulted in the disappearance of a large percentage of advanced squamous cancers. Author.

Rhinovirus infection induces mucus hypersecretion. Yuta, A., Doyle, W. J., Gaumont, E., Ali, M., Tamarkin, L., Baraniuk, J. N., Van Deusen, M., Cohen, S., Skoner, D. P. Division of Rheumatology, Immunology, and Allergy, Georgetown University Medical Center, Washington, District of Columbia 20007-2197, USA. *American Journal of Physiology* (1998) June, Vol. 274 (6 Pt 1), pp. L1017–23.

Rhinorrhoea is a prominent symptom of the common cold. Although increases in vascular permeability and serous cell secretion have been demonstrated in human nasal mucus during active rhinovirus infections, changes in mucin constituents have not been quantified. Nonallergic (n = 48) and asymptomatic allergic rhinitis (n = 32) subjects were inoculated with rhinovirus type hanks before the spring allergy season. Nasal lavages were performed before inoculation (day 0), then daily for five days afterward. The subjects were divided into infected and noninfected groups on the basis of evidence of successful rhinovirus infection (nasal shedding of virus or fourfold increases in specific serum antibodies). Concentrations of interleukin (IL)-8, markers of vascular leak (IgG), seromucous cells (lysozyme), and mucoglycoprotein exocytosis (7F10-immunoreactive mucin (7F10-irm) and Alcian blue staining of acidic mucoglycoproteins) were measured in lavage fluids. The infected subgroup had maximal increases in nasal lavage fluid concentrations of IL-8 (sevenfold), IgG (fourfold), total protein (twofold), and gel-phase 7F10-irm (twofold) on day three. There were no differences between infected allergic and nonallergic subjects. IL-8 and gel-phase 7F10-irm were significantly higher in infected than in noninfected subjects. In addition to promoting plasma exudation, rhinovirus hanks infection increases IL-8 and gel-phase mucin secretion. These processes may contribute to a progression from watery rhinorrhoea to mucoid discharge, with mild neutrophilic infiltration during the common cold. Author.

Sentinel lymph node mapping in melanoma of the ear. Wey, P. D., De La Cruz, C., Goydos, J. S., Choi, M. L., Borah, G. L. Department of Surgery, UMDNJ-Robert Wood Johnson Medical School, New Brunswick, NJ 08901-0019, USA. *Annals of Plastic Surgery* (1998) May, Vol. 40 (5), pp. 506–9.

Primary nodal drainage basins in melanoma of the head and neck are often unpredictable. The ear is a notorious example of an anatomic site with ambiguous patterns of lymphatic drainage. Preoperative lymphoscintigraphy has recently emerged as one modality to assist in identifying clinically relevant nodes. We propose that the addition of intraoperative lymph node mapping techniques that utilize radioactive tracers ('intraoperative lymphoscintigraphy') can increase the accuracy of identifying sentinel nodes and help to determine which patients may benefit from a complete neck dissection. This report demonstrates the ambiguity in identifying drainage patterns in melanoma of the ear and offers a reliable method of sentinel lymph node mapping. This report also addresses current issues regarding treatment protocols of patients with micrometastatic disease in the periauricular region. Author.

A randomized controlled trial of exercise therapy for dizziness and vertigo in primary care (see comments). Yardley, L., Beech, S., Zander, L., Evans, T., Weinman, J. Department of Psychology, University College London. 1.yardley@ucl.ac.uk. *British Journal*

of *General Practitioners* (1998) April, Vol. 48 (429), pp. 1136–40. Comment in: *British Journal of General Practitioners* (1998) April, 48 (429): 1128–9.

BACKGROUND: 'Vestibular rehabilitation' (VR) is an increasingly popular treatment option for patients with persistent dizziness. Previous clinical trials have only evaluated the effects of specialist therapy programmes in small, selective, or uncontrolled patient samples. **AIM:** To determine the benefits of VR compared with standard medical care, using a brief intervention for dizzy patients in primary care. **METHOD:** Adults consulting their general practitioner (GP) with dizziness or vertigo were randomly assigned to treatment or control groups. Patients in both groups received the same evaluation at baseline, six-week follow-up, and six-month follow-up, comprising examination of nystagmus, postural control, and movement-provoked dizziness, and a questionnaire assessment of subjective status, symptoms, handicap, anxiety, and depression. At baseline and six weeks later, the treatment group also received an individualized 30-minute therapy session, in which they were taught head, eye, and body exercises designed to promote vestibular compensation and enhance skill and confidence in balance. **RESULTS:** The treatment group ($n = 67$) improved on all measures, whereas the control group ($n = 76$) showed no improvement, resulting in a significant difference between the two groups on physical indices of balance and subjective indices of symptoms and distress. Odds ratios for improvement in treated patients relative to untreated patients were 3.1:1 at six weeks (95 per cent CI = 1.4–6.8) and 3.8:1 at six months (95 per cent CI = 1.6–8.7). **CONCLUSION:** VR is a simple, inexpensive, and beneficial treatment, and may be an appropriate first stage of management for many dizzy patients in primary care. Author.

Primary non-Hodgkin's lymphoma of the nasal cavity: prognostic significance of paranasal extension and the role of radiotherapy and chemotherapy. Li, Y. X., Coucke, P. A., Li, J. Y., Gu, D. Z., Liu, X. F., Zhou, L. Q., Mirimanoff, R. O., Yu, Z. H., Huang, Y. R. Department of Radiation Oncology, Cancer Hospital, Chinese Academy of Medical Sciences and Peking Union Medical College, Beijing, People's Republic of China. *Cancer* (1998) August 1, Vol. 83 (3), pp. 449–56.

BACKGROUND: This study was conducted to determine whether the paranasal extension of a primary non-Hodgkin's lymphoma (NHL) of the nasal cavity has any deleterious effect on patient outcome. **METHODS:** One hundred and seventy-five patients with previously untreated nasal NHL were reviewed. There were two with low grade, 107 with intermediate grade, 17 with high grade, and 49 with unclassifiable lymphomas. In 48 cases the immunophenotype was available and 46 were T-cell lymphoma. According to the Ann Arbor system, there were 133 patients with Stage IE, 28 with Stage IIE, four with Stage IIIE, and 10 with Stage IVE lymphomas. Stage IE was subdivided into limited Stage IE (i.e. confined to the nasal cavity (67 patients)) or extensive Stage IE (i.e. presenting with extension beyond the nasal cavity (66 patients)). For patients with limited Stage IE diseases the treatment of choice was radiotherapy with or without chemotherapy. In patients with extensive Stage IE disease, treatment was comprised of a combination of chemotherapy and radiotherapy or radiotherapy alone. For patients with a more advanced stage of disease (IIE–IVE), chemotherapy was an integral part of the treatment and was completed by irradiation, especially for patients with Stage IIE disease. **RESULTS:** The actuarial overall survival (OS) and disease free survival (DFS) rates at five years for the whole group were 65 per cent and 57 per cent, respectively. The five-year OS and DFS rates were influenced by stage, with a gradual decrease from 75 per cent and 68 per cent for Stage IE disease to 35 per cent and 28 per cent for Stage IIE disease, and 31 per cent and 19 per cent for Stage IIIE/IVE disease. Patients with limited Stage IE disease survived significantly longer (90 per cent five year OS) compared with those with extensive Stage IE disease (57 per cent five-year OS; $p < 0.001$). For 67 patients with limited Stage IE disease, the five-year OS was 89 per cent with radiotherapy alone and 92 per cent with radiotherapy and chemotherapy, whereas for 66 patients with extensive Stage IE disease, the five-year OS was 54 per cent with radiotherapy and 58 per cent with combined modality therapy or chemotherapy

($p > 0.05$). **CONCLUSIONS:** The prognosis of patients with primary NHL of the nasal cavity is stage dependent. In this large cohort of Stage IE patients, it was demonstrated that the paranasal local extension was a significant prognostic factor associated with poorer treatment outcome. The authors believe that Ann Arbor Stage IE should be subclassified further into limited and extensive Stage IE. The addition of chemotherapy did not appear to modify significantly the survival of patients with either limited or extensive Stage IE disease. The extranodal progression observed in patients with extensive Stage IE and Stage IIE–IVE disease clearly illustrates the need for improvement of systemic treatment. Author.

The National Cancer Data Base report on the relationship of race and national origin to the histology of nasopharyngeal carcinoma. Marks, J. E., Phillips, J. L., Menck, H. R. Department of Radiation Oncology, Missouri Baptist Medical Center, St Louis, USA. *Cancer* (1998) August 1, Vol. 83 (3), pp. 582–8.

BACKGROUND: The development of nasopharyngeal carcinoma reflects interactions of genetics, diet, and viral agents. It is more common in Asians than non-Asians, with different characteristic histologic types. This study examined nasopharyngeal carcinoma in the US as a function of patient origin and histology. **METHODS:** The data were from the National Cancer Data Base (NCDB). The 5069 nasopharyngeal carcinoma cases were grouped by histologic type: keratinizing squamous cell, nonkeratinizing, and undifferentiated carcinoma. Patient origin was derived from race, Hispanic ethnicity, and place of birth. **RESULTS:** World Health Organization (WHO) type 1 keratinizing squamous cell carcinomas comprised 75 per cent of the US nasopharyngeal carcinoma cases and were found most often in US-born, non-Hispanic whites. WHO-2 nonkeratinizing and WHO-3 undifferentiated carcinomas of the nasopharynx comprised the remaining 25 per cent of nasopharyngeal carcinomas and were more common in Asians. Histologic composition varied for each of the 12 patient origin groups in the study and correlated with survival after treatment with ionizing radiation. Asians had the highest proportion of radioresponsive WHO-2 nonkeratinizing and WHO-3 undifferentiated carcinomas of the nasopharynx and better survival than African-Americans and Hispanic and non-Hispanic whites, who had the greatest number of the less radioresponsive keratinizing squamous cell carcinomas of the nasopharynx. The five-year relative survival was 65 per cent for the nonkeratinizing and undifferentiated carcinomas of the nasopharynx and 37 per cent for the keratinizing variety. **CONCLUSIONS:** The survival rate of the patient origin groups correlated with the histologic composition of their nasopharyngeal carcinomas. Those with the highest proportion of radioresponsive nonkeratinizing and undifferentiated carcinomas had the best survival. Author.

Expression of p53 in normal nasal mucosa and in sinonasal papillomas with and without associated carcinoma and the relation to human papillomavirus (HPV). Franzmann, M. B., Buchwald, C., Jacobsen, G. K., Lindeberg, H. Institute of Pathology, Gentofte University Hospital, Denmark. *Cancer Letters* (1998) June 19, Vol. 128 (2), pp. 161–4.

The aim of the present study was to investigate the expression of p53 in sinonasal papillomas, carcinomas ex papillomas and normal nasal mucosa. Furthermore, we wanted to study the expression of p53 in relation to the presence of human papilloma virus (HPV). Immunohistochemical staining was performed on 37 formalin-fixed paraffin-embedded biopsies comprising seven biopsies from normal nasal mucosa, 13 papillomas of an exophytic growth pattern, 12 papillomas of an endophytic growth pattern and five carcinomas. The level of p53 overexpression was defined as more than five per cent positive nuclei. The normal nasal mucosa showed no positive nuclei. The papillomas of both exophytic and endophytic growth patterns showed scattered positive nuclei, but in all cases this was less than five per cent. p53 was overexpressed in three out of five carcinomas. In conclusion, we found an overexpression of p53 in carcinomas occurring in sinonasal papillomas but not in the benign tumours of the sinonasal mucosa. Thus, this report supports the concept that p53 may have a role in the carcinogenic process in head and neck tumours. Author.